

Hanson Aggregates UK

Whatley Quarry

Environmental Impact
Assessment (EIA)
Revised Scoping Report



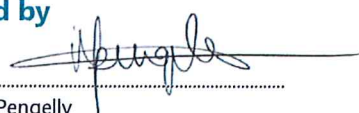
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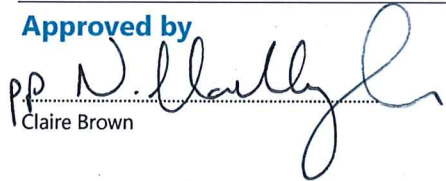
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1. Introduction

1.1 Overview of the Proposed Scheme

- 1.1.1 Hanson UK Ltd (hereinafter referred to as Hanson) plan to secure the continued extraction of all consented limestone reserves, and extraction of further unconsented reserves, within the existing footprint of Whatley Quarry, near Frome in Somerset (hereafter referred to as 'the Proposed Scheme').
- 1.1.2 Hanson seeks to submit a full planning application and supporting Environmental Impact Assessment (EIA) to enable addition mineral extraction from 'The Western Staggered Benches', the 'Northwest Tip', and a deepening of the base of the quarry from 0 m above ordnance datum (AOD) to -60 m AOD.
- 1.1.3 Further details of the Proposed Scheme can be found in **Chapter 2: The Proposed Scheme**.

Whatley Quarry revised planning approach

- 1.1.4 With regards to the Proposed Scheme, Hanson has previously submitted a Scoping Report to Somerset County Council (SCC) in May 2020. In response, pre-application advice/Scoping Opinion dated 24 August 2020 was issued by Hampshire Services on behalf of Somerset County Council (SCC).
- 1.1.5 The planning approach for the Proposed Scheme as set out in the May 2020 Scoping Report sought to vary a number of planning conditions attached to planning consent 109122/002 dated 6 July 1996 under Section 73 of the Town and Country Planning Act 1990, to enable extraction from 'The Western Staggered Benches', the 'Northwest Tip', and a deepening of the base of the quarry from 0 m above ordnance datum (AOD) to -60 m AOD. Amendments were proposed to conditions 3 (duration of permission), 12 (phased working of the quarry), 17 and 18 (protection of groundwater), and 39 (depth of working) attached to the extant permission 109122/002.
- 1.1.6 The May 2020 Scoping Report noted that the extant principal consent for Whatley Quarry – 109122/002 dated 6 July 1996 – was subject to an application for determination of conditions under the Review of Minerals Permissions (ROMP) in accordance with the Environment Act 1995 (First Periodic Review) in December 2011. This application remains with the Minerals Planning Authority (Somerset County Council) for determination.
- 1.1.7 In seeking to address the undetermined 2012 ROMP, in their pre-application advice (August 2020, page 5) SCC state:

"A formal view from SCC on the ROMP for Whatley is still outstanding pending a response from the applicant on whether they would consider a withdrawal of the existing ROMP and the resubmission alongside the proposed S73 application".
- 1.1.8 Hanson, through the on-going pre-application consultation process, have repeatedly sought further (legal) clarification from SCC on this point. To date, following numerous requests from both Hanson and Wood, the only further clarification received from SCC has

been in the form of an email from Colin Arnold dated 19 July 2021. The email confirmed that the ROMP application remains a live consideration for SCC but that the Environmental Statement/information would need to be updated in order to progress the ROMP application. This position was reiterated on a call between SCC and Hanson/Wood on 20 January 2022, which was attended by Ruth Amundson, who confirmed she was the SCC case officer for the Whatley ROMP application. Ruth indicated she was keen to set a timescale for the provision of the necessary information to update the outstanding ROMP submission. No written confirmation of this request has been received to date.

- 1.1.9 As a result, and having sought legal advice themselves, Hanson hereby confirm that they **will not be withdrawing** the undetermined 2012 ROMP application. Furthermore, they have revised their planning approach with regards to the Proposed Scheme.
- 1.1.10 As set out above, Hanson now seek to submit a **full planning application and supporting EIA** for the Proposed Scheme. The proposed scope of the EIA as set out in the May 2020 Scoping Report will remain largely unchanged. However, to allow the Minerals Planning Authority (MPA) to consider the 2012 ROMP application against an up-to-date baseline and supporting environmental assessment, it is also proposed to widen the scope of the EIA to include an Air Quality Assessment as well as a Landscape and Visual Impact Assessment (as addressed in **Chapter 5**). These topics were originally excluded from the scope set out in the May 2020 Scoping Report but were included in the EIA which accompanied the ROMP in 2021. By submitting an EIA with the same topic coverage as that submitted with the ROMP, it is anticipated that the updated information presented would be sufficient for the MPA to:
- i. Determine a full application for the proposed amended working method at Whatley Quarry; and
 - ii. Determine the outstanding ROMP submission.

Hybrid EIA

- 1.1.11 In light of the above revised planning approach to Whatley Quarry, this revised Scoping Report thus sets out the scope of a proposed 'hybrid EIA' to enable **both** the:
- determination of planning conditions for the undetermined 2012 ROMP application under the Environment Act 1995; and
 - determination of a full planning application under the Town and Country Planning Act (TCPA) 1990.

1.2 The applicant and project team

- 1.2.1 This revised 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 report

- 1.3.1 This revised 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 deepening at Whatley Quarry meets the criteria for EIA development under Schedule 1 of *The Town and Country Planning (Environmental Impact Assessment) Regulations 2017*¹ (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.
- 1.3.3 This revised 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;

¹ *The Town and Country Planning (Environmental Impact Assessment) Regulations 2017* [online]. Available at: <http://www.legislation.gov.uk/uksi/2017/571/contents/made>

- 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 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 overview** 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:** sets out the proposed revised 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 proposed development site

- 2.1.1 Whatley Quarry is an operational Carboniferous limestone quarry, which is located approximately (~) 0.6 km to the north-west of the village of Whatley. The quarry (including the plant area and areas where soils are stored etc.) covers a total area of ~180 hectares (ha) and occupies the position of a plateau lying at around 130 m AOD on the eastern boundary rising to some 158 m AOD some 2 km to the west. The land to the north of the quarry falls steeply into the valley of the Mells River, on the north bank of which lies the village of Mells. The hamlets of Mells Green and Little Green lie between the quarry and the river. To the south lies the valley of Whatley Brook (which runs through Whatley Bottom). The hamlet of Chantry neighbours to the south/ southwest.
- 2.1.2 The main approach route is from the east via Whatley Road which runs in a north/south direction and forms the eastern site boundary. Two road access points exist. One which serves (primarily) as a service access lies in Whatley Bottom, while the main access site lies some 0.5 km further to the north. A dedicated rail line passes through a tunnel under Whatley Bottom into the Plant Site used exclusively for mineral export. The railway branch line runs eastwards, connecting to the Reading and Taunton line north of Frome. The rail operation is managed by a joint-venture company (between Hanson and Aggregate Industries) Mendip Rail.
- 2.1.3 The site location is illustrated in **Figure 2.1**.

2.2 Background to the development

- 2.2.1 Quarrying has been undertaken at Whatley Quarry since the late 1930's. The site forms part of the wider Mendip Hills area which has long been a prominent location in the Somerset minerals industry, producing hard rock aggregates of national importance.
- 2.2.2 The planning history at Whatley Quarry dates back to 1948, when permission was granted for continued mineral extraction under the Town and Country (General Interim Development) Order (IDO) (ref. Interim Development Certificate reference 81). A revised application (ref. 109122/002) for a smaller westward's extension² was submitted and subsequently approved in 1996 and forms the principal consent for Whatley Quarry. This principal consent was the subject of an application for determination of conditions under the Review of Mineral permissions in accordance with the Environment Act 1995 (First Periodic Review) in December 2011. This application remains with the Minerals Planning Authority (Somerset County Council) for determination.
- 2.2.3 There are also several Section 106 legal agreements relating to the extant 1996 permission. These relate to the surrendering of mineral planning permissions at nearby locations and the previous permission relating to Whatley Quarry; road improvements and

² 109122/002 (dated 6 July 1996) – Continued Quarrying & processing of Limestone at Whatley Quarry, and Extension to Quarry (35ha) together with the formation of a reservoir at Snatch Bottom and Improvements to Holywell Road

funding of school transport; borehole agreement and compensation measures; Bath hot springs monitoring; and river and spring augmentation measures.

- 2.2.4 Today, the site provides high quality crushed limestone which is supplied to both national and regional markets, as well as asphalt and ready mixed concrete as added value products which are supplied to local and regional markets. The limestone varies slightly in composition and colour from bed to bed, but all are considered of good quality such that production variation is minimal, and the stone can be worked with little need for selection.
- 2.2.5 Annual output is limited by the extant planning consent to a maximum of 24 million tonnes over a 3-year calendar period. The site employs over 60 persons directly and a wide range of support staff and specialist subcontractors. Working is undertaken in shifts and includes night-time working to a limited extent.

2.3 Reasons for the Proposed Scheme

- 2.3.1 Whatley Quarry is one of Hanson's flagship sites. Its rail link 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 southeast 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 reserve.
- 2.3.2 However, for this strategic quarry to continue to supply valuable limestone resource to a range of regional and national construction projects, it is vital that the site replenishes its landbank of permitted material. Indeed, projects such as recently approved High Speed 2 rail link from London to Manchester means that there will be greater emphasis on rail linked quarries like Whatley to supply these more distant markets. In response to these increased demands, Hanson needs to carefully consider a strategy for ensuring that Whatley can continue to supply aggregates at existing permitted levels to the more distant, nationally significant construction markets, whilst still meeting the very important needs of the local south-west markets.
- 2.3.3 A fundamental part of this strategy is to secure the continued extraction of all consented limestone, as well as extraction of further unconsented reserves within the existing footprint of the quarry.
- 2.3.4 The extraction of consented reserves at Whatley is currently significantly complicated by the fact that there are conditions which affect the rate at which the quarry can be worked, i.e., conditions (17) and (18) which state that:

“(17) Save with the written consent of the MPA:

(a) the floor of the existing quarry shall not be lowered more often than once every four years other than for the construction of storage reservoirs. The first such lowering shall not take place before 1 January 1998;

(b) each lowering of the floor of the existing quarry shall not exceed 15 m.

(18) No quarry bench in the area of the application permitted shall be more than 100 m in advance of the bench below except where the bench below forms the base of the phase currently being worked”.

- 2.3.5 These conditions effectively mean that given where current consented, remaining reserves are located within the quarry, the site’s ability to supply its approved output rates of up to an average of 8 mt per annum is becoming increasingly compromised.
- 2.3.6 To enable Whatley Quarry to continue playing its part as a strategic supplier of limestone aggregate, and to ensure that the limestone within the site is worked in a sustainable manner – and most notably, in a way which does not sterilise large quantities of economically viable resource – Hanson is seeking to submit a full planning application and supporting EIA to:
- Facilitate the efficient working of remaining consented reserves; and
 - Enable additional unconsented reserves within the footprint of the quarry (of which there are ~76 mt) to be worked through the re-profiling of the benches within the quarry as well as a deepening of the quarry itself.
- 2.3.7 Existing, permitted output levels would remain unchanged, however, to ensure that no valuable mineral is sterilised, it is anticipated that the site would need to operate beyond its current 2030 end date, to around 2042.

2.4 Description of the Proposed Scheme

Mineral extraction

- 2.4.1 The development seeks to allow for a change to the currently approved working method within the main Whatley Quarry only to include additional extraction from the following areas:
- The ‘Western Staggered Benches’ – reprofiling of the benches in the western part of the quarry to release a further ~15.5 mt;
 - The ‘Northwest Tip’ – reprofiling the benches on the north-western part of the quarry to release a further ~4.5 mt; and
 - Deepening of the base of the quarry from its permitted 0 m AOD to -60 m AOD, which would release a further ~56 mt.
- 2.4.2 The permitting of this additional limestone resource will ensure continuity of supply to important rail-based markets and the importance of safeguarding the regionally significant quarry operations at Whatley.
- 2.4.3 Permitted extraction techniques and output rates would remain unchanged and mineral would continue to be processed at the site’s fixed processing plant, located in the south-eastern part of the quarry. Existing access arrangements into and out of the site would also remain unchanged. However, to reinforce Whatley Quarry’s position as a strategically significant supplier of limestone aggregates, Hanson is (separately) seeking to secure the long-term resumption of permitted limestone extraction from their nearby Westdown

Quarry (located ~1.5 km to the south)³. 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. This means that fewer HGV movements would be anticipated from Whatley Quarry, as the majority of the material extracted would be despatched via the on-site rail head facility. Hanson, would however, wish to see the flexibility for HGV transfer to continue from Whatley and proposes that **combined** the two quarries (Whatley and Westdown) would not exceed the permitted 4 mt per annum of material being despatched from site via road.

2.4.4 The planning application boundary is illustrated on **Figure 2.2**.

Operating hours

2.4.5 It is proposed that the operating hours in the extant permission for Whatley Quarry remain unaltered, as follows:

- Stripping and Construction Works:
 - ▶ 0800 to 1800 hours Mondays to Fridays; and
 - ▶ 0800 to 1200 hours on Saturdays.
- Face Working –Top Two Benches:
 - ▶ 0600 to 2000 hours Mondays to Fridays; and
 - ▶ 0600 to 1200 hours on Saturdays.
- Drilling – Top Two Benches:
 - ▶ 0600 to 1800 hours Mondays to Fridays (excluding Public Holidays); and
 - ▶ 0600 to 1200 hours on Saturdays.
- Blasting – except in an emergency:
 - ▶ 0900 to 1800 hours Mondays to Fridays (excluding Public Holidays); and
 - ▶ 0900 to 1200 hours on Saturdays.

