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#### 18 Human Health

#### 18.1 Introduction

- This chapter of the Environmental Statement (ES) presents the findings of the assessment of likely significant effects on human health as a result of Lime Down Solar Park (hereafter referred to as 'the Scheme'). For more details about the Scheme, refer to ES Volume 1, Chapter 3 The Scheme [EN010168/APP/6.1].
- 18.1.2 This chapter identifies and proposes measures to address the potential impacts and likely significant effects on human health, during the construction, operation and maintenance, and decommissioning phases of the Scheme.
- 18.1.3 This chapter should be read in conjunction with the following chapters in **ES Volume 1 [EN010168/APP/6.1]**:
  - Chapter 7: Climate Change;
  - Chapter 8: Landscape and Visual Impact Assessment;
  - Chapter 11: Hydrology, Flood Risk and Drainage;
  - Chapter 13: Transport and Access;
  - Chapter 14: Noise and Vibration;
  - Chapter 15: Air Quality;
  - Chapter 16: Socio-Economics, Tourism and Recreation;
  - Chapter 19: Ground Conditions; and
  - Chapter 20: Other Environmental Matters.
- 18.1.4 This chapter is supported by the following figures in **ES Volume 2** [**EN010168/APP/6.2**]:
  - Figure 18-1: Study Areas for Human Health;
  - Figure 18-2: Health and Social Care Facilities; and
  - Figure 18-3: Hospitals and Emergency Healthcare Facilities.
- 18.1.5 This chapter is supported by the following appendices in **ES Volume 3** [EN010168/APP/6.3]:
  - Appendix 18-1: Human Health Consultation;
  - Appendix 18-2: Human Health Legislation, Policy and Guidance; and
  - Appendix 18-3: Human Health Summary of Non-Significant Effects.

#### 18.2 Consultation

A request for an EIA Scoping Opinion (Ref 18-1) was sought from the Secretary of State through the Planning Inspectorate in July 2024. The issues raised in the Scoping Opinion (Ref 18-2) are summarised and responded to within ES Volume 3, Appendix 1-2: Scoping Opinion Response Table [EN010168/APP/6.3], which demonstrates how the matters raised in the Scoping Opinion are addressed in this ES. Matters where the scope of the assessment has been raised by the Planning Inspectorate are summarised in Table 18-1 below.

**Table 18-1: Planning Inspectorate Scoping Opinion Responses** 

ID	Summary of Matter	Response
ID 3.14.1	The Scoping Report proposes to scope out an assessment of impacts to the following matters:  Physical activity (all project phases); Risk taking behaviour (all project phases); Diet and nutrition (all project phases); Housing (operation); Relocation (all project phases); Transport modes, access and connections (operation); Community safety (all project phases); Social participation, interaction and support (all project phases); Climate change mitigation and adaptation (construction and decommissioning); Radiation (all project phases); Health and social care services (construction and decommissioning); Built environment (construction and decommissioning); Built environment (construction and decommissioning); Wider societal infrastructure and resources (construction and decommissioning). Regarding impacts on health and social care services during construction and decommissioning, the Inspectorate notes that this matter is listed in both the 'Proposed Elements to be scoped in' and	The Applicant acknowledges a typological error in Table 22.1 of the Scoping Report in which "health and social care services (construction and decommissioning)" should have read "health and social care services (operation)", to match the scope set out in Tables 19.5 and 19.6 of the Scoping Report.  For the avoidance of doubt, assessment of health and social care services at all stages of the development have been assessed in Section 18.10 below, as listed at Paragraph 18.6.7.  All other human health and wellbeing matters listed have been scoped out of the assessment.
	'Proposed Elements to be Scoped	