Restoration strategy

2.4.6 A revised restoration scheme that takes account of the proposed landform changes will also be 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 A consolidating planning submission for Westdown Quarry was submitted to SCC in January 2021, albeit it not validated and registered until May 2021 as four planning applications - SCC/3837/2021/IDO, SCC/3838/2021/ROMP, SCC/3836/2021/IDO, and SCC/3795/2021. At the time of writing, all four applications are still being determined by SCC.

3. Legislation and planning policy review

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 (**Chapter 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*⁴.
- 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) (July 2021); and
 - Supporting technical guidance as set out in the National Planning Practice Guidance (NPPG).
- 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 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 [online]. Available at: <http://www.legislation.gov.uk/uksi/2017/571/contents/made>

- 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 particularly relevant to Whatley 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)
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.
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
Development Policy 8 – Environmental Protection	possible, enhancement of internationally, nationally or locally designated natural
Development Policy 9 – Transport Impact of New Development	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.

- 3.4.4 In addition, the Mendip 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 to the stage of preparation, the extent to which there are unresolved objections, and degree of consistency with the NPPF.

3.5 Other consents needed

- 3.5.1 The proposals at Whatley Quarry will require other consents, licences, permits, etc. These will be identified during the course of the EIA and appropriate will take place with organisations such as the local planning and highway authorities, Civil Aviation Authority, 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 consequence 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:
1. the people and environmental resources (collectively known as 'receptors') that could be significantly affected by the Proposed Scheme; and
 2. 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:
3. the magnitude and other characteristics of the potential changes that are expected to be caused by the Proposed Scheme;
 4. the sensitivity of receptors to these changes;
 5. the effects of these changes on relevant receptors; and (where relevant)
 6. 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 assessment⁵.
- 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 through 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

⁵ Where an effect cannot be confirmed as being 'not significant' these will be 'scoped in' to the assessment.

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.

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:
1. major effects, which will always be determined as being significant in EIA terms;
 2. 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
 3. 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 (Zol) 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 Zol for a given environmental topic, should be subject to CEA. The Zol 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 Context 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 scheme 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 clear distinction will be made between the assessment of the full planning application and that for the outstanding ROMP submission;
 - ▶ 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.

5.1.2 As set out in **Chapter 1: Introduction**, since the submission of the May 2020 Scoping Report and subsequent receipt of SCC's pre-application advice/Scoping Opinion in August 2020, Hanson has revised its planning approach with regards to Whatley Quarry and are now seeking to submit a full planning application and supporting EIA for the Proposed Scheme. Although the proposed scope of the EIA as set out in the May 2020 Scoping Report will remain largely unchanged, the scope has been widened to include an Air Quality Assessment as well as a Landscape and Visual Impact Assessment (see **Table 5.1**). These topics were originally excluded from the scope set out in the May 2020 Scoping Report but were included in the EIA which accompanied the ROMP in 2021. By submitting

an EIA with the same topic coverage as that submitted with the ROMP, it is anticipated that the updated information presented would be sufficient for the MPA to:

1. Determine a full application for the proposed amended working method at Whatley Quarry; and
2. Determine the outstanding ROMP submission.

5.1.3 In response to the May 2020 Scoping Report, SCC provided pre-application advice/Scoping Opinion in August 2020. In the covering letter to this Revised Scoping Report (ref. 40380-WOOD-XX-XX-CO-O-0002_S3_P01), Hanson have challenged some aspects of the previously received pre-application advice/Scoping Opinion and sought further clarifications. Nonetheless, as set out where appropriate in the covering letter, Hanson are proposing to keep the scope of the EIA unchanged.

Table 5.1 EIA Scope comparison

EIA topic	EIA Scope (May 2020 Scoping Report)	Revised EIA Scope (this report)
Landscape and Visual	Scoped out	Scoped in
Noise	Scoped in	Scope remains unchanged
Vibration	Scoped in	Scope remains unchanged
The Water Environment	Scoped in	Scope remains unchanged
Biodiversity	Scoped in	Scope remains unchanged
Traffic and Transport	Scoped in	Scope remains unchanged
Air Quality	Scoped out	Scoped in
Socio economics	Scoped in	Scope remains unchanged
Climate	Effects on climate to be considered within chapter assessing the hydrology/hydrogeology and flood risk. No separate climate chapter	Scoped in
Cumulative effects	Scoped in	Scope remains unchanged
Cultural heritage	Scoped out	Remains scoped out*
Land and soils (including agriculture)	Scoped out	Remains scoped out*
Major accidents and disasters	Scoped out	Remains scoped out

*See cover letter (ref. 40380-WOOD-XX-XX-CO-O-0002_S3_P01) for additional narrative

5.2 Landscape and visual (revised)

Baseline conditions

Landscape character

National level

- 5.2.1 At a national scale, Whatley Quarry lies within the Mendip Hills National Character Area (NCA), as defined in the National Character Area Profile 141⁶ (NE, 2013). Key characteristics of this NCA with specific regard to Whatley Quarry 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 Whatley Quarry is located); and

"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."

- 5.2.2 The supporting description notes that "... quarrying expanded greatly, particularly in the eastern Mendips, with massive quarries such as Whatley and Torr Works being carved out of the hills. These enormous workings are remarkably well hidden in the landscape and can easily be passed 100 m from the edge without being seen."

District level

- 5.2.3 At a more detailed scale, Mendip District Council has undertaken a district-wide landscape character assessment (*The Landscape Assessment of Mendip District*⁷) which indicates that Whatley Quarry is located within the Rolling Farmland with frequent arable Landscape Character Type (LCT) and more specifically within the northern spur of the Leigh-Oakhill (A9.1) Landscape Character Area (LCA). The description of this LCA primarily relates to the landscape to the west of Whatley Quarry and the three settlements within this area. The key characteristics are cited as:

- "Irregular shelf adjacent to steep valley;
- Mix of flat and undulating land;
- Arable on flatter land;
- Pasture surrounding large hedgerows;
- Frequent hedgerow trees;

⁶ Natural England. (2013). NCA Profile 141: Mendip Hills (NE416). [online]. Available at: <http://publications.naturalengland.org.uk/publication/5370593?category=587130>

⁷ Chris Blandford Associates. (1997). Landscape Assessment of Mendip District. [online]. Available at: <http://www.mendip.gov.uk/landscapeassessment1997>

- Small fields around villages and hamlets; and
- Large villages”.

5.2.4 A number of other LCAs lie close to Whatley Quarry as follows:

- The valley formed by Fordbury Water and the associated Whatley Bottom to the south of Whatley Quarry lie with an LCA which is defined as A10.3 *Chantry and Fordbury Water Valley*;
- The village of Whatley and the agricultural landscape to the northeast and southwest lie within the *South East Farmlands* (A11) LCA;
- The village of Mells and land to the east and west (including Mells Park and Tedbury Covert) are located within *The Lower Mells River Valley* (A10.2) LCA; and
- Land to the north of Mells is covered by an LCA which is defined as Northern and Eastern Farmlands (A7).

Landscape designations

National landscape designations

5.2.5 There are no national landscape designations located near to Whatley Quarry with the closest national landscape designation being the Cranborne Chase & West Wiltshire Downs AONB located ~6.9km to the southeast at its closest point. The Cotswolds AONB lies ~9.3km to the north of the site.

Special landscape features

5.2.6 Mells Valley – east of Mells Village along the Mells River corridor is designated in the *Mendip District Local Plan Part I Strategy and Policies 2006-2029*⁸ as a Special Landscape Feature and protected under Policy DP4. This Special Landscape Feature covers 185ha and lies ~0.5km to the northeast of Whatley Quarry at its closest point. The *Assessment of Special Landscape Features*⁹ provides further details under a range of quality criteria.

Visual baseline

5.2.7 The valley land forms within the landscape surrounding Whatley Quarry, high prevalence of woodland cover and the effective perimeter screening around the quarry combine to minimise views of the quarry itself and associated operations. Previous field surveys undertaken by a Chartered Landscape Architect from Wood to Whatley Quarry and its environs has confirmed that the land-used pattern summarised above results in a very limited number of visual receptors who have views of the quarry. The exception is users of bridleway FR 10/98 as it follows the top of the screening mound at the southern end of the Whatley Quarry to the east of Finger Farm. Recent native tree planting introduced

⁸ Mendip District Council (2014). Mendip District Local Plan Part 1: Strategy & Policies 2006-2029. [online]. Available at: <https://www.mendip.gov.uk/localplan>

⁹ Mendip District Council (2012). Assessment of Special Landscape Features. [online]. Available at: <http://www.mendip.gov.uk/evidencebaselandscape>

on the screening mound between the bridleway route and the quarry void will in time screen views from the majority of the route although a strategic gap in the vegetation have been retained to provide a viewing area from which operations within the quarry can be observed.

Effects not requiring further consideration

5.2.8 On the basis of the findings from previous desk and field surveys and experience of undertaking LVIA's for other mineral deepening projects, it was proposed in the May 2020 Scoping Report that an LVIA is scoped out of the EIA. No significant landscape or visual effects are likely to arise as a result of the proposed development based on the following considerations:

- quarrying activity at Whatley Quarry is an established feature of the landscape and is well screened in views from the surrounding landscape as documented in the relevant NCA profile and recorded during field surveys;
- from the single publicly accessible location (bridleway FR 10/98) from which views of the quarry void are available, deepening operations would be viewed in context with the operational quarry thereby minimising visual contrast and the reducing the potential for a magnitude of change to occur that is sufficient to generate significant visual effects;
- no lateral expansion is proposed and as a consequence that would be no removal of landscape elements (trees, hedgerows, grassland, buildings etc) to facilitate the proposed deepening; and
- revisions to the approved restoration scheme are likely to reflect land uses proposed as part of the permitted restoration albeit with varying footprints and quantities. As such, the revised restoration scheme is, in itself unlikely to give rise to significant landscape or visual effects.

Revised EIA scope

5.2.9 Whilst the above considerations remain valid, given that Hanson are now seeking to submit a full planning application and supporting EIA and will not be withdrawing the undetermined 2012 ROMP application, it is proposed that the EIA scope will now include an LVIA. Essentially, this assessment will seek to update that set out in the 2012 ROMP submission to reflect any change in the baseline position and the Proposed Scheme.

5.3 Noise (unchanged)

Relevant policies and their implications for scoping

5.3.1 **Table 5.2** 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 5.2 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, 2021 (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, 2019 (NPPG)	The NPPG relates in terms of a noise hierarchy the levels of perception to noise exposure with expected outcomes and required actions.
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: <i>“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”.</i> 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: <i>“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.</i> <i>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”.</i>

Policy reference	Implications
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 be subject to the 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 2011 (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); and
- 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 5.3** below.

Table 5.3 Summary of standards and technical guidance for noise

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 LA10,18hr 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 LA10, 18hr noise indices to the LAeq, 16hr and LAeq,8hr indexes.
Operational road traffic noise - Highways Agency	Presents a methodology for determining impacts upon noise sensitive receptors from changes in road traffic noise due to road projects.

Technical guidance	Summary
<i>Design Manual for Roads and Bridges, 2011 (DMRB)</i>	
<i>Operational sound - Acoustics – Attenuation of sound during propagation outdoors: Part 2 General Method of Calculation, 1996 (ISO 9613-2)</i>	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.
<i>Institute of Environmental Management and Assessment Guidelines for Environmental Noise Impact Assessment, 2014 (IEMA)</i>	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. Particularly relevant is planning consent ref 109122/002 condition 31.

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 Review of the Google Earth imagery indicates that the main source of noise for Whatley, Mells Green, Little Green and Chantry would be from the existing workings at Whatley Quarry. The existing planning consent (ref: 109122/002) requires that existing operations at the quarry are within the noise limits set out under condition 31 of that permission. The condition identified the noise criteria for residential receptors (The Old Schoolhouse; Little Clavey's; Meadow View and Yew Tree (Chantry)) in addition to criteria for all residential receptors.

Predicted trends

- 5.3.6 It is envisaged without the proposed scheme that sound contributions would continue as per existing operation of Whatley Quarry in line with the extant planning permission.

Scope of the assessment

- 5.3.7 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 NSRs 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

5.3.8 Wood will undertake appropriate surveys to quantify the baseline acoustic environment in the vicinity of the receptors agreed with the Environmental Health Officer (EHO) at 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 7 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. The proposed locations suggested below for noise monitoring reflect those set out in the ES that supported the application for determination of conditions under the Review of Mineral permissions in December 2011. It is proposed that these locations are identified for noise monitoring for the proposed scheme pending agreement with the EHO:
 - ▶ Mellsgreen Farm;
 - ▶ Yew Tree Cottage (immediately adjacent to Meadow View);
 - ▶ The Old School House;
 - ▶ Finger Farm;
 - ▶ The Smithy;
 - ▶ The Bushes; and
 - ▶ Chantry Farm.
- Monitoring of parameters such as $L_{Aeq,T}$, $L_{A90,T}$, $L_{A10,T}$ and L_{Amax} 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.

5.3.9 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.

- 5.3.10 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 data indicates that there will be an increase of 25% or decrease of 20% in existing traffic levels or if there is an increase of more than 1 dB(A) due to HGV traffic increases on the main route(s) to the development. Any increase would be assessed in terms of the criteria given in DMRB. However, it is understood at this stage that the production rate at the quarry will remain unchanged as part of the proposed scheme.
- 5.3.11 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 to comply with existing planning conditions as a result of the assessment will also be provided.

5.4 Vibration (unchanged)

Relevant policies and their implications for scoping

- 5.4.1 **Table 5.4** 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 5.4 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 states that applications for mineral development will be subject to the 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

Policy reference	Implications
Policy DM8: Mineral operations and the protection of local amenity	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 5.5**.

Table 5.5 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	Government guidance on this subject is given within this document which also proposes example blasting conditions for planning consents.

Technical guidance	Summary
<i>Production Blasting at Surface Mineral Workings". 1998</i>	
<i>Extant Planning Consents, e.g., Ref: 109122/002</i>	In terms of blasting this includes Condition 34 which places restrictions on the maximum peak particle velocity of 9mm per sec at a 95% confidence level.

Baseline conditions

Data sources

- 5.4.4 The assessment scope has been based upon the results of a desk study and professional judgement based on knowledge of the site and surrounding area. The desk study has involved reviewing Ordnance 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 vibration would be from the operation of the existing Whatley Quarry.

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 at the consented Whatley Quarry in terms of either frequency of blasting or the closer proximity of blasting operations to existing receptors. However, this is not considered likely.

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 Whatley Quarry would 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 as well as Condition 34 of the extant planning consent (ref: 109122/002) which states:

"All blasting operations in the area hereby permitted shall be designed not to exceed a peak particle velocity of 9mm per sec at a 95% confidence level at the nearest residential property."

- 5.4.11 Any remedial measures considered necessary as a result of the blasting vibration assessment along with general recommendations would be put forward to ensure that the proposed development meets the criteria in the extant planning conditions. 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 consideration

- 5.4.12 Comprehensive investigations into the nature and effects of air overpressure with particular 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 The Water Environment (unchanged)

- 5.5.1 **Table 5.6** 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 5.6 Relevant policies and their implications – water environment

Policy reference	Implications
National policy:	
National Planning Policy Framework, 2021 (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, 2021 (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.
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

5.5.2 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

5.5.3 The key data sources used to inform this part of the Scoping Report are listed in **Table 5.7**.

Table 5.7 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 Licensing 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

Topic	Aspect	Source of information
Hydrogeology	Aquifer status	Environment Agency/British Geological Survey Aquifers Bedrock Designation map
	Groundwater levels	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

- 5.5.4 Whatley Quarry is located in the belt of steeply dipping Carboniferous Limestone on the northern limb of the Beacon Hill Pericline towards the eastern end of Mendip Hills. The quarry contains almost all of the Carboniferous Limestone sequence which dips at around 65°–80° to the north. This includes a Black Rock limestone outcrop is also apparent here. The limestone is well fractured and jointed with only occasional faulting. One minor fault is evident in the upper benches of the northern face of the quarry. The limestone sequence is understood to extend to a depth of over 1000 m.

Hydrology

Watercourses

- 5.5.5 There are no natural watercourses within the Site boundary, hydro-geologically the Site lies within the surface catchment area of the Mells River which lies to the north and flows west to east.
- 5.5.6 To the north of the quarry is the River Mells which at its nearest point is approximately ~350m from the site. The river runs east to west. To the south of the quarry is Whatley Brook which runs southwest to northeast and at its closest point runs through the South East of the site as it flows under Whatley Bridge (which runs through Whatley Bottom). Whatley Brook joins the River Mells near Frome. Whatley Quarry falls within the surface water catchment area of the River Mells.
- 5.5.7 River Basin Management Plans (RBMPs) have been drawn up by the Environment Agency for the ten river basin districts in England and Wales as a requirement of the WFD. The River Mells to the north of the quarry and Whatley Brook are covered by the RBMP for the Severn River Basin District (Environment Agency, 2015). A summary of the local WFD river water bodies and their associated status definitions is provided in **Table 5.8**.

Table 5.8 Summary of local WFD river water bodies and their associated status definitions

WFD Water /Body	Whatley Bk - source to conf Mells R	Mells source to conf with Somerset Frome
Water Body Identifier	GB109053021990	GB109053022020
Heavily Modified Water Body (HMWB)	N	N
Overall current (2016) status	Moderate	Moderate
Predicted 2027 status	Good	Good

5.5.8 In terms of surface water run-off, the quarry's plant area comprises a hard surfaced of compacted crushed aggregate or surfaced with asphalt laid to a fall, consequently runoff is collected and channelled through an oil intercept prior to entering the site's approved discharge consent easement to the River Mells.

5.5.9 Regarding foul water, sewerage from mess and toilet facilities are contained within a sealed cess pit and prevented from discharging to either surface water or groundwaters.

Flood risk categorisation

5.5.10 Whatley Quarry is situated largely in Flood Zone 1, indicating a low probability of fluvial flooding, except for a small area of plant site in the south-east corner of site near to Whatley Bridge near Railford Bottom where there is a small area of Flood Zone 2 and 3.

Hydrogeology

5.5.11 The Carboniferous limestone and Jurassic Inferior oolite is categorised by the Environment Agency 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. 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.

5.5.12 At the base of the workings is a reservoir which maintains a saturated zone in the upstream section of this part of the aquifer. Dewatering from the quarry is pumped into the River Mells and Whatley Brook. Water monitoring to assess the impacts on the hydrological and hydro-geological conditions are subject to the Section 106 agreement relating to planning permission 109122/002 granted in 1996. There is interaction between surface water and groundwaters as River Mells and Whatley Brook pass over outcropping limestone. Where the water table is below the level of streams (for example along Whatley Brook at Whatley Bottom) water is lost into the aquifer. Elsewhere the interaction depends

on the levels in the stream and water in the aquifer, where surface waters either recharge the aquifer or groundwaters emerge into the river when above the river level. It is a particularly important process near to the quarry where discharge from dewatering is often recharged back into the limestone aquifer through the bed of the stream receiving the discharge.

- 5.5.13 The 1996 permission was granted subject to S106 planning obligations prescribing methodologies for monitoring and maintenance of water flows in the Mells River and extensive monitoring at groundwater boreholes and surface water sites. The formal monitoring and assessment reporting is undertaken on a two-yearly basis in consultation with the Somerset County Council and Environment Agency. The monitoring and review reports to date conclude the mitigation is satisfactory.
- 5.5.14 The 1996 permission allows the construction of the 'Snatch Bottom Reservoir' to the north of the main quarry. The requirement for this feature formed part of the original River Augmentation Scheme. However, in developing the site a more direct discharge arrangement via a reservoir in the base of the workings was agreed with the EA and the Snatch Bottom Reservoir to date has not been required. The quarry retains the ability to construct the reservoir at a later date however, and planning conditions relating to its development have been retained.
- 5.5.15 In the past, it was suggested that the Carboniferous limestone of the Mendip Hills is the source of spring water that 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. Whatley Quarry, has, 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

- 5.5.16 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 guidance on climate change allowances to be applied in England was last updated in April 2016¹⁰ 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.
- 5.5.17 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 the aquifer status and SPZ designations.

¹⁰ Flood risk assessments: climate change allowances, Environment Agency, published 2016 (Available via: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>)

Scope of the assessment

- 5.5.18 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 Whatley Quarry area;
 - Consider the potential effects of the Whatley Quarry proposals on surface water and groundwater; and
 - Consider mitigation measures required to address these and other water-related concerns.
- 5.5.19 In accordance with existing requirements, a standalone Flood Risk Assessment (FRA) would also be produced and appended to the EIA.

Assessment methodology

- 5.5.20 The significance of an effect resulting from the proposals at Whatley 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.
- 5.5.21 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 water flows, there may also be indirect effects on downstream morphology and sediment dynamics, river water quality and flood risk.

Predicted trends

- 5.5.22 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 guidance on climate change allowances to be applied in England was last updated in March 2020 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.
- 5.5.23 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 the aquifer status and SPZ designations.

Scope of the assessment

- 5.5.24 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 Whatley Quarry area;
- Consider the potential effects of the Whatley Quarry proposals on surface water and groundwater; and
- Consider mitigation measures required to address these and other water-related concerns.

5.5.25 In accordance with existing requirements, a standalone Flood Risk Assessment (FRA) would also be produced and appended to the EIA.

Assessment methodology

5.5.26 The significance of an effect resulting from the proposals at Whatley 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.

5.5.27 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 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

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

5.6 Biodiversity (unchanged)

Relevant policies and their implications for scoping

5.6.1 **Table 5.9** lists the planning policy guidance and policy issues that need to be considered when defining the scope of the Ecological Impact Assessment (EclA).

Table 5.9 Relevant policies and their implications – biodiversity

Policy reference	Implications
National policy:	
National Planning Policy Framework, 2021 (NPPF) Section 15: Conserving and enhancing the natural environment Paragraph 174.	NPPF Paragraph 174 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.

Policy reference	Implications
NPPF Paragraph 180.	NPPF Paragraph 180 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 (as a last resort); land within or outside SSSIs should not normally be permitted.
NPPF Section 17. Facilitating the sustainable use of minerals NPPF Paragraph 210.	NPPF Paragraph 210 states that planning policies should (inter alia) set out criteria to <i>“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”</i> .
NPPF Paragraph 211.	NPPF Paragraph 211 states that mineral planning authorities should (inter alia) <i>“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”</i> .
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) 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) biodiversity. Proposals must include an assessment appropriate to the type and extent of the impact and any associated risks.

Legislation

5.6.2 Relevant legislation includes:

- The Conservation of Habitats and Species Regulations 2010 (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

- 5.6.3 The Scoping Report is based on an Extended Phase 1 habitat survey of the site undertaken by Wood in March 2018, albeit this was written to take into account options for extending the quarry laterally into surrounding semi-natural habitats at that time. The current proposals exclude any lateral extension and comprise extraction of the Western Staggered Benches, Northern Tip area and deepening, i.e., there will be no loss/change of flora/habitat that exists outside of the operational areas of Whatley Quarry. An updated Extended Phase 1 habitat survey of Whatley Quarry was undertaken in October 2020.

Summary of baseline conditions

Designated sites

- 5.6.4 There are 13 statutory designated sites of conservation value within 5km of the Site, including 2 Special Areas of Conservation (SAC) and 11 Sites of Special Scientific Interest (SSSI). There are 26 non-statutory designated sites of nature conservation value within 2km of the Site including 1 Local Wildlife Site (LWS) that is adjacent, or just within the southern site boundary.
- 5.6.5 **Tables 5.10** and **5.11** outline the results of the search for designated nature conservation sites, and briefly summarise the pathways by which development of the site could impact the conservation site.

Table 5.10 Statutory designated nature conservation sites within the relevant search area

Site	Location Relative to Site	Summary of Interest Features
Mendip Woodlands SAC	0.7km South	Primarily designated for supporting an extensive example of Tilio-Acerion forest on limestone.
Mells Valley SAC	Largest constituent area - 5km west. Nearest constituent area - 0.7km east.	Primarily designated for supporting a maternity colony of greater horseshoe bats, comprising 12% of the UK's population.
Asham Wood SSSI	0.7km South	Largest, most diverse and one of the most important ancient semi-natural woods in the Mendips.
Cloford Quarry SSSI	2.3km South	Geological
Holwell Quarries SSSI	2.3km South	Geological
Old Ironstone Works, Mells SSSI	0.7km East	Important site for roosting greater and lesser horseshoe bats.
Cookes Wood Quarry SSSI	2.3km Northwest	Geological

Site	Location Relative to Site	Summary of Interest Features
Edford Woods and Meadow SSSI	3.7km Northwest	Area supporting wide range of semi-natural ancient woodland and unimproved meadows and pastures.
Leighton Road Cutting SSSI	3.4km Southwest	Geological
St. Dunstons Well Catchment SSSI	4.7km 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	2.2km East	Important ancient woodland site.
Moons Hill Quarry SSSI	4.5km West	Geological.
Postlebury Wood SSSI	4.5km South	Important undisturbed woodland.

Table 5.11 Non-statutory designated nature conservation sites within the relevant search area

Site	Site Reference Code	Location Relative to Site	Summary of Interest Features
Cobby Wood	ST74/007	0.3km North	Ancient semi-natural broadleaved woodland.
Whatley Road Section	ST74/525	Southeast site boundary	Geological site.
Whatley Bottom LWS	ST74/018	South-eastern site boundary	Ancient semi-natural broadleaved woodland along the steep sides of the Whatley stream.
Little Acre Wood	ST74/097	Southern site boundary	Part ancient semi-natural broadleaved woodland
Railford Bottom	ST74/017	Southern site boundary	Semi-natural broadleaved woodland with rich ground flora in steep sided valley.
Mells Park	ST74/058	0.25km North	Broadleaved woodland and wood pasture with species-rich flora.
Melcombe Wood	ST74/005	0.25km North	Mixed woodland on ancient woodland site.
Railford Bottom Wood	ST74/016	0.25km South	Stream valley with ancient semi-natural woodland and unimproved calcareous grassland
Hare Warren	ST74/026	0.2km West	Largely replanted ancient woodland site.
Castlehill Wood	ST74/004	0.5km South	Strip of broadleaved woodland adjoining Asham Wood SSSI
Wadbury Valley	ST74/555	0.75km East	A steep sided river valley covered with broadleaved semi-natural woodland.