ID	Summary of Matter	Response
	out' columns of Table 21.1, meaning the Applicant's proposed approach is unclear. For the avoidance of doubt, the Inspectorate considers that this matter should be scoped in for all stages of the Proposed Development where likely significant effects could occur, or a justification should be presented in the ES as to why significant effects are not likely to occur.  Given the nature of the Proposed Development and the information provided within the Scoping Report, the Inspectorate agrees that all other human health and wellbeing matters listed at 3.14.1 can be scoped out of further assessment.	
ID 3.14.2	The Scoping Report proposes to assess impacts to the to the following human health and wellbeing matters in other topic chapters and summarise findings in the 'Other Environmental Matters' ES Chapter:  • Housing (construction and decommissioning);  • Open space, leisure and play (all phases);  • Transport modes, access and connections (construction and decommissioning);  • Community identity, culture, resilience and influence;  • Education and training;  • Employment and income;  • Climate change mitigation and adaptation (operation);  • Air quality;  • Water quality or availability;  • Land quality;  • Noise and vibration;  • Health and social care services (construction and decommissioning); and  • Wider societal infrastructure and resources (operation)  The Inspectorate is content with this approach. The EIA Methodology ES chapter should provide clear cross-	The Applicant (Lime Down Solar Park Limited) notes these comments and has assessed human health matters as scoped in, in this standalone chapter, rather than as part of ES Volume 1, Chapter 20: Other Environmental Matters [EN010168/APP/6.1]. This has been done for ease of reference, completeness, and to provide a single location for the assessment of human health effects.  The list of all human health matters scoped into this assessment is provided at Paragraph 18.6.7.  Cross-referencing to baseline and initial assessments in other technical chapters has been included where they inform or are relied upon for the assessment of human health effects set out in this chapter.

ID	Summary of Matter	Response		
	impacts on human health are considered. Consideration should be given to direct and indirect impacts on human health receptors.			
ID 3.14.3	The Scoping Report states that the Local Impact Area (LIA) for socioeconomic impacts has been used for the human health and wellbeing assessment to ensure the worst-case impact area is included. The Inspectorate notes that limited information has been provided to explain how the study area was selected.  The study area for the human health and wellbeing assessment and its extent should be clearly explained in the ES and justification provided. The assessment methodology and selection of study areas should be discussed and agreed with relevant consultation bodies.	The Study Areas for human health have been set out and justified in Section 18.5 of this chapter. The Study Areas have also been depicted in ES Volume 2, Figures 18-1, 18-2 and 18-3 [EN010168/APP/6.2], which support this chapter.  Additional opportunity for consultation and agreement of assessment methodology and selection of Study Areas with relevant consultation bodies was undertaken through and alongside the statutory consultation period with no changes to the Study Areas requested by the host authority or other statutory bodies.		
ID 3.14.4	The Scoping Report proposes to assess impacts to the following human health and wellbeing matters in the Socio-Economics, Tourism and Recreation Chapter of the ES:  Requirement for temporary accommodation for the construction workforce and potential health effects on existing residents;  Impacts on tourism and recreation facilities;  Education and training opportunities; and  Impacts on employment and income opportunities.  The Inspectorate is content with this approach. The EIA Methodology ES chapter should provide clear cross-referencing to where the relevant impacts on human health are considered. Consideration should be given to direct and indirect impacts on human health receptors.	The Applicant confirms that assessment of requirement for temporary accommodation, impacts on tourism and recreation facilities, education and training opportunities, and impacts on employment and income opportunities have been undertaken in ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1] and its supporting appendices [EN010168/APP/6.3].  Resultant health and wellbeing impacts based on residual effects to these socio-economic, tourism and recreation receptors have been assessed in Section 18.10 of this chapter, including appropriate cross-references.		

18.2.2 Engagement has been undertaken throughout the pre-application process with stakeholders comprising Wiltshire Council's Public Health Team, the UK Health Security Agency (UKHSA) and Office of Health Improvement and Disparities

(OHID), and local stakeholders including relevant NHS Trusts and emergency response services. The matters raised and the level of consultation undertaken are set out in **ES Volume 3, Appendix 18-1: Human Health Consultation [EN010168/APP/6.3]**.

18.2.3 Statutory consultation was held between 29 January 2025 and 19 March 2025. A full list of consultation responses in relation to human health are presented in the Consultation Report [EN010168/APP/5.1] and supporting Consultation Report Appendices [EN010168/APP/5.2] submitted as part of the Application. Specific matters consulted with Wiltshire Council are set out in Table 18-2 below.