Site	Site Reference Code	Location Relative to Site	Summary of Interest Features
Chantry Pond	ST74/027	0.75km South	Lake and stream with alder and willow carr, and predominantly broadleaved woodland.
Asham Wood East	ST74/078	0.7km South	Ancient semi-natural broadleaved woodland.
Tedbury Camp LWS	ST74/035	0.9km East	Ancient semi-natural broadleaved woodland, scrub, and species-rich grassland.
Newbury Camp LWS	ST75/053	1km North	Semi-improved and unimproved calcareous grassland.
Mells - Bilboa Quarries	ST74/075	1.25km North	Disused quarries with calcareous grassland.
Barrow Hill LWS	ST75/031	1.5km South	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.
Collie Corner Lane	ST74/076	1.5km South	Lane with mature trees and hedgerows supporting rich flora.
Barnclose Quarry	ST64/595	1.5km West	Geological
Baucombe Coppice South LWS	ST64/132	1km Southwest	Semi-natural broadleaved coppiced woodland with occasional standards.
Old Down Wood LWS	ST74/019	2km East	Ancient semi-natural broadleaved woodland.
Mineral Railway LWS	ST75/029	2km North	Herb-rich railway embankment.
Upper Vobster Quarry	ST74/074	2km North	Species-rich grassland and woodland.
Shipperage Wood	ST64/048	2km North	Ancient woodland.
North Vobster Fields	ST64/121	2km Northwest	Unimproved herb rich grassland.
Maggs Wood	ST64/020	2km Northwest	Ancient semi-natural broadleaved woodland.

Priority habitats

5.6.6 Priority habitats within 2km of the Site comprise broadleaved deciduous woodlands, lowland meadows and calcareous grassland.

Habitats on site

- 5.6.7 The habitats at the site vary in type and maturity. Excluding the areas of semi-natural broadleaved woodland and rich understorey associated with Railford Bottom LWS (which are clearly of high value to biodiversity), the habitats across the Site are principally of artificial origin and immature in development relative to the surrounding natural and semi-natural habitats.
- 5.6.8 However, the belts and blocks of plantation woodland appear to have been designed to create a continuous corridor linking mature and valuable habitats at one extent of the quarry (i.e., Railford Bottom LWS) to mature and valuable habitats at the other extent (i.e., Cobby Wood and Hare Warren LWS's), and it is assumed that the habitats created in-between serve as replacements for habitats lost through quarrying. In addition to this, the value of the created habitats is set to increase in the future, with the majority of areas having not reached full maturity, and the implementation of a Biodiversity Action Plan (by Hanson UK), aimed at contributing to biodiversity through management and enhancement of these areas in the long term.
- 5.6.9 Habitats within the operational Whatley Quarry comprise almost exclusively of bare/disturbed ground, with sporadic stands of buddleia, small and sporadic patches of regenerating grassland atop undisturbed quarry benches (which are visible from atop the quarry void, but which cannot be surveyed) and the large lagoon at the base of the quarry void.

Fauna

- 5.6.10 With regards to fauna:
- 12 waterbodies within ~500m of the site were identified during desk study. Seven of which were subject to HSI assessment and were considered to have an average or good HSI score in respect of its potential to support great crested newts. These ponds were recommended for further assessment for GCN eDNA. At the time of eDNA surveys 4 ponds were dry and so sampling was not possible, whilst for the remaining 3 ponds newt eDNA was absent, including from the lagoon at the base of the quarry void;
 - Fordbury Water, adjacent to the southern site boundary is suitable for use by 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 operational areas of the site;
 - No evidence of badger activity was recorded in the Phase 1 habitat survey although badger is a mobile species and is widely distributed across the local landscape;
 - Based on the results of the desk study records and the Phase 1 habitat survey, the areas of semi-natural/natural habitat at the site is potentially of high value for commuting/foraging bats, whereas the operational areas are of negligible value. Whilst the buildings present within the quarry are deemed unsuitable for roosting bats, woodland blocks are likely to provide several roosting opportunities;

- The habitats at the site (including the operational areas) could support assemblages of breeding and wintering bird species including breeding peregrine;
- Somerset County Council states that the county supports a significant population of dormouse¹¹. As such, the site is situated within a wider landscape that is of value to dormouse, albeit there are no records of dormouse local to the site. The habitats at the site are unexceptional compared with the surrounding landscape, but it is possible that this species could traverse along the site's hedgerow and woodland habitats, albeit dormouse will not be present in operational areas; and
- The site provides suitable habitats for all British species of reptile, except for sand lizard. If present, reptiles are likely to be confined to the areas of woodland, hedgerow and grassland that are distributed around the periphery of the site, albeit Reptiles will not be present in operational areas.

Predicted trends

- 5.6.11 In the absence of the deepening project, substantial shifts in the overall baseline condition are not predicted as current land use and management practices are likely to continue.

Scope of the assessment

- 5.6.12 The EclA will consider the potential for the scheme to affect protected or conservation-notable biodiversity receptors including:
- European protected sites within 10 km;
 - Other statutory and non-statutory sites designated for their nature conservation interest within 2 km;
 - Protected species, Section 41 species of Principal Importance for the Conservation of Biological Diversity, or other conservation-notable species recorded within 2 km; and
 - Habitats of Principal Importance for the Conservation of Biological Diversity, or other conservation-notable habitats recorded within 1km.
- 5.6.13 At this stage, the site is not considered to support priority and conservation notable habitats, but has the potential to support the following protected and/or priority species:
- Peregrine falcon; and
 - A potentially notable assemblage of wintering gulls.
- 5.6.14 Where potentially significant effects are identified, a receptor may be subject to a more detailed 'secondary' assessment within the EclA designed to characterise those effects more accurately and identify any bespoke mitigation requirements (beyond normal best practice) that may be required.
- 5.6.15 Further detailed survey work and assessment was undertaken in 2019, 2020 and 2021, in accordance with best practice survey guidance. Results from the suite of surveys will

¹¹ <http://www.somerset.gov.uk/policies-and-plans/policies/european-protected-species/>

further inform the baseline and the assessment of potentially significant effects on receptors.

Assessment methodology

5.6.16 The EclA approach is based on current Chartered Institute of Ecology and Environmental Management (CIEEM) *Guidelines for Ecological Impact Assessment in the United Kingdom*¹². 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 EclA 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. EclA 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).

5.6.17 The assessment of effects takes into account 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.

Potential effects not requiring further consideration

5.6.18 Assessment of the following potential effects has led to the conclusion that they are unlikely to be significant and do not require further assessment:

¹² 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.

- Effects on the statutory sites listed below are scoped out as the receptors listed within the site citation, or their qualifying features, are not considered sensitive to potential effects at a distance greater than ~2km from the Whatley site boundary:
 - ▶ Cloford Quarry SSSI; Holwell Quarries SSSI; Cookes Wood Quarry SSSI; Edford Woods and Meadow SSSI; Leighton Road Cutting SSSI; St. Dunstons Well SSSI; Vallis Vale SSSI; Moons Hill Quarry SSSI; Postlebury Wood SSSI.
- Effects on the following protected/notable species are scoped out as they are considered highly unlikely to be present in, or reliant upon, the areas that will be affected by the proposals (i.e., the Western Staggered Benches, the Northern Tip Area and areas where the existing quarry void will be deepened):
 - ▶ Great crested newts;
 - ▶ Bats;
 - ▶ Badger;
 - ▶ Dormouse;
 - ▶ Aquatic fauna (otter and water vole);
 - ▶ Breeding birds;
 - ▶ Reptiles; and
 - ▶ Terrestrial priority species including (but not limited to) hedgehogs and brown hare.

5.7 Traffic and Transport (unchanged)

Relevant policies and their implications for scoping

5.7.1 **Table 5.12** lists the planning policy guidance and policies that are relevant to traffic and transport and sets out the implications of the guidance and policies for the scope of the EIA.

Table 5.12 Relevant policies and their implications – traffic and transport

Policy reference	Implications
National policy:	
National Planning Policy Framework 2021 (NPPF) Section 9. Promoting sustainable transport	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	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

Policy reference	Implications
Policy DM9: Mineral's transportation	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	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.
Development Policy 9 – Transport Impact of New Development	

Legislation

5.7.2 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

5.7.3 The technical guidance set out in **Table 5.13** is relevant to the assessment of effects on traffic and transport receptors.

Table 5.13 Technical guidance relevant to traffic and transport

Technical Guidance	Summary
Guidance on Transport Assessments (Department for Transport (DfT, 2007) - archived (2014))¹³	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

¹³ 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].

Technical Guidance	Summary
	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))¹⁴.	Provides guidance to developers and local authorities for identifying traffic and transport related environmental effects and receptors.
Extant Planning Consents	Cognisance of the extant planning consent conditions would also be made. Particularly relevant is planning consent ref 109122/002 condition 30.

Baseline conditions

- 5.7.4 Access to Whatley Quarry is via two accesses on to Whatley Road to the east of the site. The most southerly access serves (primarily) as a service access lies in Whatley Bottom whilst the most northerly is the main access. The majority of HGV traffic goes in a southerly direction along Whatley Road before joining the A361. Whatley Road was subject to a widening and improvement scheme as part of the Section 106 agreement related to planning permission 109122/002. The quarry is also served by a dedicated rail line which passes through a tunnel under Whatley Bottom which connects to the Reading and Taunton line north of Frome.
- 5.7.5 Under planning consent ref 109122/002 Condition 30 no more than 4 million tonnes can be transported from the quarry by road in any one calendar year. However, permission for working of the quarry is due to expire on 31st December 2030 due to Condition 3 attached to that planning consent. The proposed scheme would retain the same production rate and output at the quarry but seek to extend the time frame within which this work can be undertaken. The output transported by road under the proposed scheme would therefore accord with the extant permission. Existing access arrangements into and out of the site would also remain unchanged.
- 5.7.6 The continuation of HGV traffic currently generated by the site represents a 'worst-case' scenario to some extent. Hanson is separately pursuing a Review of Old Minerals Permission (ROMP) submission for Westdown Quarry (which will be subject to a separate EIA) which is located ~1.5km to the south. Westdown coming on stream would lead to a decrease in HGV traffic movements associated with Whatley Quarry with an associated proportionate number of new HGV movements from Westdown. The majority of material extracted from Whatley would be exported by rail. However, for the purposes of this Scoping Report it is assumed that existing traffic movements will continue with the proposed scheme

Predicted trends

- 5.7.7 In the absence of the proposed development, material from the quarry would continue to be transported via road and rail as permitted through the existing permission and in

¹⁴ Institute of Environmental Assessment (1993). Guidance Notes No. 1 - Guidelines for the Environmental Assessment of Road Traffic. Horncastle: F.W.Cupit.

accordance with the extant conditions. Should Westdown Quarry become operational (subject to the separate application) Whatley Quarry may have decreased HGV traffic and there may be changes in HGV patterns along Whatley Road although together the HGV transfer would not exceed 4 mt per annum.

Scope of the assessment

- 5.7.8 No increase in output from the site, and consequentially, the number of traffic movements is proposed. However, the proposed scheme seeks to enable the working of the quarry beyond 2030 to 2042. Therefore, the assessment solely relates to the continuance of effects against the anticipated baseline traffic levels for 12 years beyond the 2030 rather than to changes in output (and associated increases in HGV movements). The HGV movements would continue to remain within the limit for road traffic set by planning condition 30 of planning permission ref: 109122/002.
- 5.7.9 The scope of the assessment reflects that it is not an increase in traffic per se but the continuation of effect against the anticipated traffic baseline.

Assessment methodology

- 5.7.10 The Institute of Environmental Assessment (IEA)¹⁵ 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.
- 5.7.11 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.
- 5.7.12 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.
- 5.7.13 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 5.14** below summarises the significance criteria based on Rule One and Rule Two above.

¹⁵ Now the Institute of Environmental Management and Assessment (IEMA)

Table 5.14 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

- 5.7.14 The proposed scheme does not seek to increase output from the quarry and does not seek to increase the use of road traffic meaning that it will be within the 4 mt per annum for road transport in line with conditions of the extant planning permission. Therefore, GEART suggests that the proposed scheme would not trigger the need for detailed assessment. However, the assessment methodology will be tailored to consider the continuation of effects above the baseline beyond 2030 rather than assessing effects related to an increase in traffic.
- 5.7.15 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 as a result of the extension of permission to work reserves at Whatley and continuation of HGV flows beyond 2030.

5.8 Air quality (revised)

- 5.8.1 The May 2020 Scoping Report (Section 5.10) scoped out air quality from detailed assessment as follows:

"The proposed development would not include changes to the methods used to extract limestone and importantly, there would be no lateral extension of the quarry, which would bring sources of dust closer to sensitive receptors. Indeed, as extraction takes place deeper into the quarry void, dust generating activities within the quarry are less likely to have an adverse effect on nearby sensitive receptors. Furthermore, as it is not proposed to increase the annual output of the quarry, there are no anticipated increases in dust associated with the movement of material off-site via HGV. Indeed, the expectation is that a much greater proportion of material extracted from Whatley Quarry will be transported off-site via the existing rail facilities. As such, a reduction in road traffic associated with the quarry is expected.

It is therefore not considered that the proposed scheme would lead to changes in dust and particulate matter emissions for any sensitive receptors. The conditions attached to the extant permission (ref. 109122/002 conditions 20 and 21) to regulate dust and emissions would continue to remain in force and be employed at the quarry. The current Dust Mitigation Plan will be updated to capture the activities within the proposed scheme."

- 5.8.2 To reflect the change in planning approach, i.e., the submission of a full planning application, the EIA scope will now include a detailed air quality assessment.