**Table 18-2: Statutory Consultation with Wiltshire Council** 

Consultee	Summary of Matters	Summary of Response, Outcomes and Next Steps	
Wiltshire Council's Public Health team  • The Applicant was requested to confirm position on providing a Relationship Manager or funding for mental health support with Island Green Power and if a mechanism exists to facilitate the role.  • The Applicant was directed to Community Area Board health data through Wiltshire Intelligence to expand the human health baseline assessment.		The Applicant team has considered the provision of a Relationship Manager and mental health funding, and responded to Wiltshire Council's Public Health team in its following meeting with the Applicant (see below relating to the meeting held on the 1 April 2025).  The Applicant has used Community Area Board health data through Wiltshire Intelligence to support the assessment of baseline human health conditions in Section 18.7 of this chapter.	
Wiltshire Council's Public Rights of Way team  A virtual meeting with representatives of Wiltshire Council's Public Rights of Way team was held on 12 March 2025.  (matters relating to human health)  The potential for the Scheme to deliver new permissive access routes, upgrades to existing public rights of way, and improvements to public rights of way signage and furniture onsite and in the nearby area.		New permissive access routes have been included in the Scheme design, shown as Work No.10 on the Works Plan [EN010168/APP/2.3] and shown on ES Volume 2, Figure 3-4: Landscape and Ecology Mitigation Plan [EN010168/APP/6.2]. These are considered as embedded enhancement measures in the assessment of open space, leisure and play, and transport connectivity effects in Section 18.10 of this chapter.	
Wiltshire Council's Public Health team	A follow-up virtual meeting with representatives of Wiltshire Council's Public Health team was held on 1 April 2025.  • Whether or not there was a requirement for a Relationship	The Applicant has considered the provision of a Relationship Manager and has deemed that this role already falls within the scope of the Applicant's communications team (although not under the specific title of 'Relationship Manager'). This has been agreed by	

Consultee	Summary of Matters	Summary of Response, Outcomes and Next Steps		
	confirmed as not required, following their discussions with representatives from Suffolk County Council at an OHID forum.  • The Applicant was requested to confirm its position on providing	Wiltshire Council's Public Health team following advice provided by Suffolk County Council's representative at the OHID forum. The lack of any precedent case for this service to be provided by an Applicant in a DCO application was also acknowledged by Wiltshire Council.		
	and if a mechanism exists to facilitate this.  The Applicant was requested to signpost to locally available mental health and wellbeing resources to members of the public engaged with the Scheme.	The Applicant team has furthermore considered that it is unable to provide direct mental health funding through the DCO process, and any support of this nature would only be available through the Community Benefits Fund, agreed following determination of the DCO. The Applicant has, however, committed to ensuring more direct engagement with the public on health and wellbeing matters is undertaken (outlined in the below bullet).  The Applicant will continue to monitor any responses from stakeholders relating to mental health and has set up a response template to be able to quickly respond with information that sets out the DCO procedure, and provides the link to online and locally available mental health and wellbeing resources as provided by Wiltshire Council's Public Health team. As no member of the Applicant or consultant team is a mental health professional,		
		the Applicant's team is in no position to offer any medical advice to stakeholders, and if requested will only signpost to relevant contacts and resources.		

18.2.4 A further round of targeted consultation was undertaken between 3 June 2025 and 11 July 2025 following changes to the development boundary area of the Scheme presented in the PEIR and at Stage Two Statutory Consultation. Further detail regarding the targeted consultation is provided in **ES Volume 1**, **Chapter 1: Introduction [EN010168/APP/6.1]**.

# **18.3** Legislation, Planning Policy and Guidance

18.3.1 A summary of applicable legislation, planning policy and other guidance documents relating to human health pertinent to the Scheme is provided below.



Full details of the legislation, policy, and guidance of relevance to the assessment of human health is provided in full in ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3] and supported in ES Volume 1, Chapter 5: Energy Need, Legislative Context and Energy Policy [EN010168/APP/6.1].