Relevant policies and their implications for scoping

5.8.3 **Table 5.15** 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 5.15 Relevant policies and their implications – air quality

Policy Reference	Implications
National policy:	
National Planning Policy Framework (2021)	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

5.8.4 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

5.8.5 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 Whatley Quarry and the nearby Westdown Quarry will be summarised in the assessment.

Summary of baseline conditions

- 5.8.6 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 (AQMA) have been declared through the Mendip District Council area.
- 5.8.7 **Table 5.16** presents estimated background concentrations of NO2, PM10 and PM2.5 from 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 5.16 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

- 5.8.8 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.

Scope of the assessment

- 5.8.9 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.

- 5.8.10 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.
- 5.8.11 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.
- 5.8.12 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

- 5.8.13 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 PM₁₀ concentration (and dust deposition rates where available);
 - Description of the location of receptors and their relative sensitivities to PM₁₀ 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 PM₁₀ 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 PM₁₀ 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

- 5.8.14 It is assumed that traffic movements would remain at the levels currently approved within the planning permissions for Whatley Quarry (as detailed in the traffic and transport section of the Scoping Report (May 2020)). 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"*.
- 5.8.15 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.

5.9 Socio-economics (unchanged)

Relevant policies and their implications for scoping

5.9.1 **Table 5.17** 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 5.17 Relevant policies and their implications – socio-economics

Policy reference	Implications
National policy:	
National Planning Policy Framework, 2021 (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 2021 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

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

Baseline conditions

Data sources

5.9.3 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

- 5.9.4 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, currently directly supporting some 60 people, along with a range of support staff and contractors.

Predicted trends

- 5.9.5 Whilst there are not expected to be any 'external' changes which would affect the baseline conditions, in the absence of the proposed development, materials needed for key national and local infrastructure projects wouldn't be provided from Whatley and alternative supplies would need to be developed.

Scope of the assessment

- 5.9.6 Although it is not envisaged that the deepening of the Whatley Quarry would result in the creation of significant additional employment opportunities, it is recognised that the proposed development would ensure the long-term security of the site, enabling job retention, which could have an effect on employment and inward investment in the wider area.
- 5.9.7 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.
- 5.9.8 It is recognised that the deepening of the Quarry could have an effect on the local employment and inward investment. The socio-economic assessment 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.
- 5.9.9 The receptors to be assessed will include existing residents and local employers.

Assessment methodology

- 5.9.10 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).

5.10 Climate (revised)

5.10.1 The May 2020 Scoping Report (Section 5.10) scoped out climate from detailed assessment as follows:

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

5.10.2 In their Scoping Opinion (August 2020), SCC stated that a separate chapter on climate change should be included in the ES and that following the declaration of a climate emergency by the County Council and District Councils in Somerset, climate change should be addressed with the inclusion of a proportionate Climate Change Assessment.

5.10.3 In light of the above, the EIA scope will now include a separate chapter on climate change.

5.10.4 In accordance with Schedule 4, paragraph 5(f) of the EIA Regulations¹⁶, this chapter considers climate change in two ways:

- The Greenhouse Gas (GHG) assessment: The impact of the Project on the climate; and
- The Climate Change Resilience (CCR) assessment: The vulnerability of the Project to climate change.

5.10.5 This chapter should be read in conjunction with the description of the development provided in **Chapter 3 Description of Proposed Development**. The GHG assessment should be read in conjunction with relevant parts of **Chapter 5.7: Traffic and Transport**. The CCR assessment should be read in conjunction with relevant parts of other environmental topics where common receptors have been considered and where there is an overlap or relationship between the assessment of effects. The relevant chapters or documents are **Chapter 5.5: The Water Environment** and **Chapter 5.6: Biodiversity**.

Relevant policies and their implications for scoping

5.10.6 This section identifies the relevant legislation, national and local policy and guidance which has informed the scope of the assessment relevant to climate change.

5.10.7 A summary of the relevant policy and legislation related to the GHG assessment and the CCR assessment are given in **Table 5.18** and **Table 5.19** respectively.

Table 5.18 Relevant policies and their implications – GHG assessment

Policy reference	Implications
Legislation	
Climate Change Act 2008¹⁷ (including The Climate Change Act 2008	This Act, as amended in 2019, commits the UK to reduce its net GHG emissions by at least 100% below 1990 levels by 2050 (the 'UK carbon target', often referred to as 'net zero') and requires the Government to establish 5-year carbon budgets. The Act also

¹⁶ The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 Schedule 4 (Online). Accessed from: <https://www.legislation.gov.uk/ukxi/2017/571/schedule/4/made>

¹⁷ Climate Change Act 2008 [online]. Available at: <https://www.legislation.gov.uk/ukpga/2008/27/contents>

Policy reference	Implications
(2050 Target Amendment) Order 2019¹⁸	established an independent expert body, the Committee on Climate Change, to advise the Government on the level of those emissions targets and report on progress made to reduce emissions.
The Carbon Budgets Order 2009¹⁹	This legislation implements the carbon budgets set out in the Climate Change Act 2008. The budgets require the UK to continually reduce emissions in line with the carbon reduction commitments established under that Act.
Energy Act 2016	The Energy Act 2016 is a UK Act of Parliament relating to UK enterprise law and energy in the UK. It covers three main areas, establishes the new Oil and Gas Authority, sets out the formal powers of the OGA and sets out the closure of Renewables Obligation for onshore wind in England, Wales and Scotland.
Environment Act 2021	The Environment Act received Royal Assent in 2021. This Act replaces EU environmental frameworks and has been produced as a result of the UK leaving the EU. The Environment Act 2021 makes provisions about targets, plans and policies for improving the natural environment.
International policy	
The United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement	The UNFCCC is the major international body responsible for managing climate change and carbon emissions. In 2015, it adopted the Paris Agreement, the aims of which are stated as: <i>"This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by: (a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change"</i> . The agreement sets targets for countries' GHG emissions, but these are not legally binding or enforceable. In December 2020, the UK submitted its first Nationally Determined Contribution (NDC) to the UNFCCC, committing to <i>"at least a 68%"</i> reduction in GHG emissions below 1990 levels (1995 levels for F-gases) by 2030, aligned with the UK's 2050 net-zero GHG emissions target.
UNFCCC Kyoto Protocol (UNFCCC, 1997)	The Kyoto Protocol was adopted in December 1997 and there are currently 192 Parties to the Kyoto Protocol. It commits industrialised countries and economies to transition to limit and reduce GHG emissions in accordance with agreed individual targets. These have been strengthened in more recent international agreements culminating in the Paris Agreement (UNFCCC, 2015), as described above.
Glasgow Climate Pact, 2021	The Glasgow Climate Pact recognises that keeping with the Paris Agreement and recognises that this requires <i>"accelerated action in this critical decade"</i> . Limiting global warming to 1.5°C is noted as requiring <i>"rapid, deep and sustained reductions in greenhouse gas emissions"</i> to achieve a 45% reduction by 2030 globally relative to 2010 levels and to be net zero around mid-century.
National policy	
Clean Growth Strategy (BEIS)	This report, prepared by BEIS, provides the strategy for the UK's future clean growth to allow carbon budgets to be met and support economic growth. It sets out policies and

¹⁸ The Climate Change Act 2008 (2050 Target Amendment) Order 2019 [online]. Available at: <https://www.legislation.gov.uk/ukxi/2019/1056/contents/made>

¹⁹ The Carbon Budgets Order 2009 [online]. Available at: <https://www.legislation.gov.uk/ukxi/2009/1259/contents/made>

Policy reference	Implications
	targets out to 2050 for reducing GHG emissions across a number of sectors. Whilst not in itself planning policy it is a material consideration.
Net Zero Strategy: Build Back Greener, October 2021	The Strategy for Net Zero sets out the Government's plan to become net zero carbon by 2050 and to meet the Nationally Determined Contribution (NDC). This includes achieving a fully decarbonised power system by 2035 and delivering 5 GW of hydrogen production capacity by 2030.
The UK's Nationally Determined Contribution under the Paris Agreement	In December 2020, the UK submitted its first NDC under the Paris Agreement to the UNFCCC, committing to "at least a 68%" reduction in economy-wide GHG emissions below 1990 levels (1995 levels for F-gases) by 2030, aligned with the UK's 2050 net-zero GHG emissions target.
National Planning Policy Framework (NPPF)	The 2021 revision of the NPPF, paragraph 148 states: <i>"The planning system should support the transition to a low carbon future in a changing climate... shape places in ways that contribute to radical reductions in greenhouse gas emissions... and support renewable and low carbon energy and associated infrastructure"</i>. It also requires in paragraph 154 that new development should be planned for in ways that "can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards". Furthermore, it is stated in paragraph 155, that local planning authorities should expect new development to: a) <i>"comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption."</i>
Local planning policy	
Mendip Local Plan Part 1: Strategy and Policies 2006 – 2029 (Adopted 2014)²⁰	Strategic objectives of the Mendip Local Plan include to deliver <i>"development that makes efficient use of land, using sustainable methods of construction and utilising technologies that minimises their environmental running costs"</i> and to <i>"recognise and management development in light of emerging climate change impacts"</i> .

Table 5.19 Relevant policies and their implications – CCR assessment

Policy reference	Implications
Legislation	
UK Climate Change Act 2008 (as amended)	The Climate Change Act 2008 requires the Government to lay before Parliament five-yearly climate change risk assessments (CCRA) detailing current and predicted impacts of climate change in the UK. The Third Climate Change Risk Assessment (CCRA) is due

²⁰ Mendip District Local Plan 2006 – 2029. Part I: Strategy and Policies (Online). Available from: https://www.mendip.gov.uk/media/9073/Adopted-Local-Plan-2014/pdf/Adopted_Local_Plan_2014.pdf?m=637613543869330000 (Accessed 03 February 2022).

Policy reference	Implications
	to be published in 2022 and will draw from evidence prepared by the Adaptation Committee presented in the Independent Assessment of UK Climate Risk 2021²¹. The Act contains the Adaptation Reporting Power, which allows Government to ask certain organisations to produce reports on their climate change risks and their adaptation plans.
International policy	
The United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement	The UNFCCC is the major international body responsible for managing climate change and carbon emissions. In 2015, it adopted the Paris Agreement, the aims of which are stated as: <i>"This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:</i> <i>...(b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production."</i>
The United Nations Framework Convention on Climate Change (UNFCCC) Glasgow Climate Pact	The Glasgow Pact emphasised the urgency of the scaling up of action and support to "enhance adaptive capacity, strengthen resilience and reduce the vulnerability to climate change".
National policy	
National Planning Policy Framework (NPPF) 2021	The NPPF sets out the Government's planning policies for England. The planning process aims to achieve sustainable development following three overarching objectives: economic, social and environmental including adapting to climate change. Within the framework it is recognised that plans should take a proactive approach to adapting to climate change. <i>"New Development should be planned for in ways that: avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure."</i>
National Adaptation Programme (NAP)	The NAP sets out the actions that government and others will take to adapt to climate change in England over a five-year period. The second NAP runs from 2018 to 2023.
25 Year Environment Plan	This plan sets out how government action will help the natural world and how we will tackle the effects of climate change.
Local planning policy	
Mendip Local Plan Part 1: Strategy and Policies 2006 – 2029 (Adopted 2014). ²⁰	One of the key local issues highlighted in the Local Plan is that significant parts of the District are at a high risk of flooding which could worsen due to climate change. This is reflected within Development Policy 23: Managing Flood Risk which ensures that development remains safe from flooding over its lifetime, taking into account climate change.

²¹ Betts, R.A. and Brown, K, (2021). Introduction. In: *The Third UK Climate Change Risk Assessment Technical Report* [Betts, R.A., Haward, A.B. and Pearson, K.V.(eds.)]. Prepared for the Climate Change Committee, London [online]. Available at: <https://www.ukclimaterisk.org/wp-content/uploads/2021/06/Technical-Report-The-Third-Climate-Change-Risk-Assessment.pdf> [Accessed 31 January 2022]

- 5.10.8 All carbon budgets that have been legislated will be considered in the GHG assessment. The timescale of these budgets covers the construction period and the operational period of The Project. The total UK budgets, expressed in the form of million tonnes of carbon dioxide (CO₂) equivalent (million tCO₂e), are detailed in **Table 5.20**.

Table 5.20 UK Carbon Budget

Budget	Carbon budget level (million tCO ₂ e)	Reduction below 1990 levels	Legal status
3 rd Carbon Budget (2018 – 2022)	2,544	37% by 2020	Statute
4 th Carbon Budget (2023 to 2027)	1,950	51% by 2025	Statute
5 th Carbon Budget (2028 to 2032)	1,725	57% by 2030	Statute
6 th Carbon Budget (2033 -2037)	965	78% by 2035	Statute
Net Zero Target	0	100% by 2050	Statute

Technical guidance

- 5.10.9 A summary of the relevant technical guidance is given in **Table 5.21** and **Table 5.22** for the GHG assessment and CCR assessment respectively.