#### **Legislation**

- 18.3.3 Applicable legislation to inform the human health assessment includes:
  - The Planning Act 2008 (Ref 18-3);
  - Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref 18-4);
  - Equality Act 2010 (Ref 18-5); and
  - Health and Care Act 2022 (Ref 18-6).

## **National Planning Policy**

- 18.3.4 The National Policy Statements (NPSs) that are relevant to the Scheme are:
  - Overarching National Policy Statement for Energy (EN-1) (Ref 18-7).
  - National Policy Statement for Renewable Energy Infrastructure (EN-3) (Ref 18-8); and
  - National Policy Statement for Electricity Networks Infrastructure (EN-5) (Ref 18-9).
- 18.3.5 Specifically, Section 4.4 of NPS EN-1 (January 2024) sets out the assessment principles for health effects, and sections within Part 5 consider the generic impacts that arise from the development of all types of energy infrastructure covered by the energy NPSs. Section 2.10 of NPS EN-3 (January 2024) provides the primary policy basis for decisions on renewable energy DCO applications in relation to solar photovoltaic energy generation. Finally, Sections 2.9, 2.10 and 2.11 of NPS EN-5 (January 2024) set out considerations and policy requirements in respect of human health impacts from electromagnetic fields (EMF).
- 18.3.6 The NPSs listed above came into effect on 17 January 2024. These NPSs set out the Government's energy policy for the delivery of nationally significant energy infrastructure, the need for new energy infrastructure, and guidance for the determination of an application for a Development Consent Order (DCO).
- 18.3.7 Consultation on updates to the NPSs for Energy was undertaken between April and May 2025 (Ref 18-10) but it is not anticipated that the changes proposed are to be adopted until this DCO is submitted. The proposed changes to the NPSs for Energy which are at consultation stage, have been considered and



are not likely to substantially change the approach to assessment of human health effects.

- The relevant NPS requirements specifically relevant to human health have been detailed further in Section 1.2 of ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3]. This is supported by detailed indication of where in the ES the information is provided to address these requirements, provided in ES Volume 3, Appendix 5-1: National Policy Statement Requirements [EN010168/APP/6.3].
- 18.3.9 The National Planning Policy Framework (NPPF) (December 2024) (Ref 18-11) sets out the Government's planning policies for England and how these are expected to be applied.
- 18.3.10 Specific to human health, the NPPF provides policy context at Chapter 8 for the support and promotion of healthy and safe communities, at Chapter 12 for achieving well-designed places, and Chapter 15 for conserving and enhancing the natural environment.

## **Local Planning Policy**

- 18.3.11 Local planning policies that are relevant to the Scheme and human health are:
  - South Gloucestershire Joint Strategic Needs Assessment (Ref 18-12);
  - South Gloucestershire Joint Local Health and Wellbeing Strategy 2025-29 (Ref 18-13);
  - Wiltshire Joint Strategic Needs Assessment (Ref 18-14);
  - Wiltshire's Joint Local Health and Wellbeing Strategy 2023 to 2032 (Ref 18-15);
  - Wiltshire Core Strategy 2006 to 2026 (adopted January 2015) (Ref 18-16):
    - Core Policy 9 Chippenham Central Areas of Opportunity;
    - Core Policy 10 Spatial Strategy: Chippenham Community Area;
    - Core Policy 11 Spatial Strategy: Corsham Community Area;
    - Core Policy 13 Spatial Strategy: Malmesbury Community Area;
    - Core Policy 15 Spatial Strategy: Melksham Community Area;
    - Core Policy 34 Additional Employment Land;
    - Core Policy 41 Sustainable construction and low-carbon energy;
    - Core Policy 42 Standalone renewable energy installations;

- Core Policy 46 Meeting the needs of Wiltshire's vulnerable and older people;
- Core Policy 48 Supporting rural life;
- Core Policy 49 Protection of rural services and community facilities;
- Core Policy 51 Landscape;
- Core Policy 52 Green Infrastructure;
- Core Policy 55 Air quality;
- Core Policy 56 Contaminated land;
- Core Policy 62 Development impacts on the transport network;
- Core Policy 67 Flood Risk; and
- Core Policy 68 Water resources.
- 'Saved policies' from previous Local Development Plans:
  - North Wiltshire Local Plan 2011, adopted June 2006 (Ref 18-17);
  - West Wiltshire District Plan, First Alteration, adopted June 2004 (Ref 18-18); And
  - West Wiltshire Leisure and Recreation DPD, adopted January 2009 (Ref 18-19).