Table 5.21 Technical guidance relevant to the GHG assessment

Technical guidance document	Implications
Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance ²²	Provides guidance on assessment and mitigation of GHG emissions within an EIA context and is the primary source of guidance for assessing GHG emissions. It includes a focus on proportionate and robust assessment. The Institute of Environmental Management and Assessment (IEMA) guidance is based on the five IEMA Principles on Climate Change Mitigation and EIA: 1. <i>"The GHG emissions from all projects will contribute to climate change; the largest inter-related cumulative environmental effect.</i> 2. <i>The consequences of a changing climate have the potential to lead to significant environmental effects on all topics in the EIA Directive – e.g., population, fauna, soil etc.</i> 3. <i>The UK has legally binding GHG reduction targets – EIA must therefore give due consideration to how a project will contribute to the achievement of these targets.</i> 4. <i>GHG emissions have a combined environmental effect that is approaching a scientifically defined environmental limit, as such any GHG emissions or reductions from a project might be considered to be significant.</i>

²² IEMA (2017). Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance [online]. Available at: https://www.iaia.org/pdf/wab/EIA%20Guide_GHG%20Assessment%20and%20Significance_IEMA_16May17.pdf

Technical guidance document	Implications
	5. <i>The EIA process should, at an early stage, influence the location and design of projects to optimise GHG performance and limit likely contribution to GHG emissions."</i> The GHG assessment will assess the impact of the Proposed Development by contextualising against local and national carbon targets.
Publicly Available Standard (PAS) 2080: 2016 – Carbon management in infrastructure ²³	PAS 2080:2016 provides an approach to reducing GHG emissions from infrastructure projects including working with stakeholders throughout the project lifecycle.
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (GHG Protocol) ²⁴	GHG Protocol provides standards and guidance for preparing a GHG emissions inventory.

Table 5.22 Technical guidance relevant to the CCR assessment

Technical guidance document	Implications
UK Climate Projections 2018 (UKCP18) ²⁵	UKCP18 has been produced by the Met Office and provides the latest set of climate change projections for the UK. It includes projections of how key climate parameters could change in the coming decades, through absolute values or anomalies from the baseline. UKCP18 projections will be used in the CCR assessment. Should a new version of UK Climate Projections be produced during the assessment period, they would be used instead of UKCP18.
UKCP18 technical notes including25: Science Overview Report UKCP18 Land projections: Science Report UKCP18 Factsheets	The UKCP18 technical notes provide qualitative information on projections for future time periods. These technical notes will be used in the CCR assessment when relevant quantitative projections are not available.
ISO14091:2021 Adaptation to climate change – Guidelines on	This international standard provides guidelines on approaches to assessing climate change-related risks. It states that "risk assessments improve planning of adaptation to climate change and inform the implementation and monitoring of climate change adaptation activities".

²³ The Green Construction Board, Construction Leadership Council (2016). PAS 2080:2016 Carbon Management in Infrastructure [online]. Available at:

https://shop.bsigroup.com/ProductDetail?pid=000000000030323493&creative=443668107352&keyword=&matchtype=b&network=g&device=c&gclid=EAlaIqObChMI1pLT1OCG7QIVB813Ch3RrwQUEAAYAIAAEgJXGfD_BwE

²⁴ World Resources Institute and World Business Council for Sustainable Development (2004). The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard [online]. Available at:

<https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>

²⁵ UKCP18 UK Climate Projections Data (Online). Accessed from:

<https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/download-data>

Technical guidance document	Implications
vulnerability, impacts and risk assessment²⁶	
Commission Notice – Technical guidance on the climate proofing of infrastructure in the period 2021 - 2027²⁷	This note gives technical guidance on the climate proofing of infrastructure, which includes the adaptation to climate change (climate resilience). The note contains guidance on the methodology of assessments, include the role within EIAs.
Institute of Environmental Assessment and Management (IEMA) EIA Guide to: Climate Change Resilience and Adaptation (2020).²⁸	This IEMA guidance provides a framework for the effective consideration of climate change resilience and adaptation in the EIA process, including a robust methodology.
UK Climate Change Risk Assessment 2017²⁹	The Climate Change Risk Assessment (CCRA) fulfils the requirement under the Climate Change Act 2008 for the Government to produce a five-yearly assessment of the risks for the UK of the current and predicted impacts of climate change. It reports the key areas and urgency of climate risk.
Climate Change Adaptation Manual (NE751)³⁰	The Climate Change Adaptation Manual (NE751) has been updated in 2020. It is designed to support practical and pragmatic decision-making on considering climate change adaptation for impacts on habitats, green infrastructure, geology and geomorphology, and access and recreation.

Baseline conditions

GHG assessment

Data Sources

5.10.10 No data sources which have been gathered to inform the baseline for the GHG assessment scoping material includes data relating to the UK carbon budgets, as reported in **Table 5.20**. Data sources that will be used for the GHG assessment at ES stage are

²⁶ ISO14091:2021 Adaptation to climate change — Guidelines on vulnerability, impacts and risk assessment (Online) Accessed from: <https://www.iso.org/standard/68508.html>

²⁷ Commission Notice – Technical guidance on the climate proofing of infrastructure in the period 2021 – 2017. 2021 (Online). Official Journal of the European Union 2021/C 373/01 pp. 1 – 92. Accessed from: <https://op.europa.eu/en/publication-detail/-/publication/23a24b21-16d0-11ec-b4fe-01aa75ed71a1/language-en>.

²⁸ IEMA EIA Guide to: Climate Change Resilience and Adaptation (Online). Accessed from: <https://www.iema.net/resources/reading-room/2020/06/26/iema-eia-guide-to-climate-change-resilience-and-adaptation-2020>

²⁹ ASC (2016) UK Climate Change Risk Assessment 2017 Synthesis Report: priorities for the next five years. Adaptation Sub-Committee of the Committee on Climate Change, London (online). Accessed from: <https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Synthesis-Report-Committee-on-Climate-Change.pdf>

³⁰ Natural England and RSPB, 2019. Climate Change Adaptation Manual - Evidence to support nature conservation in a changing climate, 2nd Edition. Natural England, York, UK (Online). Accessed from: <http://publications.naturalengland.org.uk/publication/5679197848862720>

discussed within the GHG assessment section of the Assessment Methodology for this section of the revised Scoping Report.

Summary of baseline conditions

- 5.10.11 The 3rd carbon budget reported in **Table 5.20** can be considered as the current baseline for the GHG assessment.
- 5.10.12 As indicated by the carbon budgets in **Table 5.20**, GHG emissions are expected and required to reduce in the future. By 2025, GHG emissions are required to reduce by 51%, and the government has set a net zero target which requires the UK to reduce GHG emissions by 100% by 2050. The future baseline considers a number of the carbon budgets in **Table 5.20** as future Project activities coincide with a number of carbon budgets.

CCR assessment

Data sources

- 5.10.13 A review of published current and historical regional weather data in the location of the Proposed Development was completed to establish the baseline for the CCR and adaptation assessment. The following desk-based sources were utilised:
- Met Office Southwest England: Climate³¹. This document describes the main features of the climate over a 30-year average period of 1981 – 2010 which has been used to inform the current baseline;
 - UKCP18 probabilistic climate change regional projections Key results³²;
 - UK Climate Change Risk Assessment 2017 Evidence Report Chapter 4 Infrastructure³³; and
 - Evidence for the third UK Climate Change Risk Assessment (CCRA3) Summary for England³⁴.

Summary of baseline conditions

- 5.10.14 The baseline for the climate change resilience assessment is the current climatic conditions at the site. They are used to provide context of the climate change impacts throughout the operation and decommissioning/restoration of the Project.

³¹ Met Office South West England: Climate (online). Available from:

<https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/regional-climates/south-west-england-climate---met-office.pdf> (Accessed 03 February 2022).

³² Met Office. UKCP18 Key Results: Probabilistic and sea level projections (online). Available from:

<https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/UKCP18-Key-results.xlsx> (Accessed: 31 January 2022)

³³ Dawson et al. 2017. UK Climate Change Risk Assessment Evidence Report Chapter 4, infrastructure. (online) Available from: <https://www.theccc.org.uk/uk-climate-change-risk-assessment-2017/> (Accessed: 31 January 2022)

³⁴ UK Climate Risk. Evidence for the third UK Climate Change Risk Assessment (CCRA3) Summary for England (online).

Available from: <https://www.ukclimaterisk.org/wp-content/uploads/2021/06/CCRA-Evidence-Report-England-Summary-Final.pdf> (Accessed: 31 January 2022)

5.10.15 The Project is within the County of Somerset in Southwest England. The Met Office utilise 30-year climate periods and have produced regional climate summaries for the latest observable period 1981-2010³¹. The summary of the baseline climate for this region include:

- Somerset is situated within the south-west peninsula which is subject to the action of winds blowing warm temperatures from the sea, causing mean annual temperatures to be around 11 to 12°C, falling slightly towards Bristol experiencing around 10.5°C;
- However, the action of the maritime winds also means a large range of temperatures can be experienced between the summer and winter months. The temperatures in Somerset in January, the coldest month, report a mean minimum temperature between 1 and 2°C and by the warmest months of July and August, the mean daily maxima can be around 21.5°C;
- Heatwaves and extreme high temperatures have been rare in this period, a record of 34.5°C was reported in Yeovilton in Somerset in August 1990, 30km from the site;
- Frost frequencies exceed 50 days per year in inland low-lying areas of Somerset, but the continuing warmth of the sea usually prevents coastal autumn frosts;
- Rainfall trends are dictated by Atlantic depressions or convection. Most of the annual rain falls within autumn and winter due to Atlantic depressions, however convection in the summer causes large amounts of rain to fall in showers and thunderstorms;
- In Somerset, the number of days with rainfall above 1mm is around 7 to 9 days in summer and 12 to 13 days in winter;
- The peninsula has experienced very heavy rainfall events, but these are considered rare. Furthermore, despite its generally mild weather, the peninsula has experienced some severe blizzards, due to the nuances of the interaction between the weather of Europe and the Atlantic; and
- The region is considered exposed, coupled with the frequency and strength of depressions in winter, mean wind speeds and gusts are strongest in winter. Due to its location more inland within the region, Somerset experiences less days of gale force winds.

5.10.16 The nearest weather station to the site is Dunkeswell Aerodrome in Devon. The local baseline climate data reflects the regional variables described above and is summarised within **Table 5.23**. Although data from the climate period 1991 – 2020 is now available, the baseline draws from 1981 – 2010 as more representative of current operations and aligns more closely to the baseline used in the UKCP18 future climate data.

Table 5.23 Baseline climate data 1981 - 2010³⁵

1981 - 2010	Nearest weather station – Durham	Regional: South West England and South Wales	England
Mean monthly rainfall (mm)	88.75	104.6	70.82
Days of rainfall > 1mm (days per year)	147.36	156.46	133.01
Minimum Annual Temperature (°C)	6.14	6.24	5.85
Maximum Annual Temperature (°C)	12.56	13.37	13.46
Mean wind speed at 10m (knots)	8.06	9.37	8.44
Air frost (days per year)	39.13	41.07	49.7

Predicted trends

- 5.10.17 The UK Climate Projections 2018 (UKCP18) provide probabilistic data on projected climate variables for the UK. The data provides projections until the end of the 21st century for different emissions scenarios, known as representative concentration pathways (RCP).
- 5.10.18 RCP8.5 is considered a high emissions pathway and represents a potential future which is slow to transfer to low-carbon energy provision. With progress toward achieving National Determined Contributions, RCP8.5 is considered a possible, but conservative, emission scenario suitable for evaluating the climate resilience of long-lifetime projects.
- 5.10.19 The future baseline is used to set out general climatic conditions that would be experienced over the project lifetime based on the following:
- The anticipated operational activity will continue within the quarry up until 2042 which will be considered up to and including the 2050s climate period (2040 – 2059); and
 - Restoration of the quarry including the maintenance period which will be considered up to the 2070s climate period (2060 – 2079).
- 5.10.20 As a result, the climate periods will consider the 2030s (2020 – 2039), 2050s (2040 – 2059), and the 2070s (2060 – 2079).
- 5.10.21 The UKCP18 key results for the region (South West England)³⁶ have been used to inform the future baseline and is contained within **Table 5.24**. These results are for climate variables temperatures and precipitation across the whole region. During the ES, this data

³⁵ Met Office UK Climate averages (online). Available from: <https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages/gcj9q6c2v>. (Accessed 03 February 2022).

³⁶ Met Office. UKCP18 Key Results: Probabilistic and sea level projections (online). Available from: <https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/UKCP18-Key-results.xlsx> (Accessed: 31 January 2022)

would be refined to be more accurate to the location of the Project and would include other climate variables such as extreme weather events

Table 5.24 Key results for climate variables in South West England across the climate periods

Climate variable		Time period and projected change ³⁷		
		2030s	2050s	2070s
		(2020 – 2039)	(2040 – 2059)	(2060 – 2079)
Mean temperature change (Summer) (°C)	10%	0.2	0.8	1.4
	50%	1.2	2.2	3.6
	90%	2.2	3.8	6
Mean temperature change (Winter) (°C)	10%	0.1	0.5	0.8
	50%	0.9	1.6	2.4
	90%	1.7	2.8	4.1
Mean precipitation change (Summer) (%)	10%	-33	-45	-65
	50%	-14	-23	-35
	90%	6	-1	-5
Mean precipitation change (Winter) (%)	10%	-5	-3	-3
	50%	7	12	19
	90%	20	30	44

Scope of the assessment

GHG assessment

Study area

Spatial scope

10.1.1 The spatial scope of the GHG assessment will be informed by the spatial extent of the mineral extraction activities of the Project. This will therefore equate to the planning application boundary as shown in **Figure 2.2**.

5.10.22 The overall scope of the GHG assessment is considered to include:

³⁷ UKCP18 science reports, key messages, maps and graphs uses a 20-year baseline period of 1981 – 2000 to present the projected change in climate variables associated with climate change.

- The GHG emissions associated with the operational vehicles, machinery and equipment used for all mining activities. On-site vehicles, machinery and equipment will have associated exhaust GHG emissions which will be calculated as part of the GHG assessment;
- The GHG emissions associated with the mineral extraction activities. An embodied carbon amount will be associated with the materials extracted, and the associated GHG emissions will be calculated as part of the GHG assessment; and
- The GHG emissions associated with the despatching of material via road and rail.

Temporal scope

5.10.23 The temporal scope of the GHG assessment will be consistent with the period over which the Project would be in operation, which is anticipated to be 20 years (i.e., up to 2042). This is based upon a start date for the GHG assessment of 2022, since the Project seeks to allow for a change to currently approved working methods within Whatley Quarry (it is therefore assumed that if granted, activities will commence immediately).

Potential receptors

5.10.24 GHG emissions have a global effect rather than directly affecting any specific local receptor to which a level of sensitivity can be assigned. The global climate is therefore the only receptor for the GHG assessment.

CCR assessment

Study area

Spatial scope

5.10.25 The spatial scope of the CCR assessment is reflected within the spatial extent of the Project when considering the receptors. The interdependencies of the climate change resilience of supporting infrastructure external to the spatial scope of the Project will also be considered.

Temporal scope

5.10.26 The temporal scope of the CCR assessment will inform the analysis of the climate variables of the future climate. The anticipated end of operation is anticipated to be in 2042, with decommissioning and restoration works following this. The restoration habitat planting would be managed by a management plan following the restoration. Therefore, the temporal scope is reflected in the climate periods analysed: the 2030s (2020 – 2039), the 2050s (2040 – 2059) and the 2070s (2060 – 2079).

Potential receptors

5.10.27 Receptors for consideration within the CCR assessment can be grouped into the following:

- Building and infrastructure receptors i.e., the Project assets, both temporary and permanent, throughout the lifecycle of the Project;
- Human health receptors i.e., operational staff; and
- Environmental receptors i.e., habitats and species associated with any landscaping and biodiversity planting.

5.10.28 The Project description contained within **Chapter 2** has identified the following receptors to be considered within the CCR assessment, as shown in **Table 5.25**.

Table 5.25 List of receptors considered within the CCR assessment

Receptor group	Receptor	Project stages considered
Building and infrastructure	Plant and machinery	Operation
	Quarry operations and inputs	Operation
	Quarry products – limestone, asphalt and concrete production	Operation
	Transport links, including road access and two access/egress points, and the dedicated rail infrastructure	Operation
Human Health	Site operatives	Operation
Environmental	Waterbodies including groundwater	Operation
	Water mitigation ponds	Operation
	Restoration and habitat creation	Decommissioning and reinstatement

Assessment methodology

GHG assessment

- 5.10.29 Consideration of a 'With Development' and 'Without Development' case ensures that the methodology is in line with the IEMA guidance 2017³⁸. The 'With Development' case will consider the current consented mining operations plus the proposed mining operations. The 'Without Development' case will only consider the current consented mining operations.
- 5.10.30 The approach to the GHG assessment is to quantify and contextualise the GHG emissions of a Project. As discussed in Scope of the Assessment, the GHG assessment of the Project will consider the GHG emissions associated with the operational vehicles, machinery and

³⁸ IEMA. (2017). Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance. [online]. Available at: [EIA Guide GHG Assessment and Significance IEMA 16May17.pdf \(iaia.org\)](#)

equipment, the embodied carbon of the raw materials mined, and the dispatching movements.

Quantification of GHG emissions

- 5.10.31 The approach to quantifying the GHG emissions associated with the Project will consider the whole infrastructure life cycle of the Project. The infrastructure life cycle phases as described within the PAS 2080: Carbon Management in Infrastructure **Error! Bookmark not defined.** will be used. These phases will allow for the identification of the GHG emission sources associated with the Project. This methodology is in line with the IEMA guidance **Error! Bookmark not defined.**,³⁹.
- 5.10.32 GHG emissions associated with the Project emission sources will be calculated by gathering associated activity data and combining this data with associated emission factors.
- 5.10.33 For transport GHG emissions, emission factors will be gathered from the BEIS greenhouse gas reporting: conversion factors 2020⁴⁰. For transport emissions arising from mobile vehicles, activity data will consist of average distances travelled and fuel usages.
- 5.10.34 For GHG emissions associated with the mined materials, embodied carbon figures reported by the Inventory of Carbon & Energy database⁴¹ will be used. These will be combined with extraction amounts of the materials.

Contextualisation of GHG emissions

- 5.10.35 The GHG emissions impact assessment considers the significance of the Project's contribution to UK GHG emissions and the Government's ability to achieve its carbon reduction targets to meet the relevant carbon budgets set by the Climate Change Act 2008 (as amended). The total UK budgets, expressed in the form of million tonnes of carbon dioxide equivalent (million tCO₂e), are detailed in **Error! Reference source not found.**
- 5.10.36 The GHG emissions quantified for the GHG assessment will be reported in the form of tCO₂e, which will allow the emissions of the seven key GHGs from the Kyoto Protocol Reference Manual to be accounted for: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃).
- 5.10.37 The contribution of the Project's GHG emissions to the UK GHG emissions and therefore to the total UK carbon budgets will be calculated. In order to contextualize, the significance of these contributions will be determined.

³⁹ IEMA (2010). Climate Change Mitigation & EIA [online]. Available at: <https://www.iema.net/document-download/33006>

⁴⁰ Department for Business, Energy & Industrial Strategy, 2020. Greenhouse gas reporting: conversion factors 2020. [Online]. Available from: <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020>

⁴¹ Circular Ecology. The Inventory of Carbon and Energy (ICE) database. [Online]. Available from: [Embodied Carbon Footprint Database - Circular Ecology](#)

Determination of significance

5.10.38 The current IEMA principles and guidance⁴² state that due to the combined environmental effect that GHG emissions have, any GHG emissions (either positive or negative) from a project might be considered to be significant. Therefore, the assessment methodology will aim to determine the relative scale of the impact of the Project on global climate change by considering the sensitivity (or value) of the receptor, its impacts and the magnitude of that impact on relevant UK carbon budgets and targets at a national and local level.

Sensitivity

5.10.39 The only receptor for the climate assessment is the global climate and this receptor is considered highly sensitive.

Magnitude

5.10.40 The magnitude of the GHG impacts arising from the Project will be evaluated based on the following statements:

- Net increase in GHG emissions associated with the Project represents an adverse effect;
- Net reduction in GHG emissions associated with the Project represents a beneficial effect; and
- The significance of the effect is dependent on the extent to which the increase/decrease in GHG emissions materially affects the ability of the UK Government to achieve its UK carbon budgets.

5.10.41 The magnitude of the GHG emissions calculated will be determined once the GHG emissions are contextualised against the UK's carbon budgets. This is described further in **Table 5.20**. Any impact which is concluded to have either a low or high impact will be considered significant. This methodology follows current IEMA guidance^{42,43} where it is understood any net GHG emissions (either positive or negative) from a Project might be considered to be significant.

Table 5.26 Significance criteria

Significance	Significance criteria
High (adverse)	Net increases in GHG emissions associated with the Project are considered to materially affect the ability of the UK Government to meet its carbon budgets/targets. Net increases in GHG emissions which are calculated to contribute a major amount to the UK Carbon budgets will be considered as high in magnitude.

⁴² IEMA (2010). Climate Change Mitigation & EIA [online]. Available at: <https://www.iema.net/document-download/33006>
⁴³ Department for Business, Energy & Industrial Strategy, 2020. Greenhouse gas reporting: conversion factors 2020. [Online]. Available from: <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020>

Significance	Significance criteria
Low (adverse)	Net increases in GHG emissions associated with the Project are considered to not materially affect the ability of the UK Government to meet its carbon budgets/targets. Net increases in GHG emissions which are calculated to contribute only a minor amount to the UK Carbon budgets will be considered as low in magnitude.
Negligible	Overall, GHG emissions associated with the Project are zero, and thus there is no implication for carbon budgets/targets.
Low (beneficial)	Net decreases in GHG emissions associated with the Project are considered to not materially affect the ability of the UK Government to meet its carbon budgets/targets. Net decreases in GHG emissions which are calculated to contribute only a minor amount to remaining within the UK Carbon budgets will be considered as low in magnitude.
High (beneficial)	Net decreases in GHG emissions associated with the Project are considered to materially affect the ability of the UK Government to meet its carbon budgets/targets. Net decreases in GHG emissions which are calculated to contribute a major amount to remaining within the UK Carbon budgets will be considered as high in magnitude.

CCR assessment

- 5.10.42 The methodology of the Climate Change Resilience assessment is set out below. The CCR assessment consists of a risk assessment which will consider the impact of the climate change trend on the receptor by assessing the likelihood and magnitude of the impact. This presents an overall risk score and significance.
- 5.10.43 Climate change can have in-combination effects with other environmental effects, where climate change could exacerbate or ameliorate potential effects, or affect the efficacy of the proposed environmental mitigation in the future. This will be addressed in the cumulative effects chapter and within the chapters and documents listed in **Chapter 6**. Climate change resilience also has interdependent impacts on other infrastructure.
- 5.10.44 The CCR assessment will be undertaken by climate change topic specialists in collaboration with relevant design teams (e.g., flood risk engineers, ecologists).

Compile inventory of assets and receptors

- 5.10.45 As discussed in paragraphs 5.10.27 and 5.10.28, the potential receptors under consideration for the CCR assessment includes temporary and permanent assets associated with the spatial scope of the Project, human health receptors, and the natural environment. These are tabulated into **Table 5.25**.

Climate change trends

- 5.10.46 Based on the information contained in paragraphs 5.10.14 to 5.10.16, the future baseline will be analysed to provide an understanding of the climate hazards that have the potential to affect the Project. The climate variables would be assessed for the following future periods: the '2030s' (2020 – 2039), the '2050s' (2040 – 2059) and the '2070s' (2060 – 2079). The 20-year climate periods allow for the effects of climate variability on annual to decadal time scales to be accounted for.

- 5.10.47 In accordance with EN-1, the 10%, 50% and 90% probability levels will be considered in the CCR assessment as a minimum. The RCP8.5 (high) will be used due to some safety critical elements of the Project.
- 5.10.48 As a minimum, the following climate variable would be assessed, identified as those that are most likely to influence the Project:
- Increase in mean summer temperatures;
 - Increase in mean winter temperatures;
 - Increased frequency and intensity of hot spells;
 - Decreased frequency of cold weather events (e.g., snow and ice);
 - Decrease in mean summer rainfall;
 - Increase in mean winter rainfall;
 - Increased frequency of heavy rainfall events across all seasons; and
 - Increased frequency and intensity of storm events.

Climate change impacts

- 5.10.49 The climate variables considered as part of the future baseline has been analysed and the potential climate impact on the receptors is tabulated within **Table 5.27**. This will be developed and refined during the ES during CCR workshops and is not considered a definite or exhaustive list at this scoping stage.

Table 5.27 Potential climate change impacts on the receptors as a result of the climate change trend

Climate change trend	Potential impact on the receptors	Phase considered
Increase in mean temperatures and increased frequency and intensity of heatwaves and extreme temperatures, especially in summer	Pressure on cooling systems required for quarry operation	Operation
	Sunstroke and heat exhaustion amongst operational personnel	Operation
	Increased rate of degradation of access roads surface material restricting access and egress from the site	Operation
	Heat and expansion impacts on rail infrastructure, such as track buckling	Operation
	Interdependencies of third-party assets such as disruption to electricity supply	Operation
	Failure of biodiversity restoration and planting	Decommissioning and restoration

Climate change trend	Potential impact on the receptors	Phase considered
Decrease in mean winter precipitation	Reduced replenishment of groundwater levels during closure and restoration of the quarry, affecting levels and flow and the on-site restoration pond	Decommissioning and restoration
Increase in mean temperatures and decrease in mean summer rainfall leading to drought conditions	Lower water tables reducing water available for abstraction for quarry operations	Operation
	Increased dust generation causing health impacts amongst operation personnel	Operation
	Landscape and biodiversity planting could fail resulting in increased management and associated environmental costs e.g., water use.	Decommissioning and restoration
Changes in soil moisture content resulting in ground subsidence or shrink swell processes resulting from changes in temperature and rainfall	Instability of ground and earthworks through reduction in soil strength and ground movement	Operation, Decommissioning and restoration
Increase in mean temperatures leading to changes in vegetation, including the spread of invasive species and disease	Impacts to the growth and success of landscape and biodiversity planting	Decommissioning and restoration
Increase in mean winter rainfall, heavy rainfall events and sea level rise leading to an increase in the frequency and severity of flood events (from all sources)	Flooding of quarry disrupting product generation due to exceeding the capacity of any surface water drainage	Operation
	Flooding of access roads restricting vehicular access and disrupting quarry operations	Operation
	Flooding of plant and equipment resulting in damage or failure	Operation
	Flooding and surface water run off leading to environmental damage, for example leaching of contaminants from the quarry	Operation
	Increased dewatering requirements to maintain safe and dry working conditions in the quarry	Operation
	Increased run off and restriction of recharge following restoration, affecting groundwater levels in the quarry and restoration ponds	Decommissioning and restoration
	Interdependencies of third-party assets such as disruption to electricity supply	Operation

Climate change trend	Potential impact on the receptors	Phase considered
Storm events leading to driving rain, wind, and excessive precipitation.	Damage to above ground equipment	Operation
	Interdependencies of third-party assets such as disruption to electricity supply	Operation

Risk assessment

5.10.50 The CCR assessment consists of a risk assessment which will consider the impact of the climate change trend on the receptor by assessing the likelihood and magnitude of the impact. This presents an overall risk score and will be assigned a significance.

Likelihood of impact

5.10.51 The likelihood of the climate impact occurring needs to be considered within a given timescale (e.g., at each phase of the Project). The likelihood analysis can be qualitative and forms an indicative scale of likelihood in **Table 5.28**. There can be considerable uncertainty about the likelihood of occurrence, and this will require expert judgement based on best available information.

Table 5.28 Indicative scale for assessing the likelihood of a climate impact occurring

Likelihood category	Description (probability and frequency of occurrence)
Very likely	The impact is almost certain to occur during the phase of the project considered
Likely	The impact is considered likely to occur during the phase of the project considered
Possible	The impact is as likely as not to occur during the phase of the project considered
Unlikely	The impact is unlikely to occur during the phase of the project considered, but still could occur at least once.
Very unlikely	The impact is high unlikely to occur during this phase of the project considered and is considered rare.

Magnitude of impact

5.10.52 The magnitude of change experienced by the receptor is the consequence resulting from the impact across a number of risk areas such as technical, environmental, social, financial, reputational. Likewise with likelihood, the magnitude of consequence may increase over time. A full breakdown of the consequence criteria considered in the assessment can be

found within the Commission Guidance Note⁴⁴. The indicative scale of magnitude used in this assessment is within **Table 5.29**.

Table 5.29 Indicative scale of magnitude of consequences of the climate change impact

Consequence category	Consequence criteria
Catastrophic	The impact could lead to complete shutdown of operations, loss of the asset, or collapse. There could be single or multiple fatalities and significant harm to the environment with limited prospect of full recovery. Social implications could lead to community protests and high financial implications.
Major	The impact could lead to disruption to activities lasting more than 1 week. There could be major or multiple injuries which could be permanent. Environmental damage could be significant with recovery times over a year and non-compliance with regulations and consents. National and long-term social impacts could be endured. The impact would require extensive mitigation actions.
Moderate	The impact could lead to disruption to activities lasting more than 1 day but less than 1 week. There could be moderate environmental damage with wider effects and recovery of up to a year. Moderate cost and social implications which are localised yet long-term. This could lead to a serious injury requiring lost time. The impact would require emergency mitigation actions to be in place.
Minor	The impact could lead to disruption to activities lasting less than 1 day. There could be localised environmental impact within the site boundary, localised and temporary social or reputational impacts, and a minor cost implication. This could lead to a minor injury requiring medical treatment. The impact could be rectified through additional mitigation actions to be put in place.
Minimal	The impact could lead to disruption to an isolated section of activity with limited social, economic and environmental consequences. It could equate to a minor first aid case. The impact could be rectified through usual activity.

Risk assessment

5.10.53 The level of risk of the climate change impacts on the Project is concluded in this risk assessment as a function of their likelihood and magnitude. This will identify any significant potential risks and where further mitigation and adaptation measures will be required. This matrix is shown in **Table 5.30**.

⁴⁴ Commission Notice – Technical guidance on the climate proofing of infrastructure in the period 2021 – 2017. 2021 (Online). Official Journal of the European Union 2021/C 373/01 pp. 1 – 92. Accessed from: <https://op.europa.eu/en/publication-detail/-/publication/23a24b21-16d0-11ec-b4fe-01aa75ed71a1/language-en>.

Table 5.30 Risk assessment concluding significance of effect

Likelihood	Magnitude				
	Minimal	Minor	Moderate	Major	Catastrophic
Very unlikely	Negligible (NS)	Negligible (NS)	Minor (NS)	Moderate (S)	Moderate (S)
Unlikely	Negligible (NS)	Minor (NS)	Minor (NS)	Moderate (S)	Major (S)
Possible	Minor (NS)	Minor (NS)	Moderate (S)	Major (S)	Major (S)
Likely	Moderate (S)	Moderate (S)	Major (S)	Major (S)	Major (S)
Very likely	Moderate (S)	Major (S)	Major (S)	Major (S)	Major (S)

(S) Significant, (NS) Not Significant.

5.10.54 The effects found to be of moderate and major risk are considered to be significant and further mitigation would be recommended.

5.11 Cumulative effects (unchanged)

5.11.1 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.

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

- Colemans Quarry (Holwell);
- Halecombe Quarry;
- Torr Works Quarry; and
- Westdown Quarry.

5.11.3 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.

5.12 Topics scoped out from detailed assessment

Cultural heritage (unchanged)

- 5.12.1 The proposed development involves deepening of the existing quarry and does not include any lateral extension. The original permission required archaeological assessment and investigation which has been carried out so direct effects on the historic environment have been assessed previously and informed the extant permission. Indirect effects arise where a development harms heritage asset without causing direct disturbance; primarily arising from change in the setting of heritage assets. The nature of the proposed development (a deepening with no lateral extension) means that there are no indirect effects. Therefore, no detailed assessment is proposed in the EIA.

Land and soils (including agriculture) (unchanged)

- 5.12.2 No new land-take is required as part of the proposed development, therefore there would be no effects on soils and agriculture as a result of the development. This has therefore been scoped out from detailed assessment.

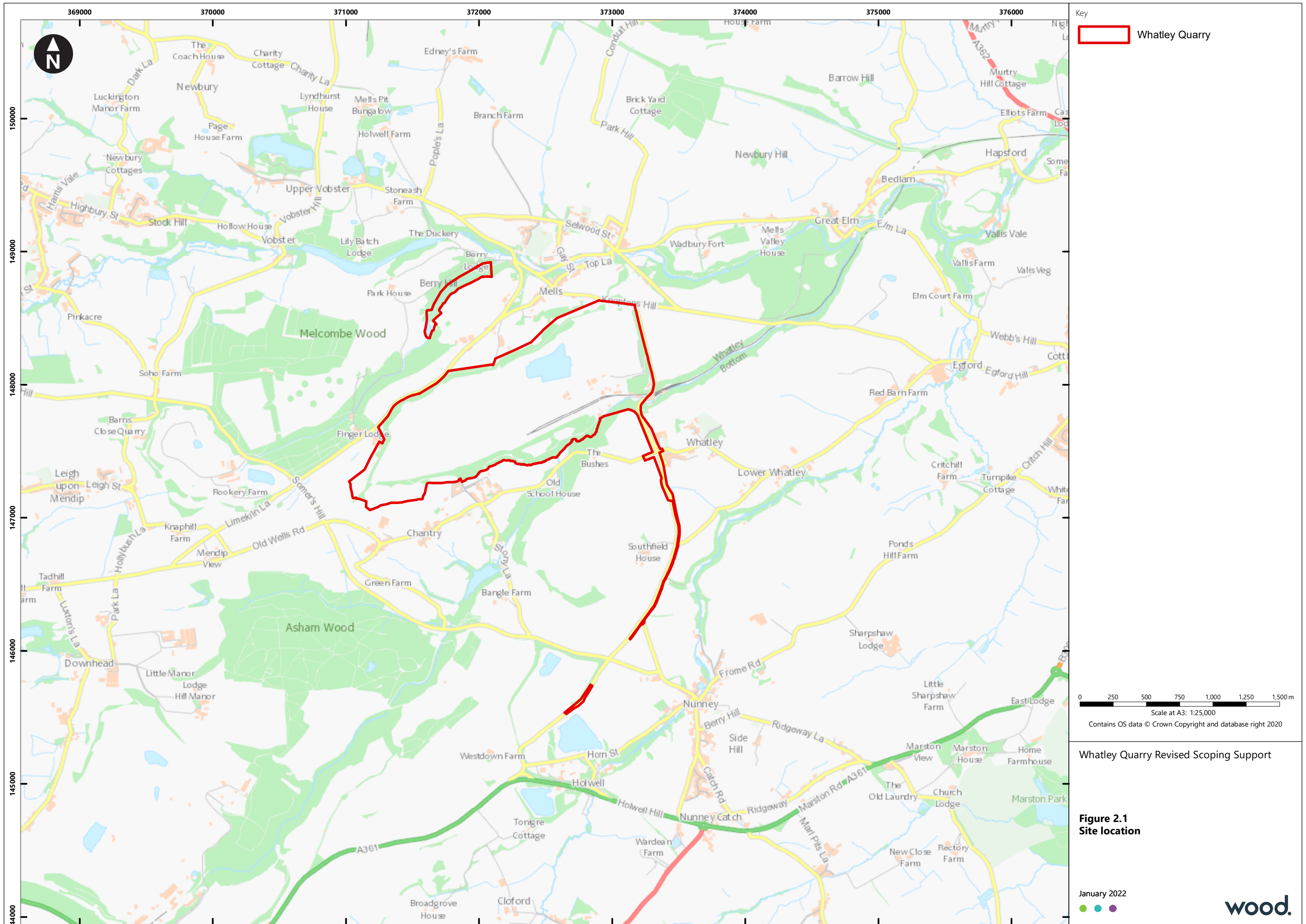
Major accidents and disasters (unchanged)

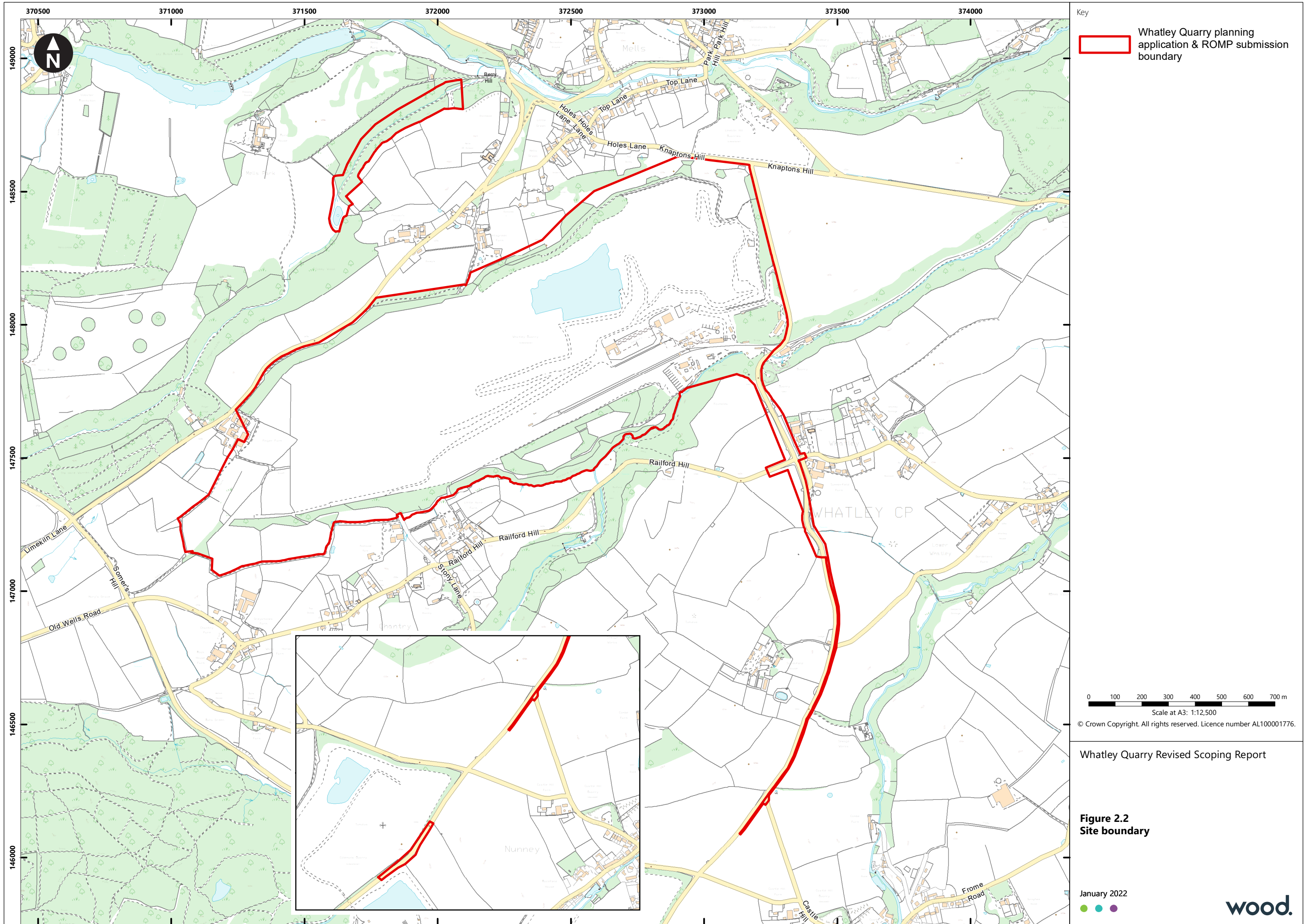
- 5.12.3 The proposed development will take place at an existing operational site which is heavily regulated under health and safety and quarry regulations. The proposed development is not located in an area anticipated to be at risk of major accidents or disasters. The vulnerability to flood risk will be assessed in the Flood Risk Assessment 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 revised EIA scope

- 6.1.1 As set out in the preceding sections, the EIA for the proposed deepening and Whatley Quarry will include detailed assessments on the following topics:
- Revised restoration scheme;
 - Landscape and visual;
 - Noise;
 - Vibration;
 - Water environment;
 - Biodiversity;
 - Traffic and transport;
 - Air quality;
 - Socio-economics;
 - Climate; and
 - Cumulative effects.
- 6.1.2 The ES will consider the significant issues in more detail and will report on further investigations in relation to the above.
- 6.1.3 Wood and Hanson would welcome comments on the revised 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





wood.