#### Neighbourhood plans:

- Chippenham Neighbourhood Plan 2023-2038, adopted May 2024 (Ref 18-20);
- Chippenham Without Neighbourhood Plan 2022-2036, adopted October 2023 (Ref 18-21);
- Corsham Neighbourhood Plan 2016-2026, adopted November 2019 (Ref 18-22);
- Great Somerford (incorporating Startley) Neighbourhood Plan 2016-2026, adopted November 2017 (Ref 18-23);
- Hullavington Neighbourhood Development Plan 2016 2026, adopted September 2019 (Ref 18-24);
- Malmesbury Neighbourhood Plan: Volume I Main Body, adopted February 2015 (Ref 18-25);
- Joint Melksham Neighbourhood Plan 2: 2020 2026, adopted August 2025 (Ref 18-26);



- Seagry Parish Neighbourhood Plan 2019-2036, adopted May 2021 (Ref 18-27);and
- Sherston Neighbourhood Plan 2006 to 2026, adopted May 2019 (Ref 18-28).
- 18.3.12 No minerals and waste policies for Wiltshire (Ref 18-29, Ref 18-30, Ref 18-31, and Ref 18-32) are considered relevant to the assessment of human health in respect of this Scheme.
- 18.3.13 The Order Limits includes two Highway Improvement Areas in South Gloucestershire Council's administrative area. Whilst this makes South Gloucestershire Council a host authority, local policy in regard to human health has not been assessed in full. This has been determined as proportionate as the likely effects relating to these parts of the Scheme are limited to a 'transport modes, access and connections' matter, and are anticipated to be negligible or imperceivable as a human health effect. Nonetheless, strategic human health objectives for South Gloucestershire have been considered in ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3].

## **Emerging Local Planning Policy**

- 18.3.14 The emerging Wiltshire Local Plan (Ref 18-33) is a proposed strategic planning document to update the existing and replace the existing Wiltshire Core Strategy. The emerging plan is currently undergoing examination in public and is anticipated to be adopted no earlier than the third quarter of 2025. Due to the progressed nature of the policies therein, the emerging policies deemed to be of most relevance to human health assessment are set out in Section 1.2 of ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3].
- 18.3.15 The Corsham Neighbourhood Plan and Malmesbury Neighbourhood Plan are currently under review (Ref 18-34, Ref 18-35), with consultation held on presubmission draft policies. With regard to policy considerations for the assessment of human health, only minor policy wording changes are directly relevant to human health. Nonetheless, these have been considered and are set out ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3].

#### **Other Guidance**

- 18.3.16 Other guidance documents relevant to the assessment of the impacts of the Scheme on human health include:
  - National Planning Practice Guidance (NPPG), updated December 2024 (Ref 18-36);





- Defra Rights of Way circular (1/09) (Ref 18-37);
- Institute of Sustainability and Environmental Professionals (ISEP)- Guide to: Effective Scoping of Human Health in EIA (2022) (Ref 18-38);
- The Institute of Sustainability and Environmental Professionals (ISEP) Guide to: Determining Significance for Human Health in Environmental Impact Assessment (2022) (Ref 18-39);
- NHS London Healthy Urban Development Unit (HUDU) Rapid Health Impact Assessment (HIA) Tool, Fourth Edition (2019) (Ref 18-40);
- Public Health England (PHE) guidance, Spatial Planning for Health: An evidence resource for designing healthier places (2017) (Ref 18-41);
- PHE guidance, Health Impact Assessment in spatial planning: A guide for local authority public health and planning teams (2020) (Ref 18-42);
- PHE Advice on the content of Environmental Statements accompanying an application under the Nationally Significant Infrastructure Planning Regime (2021) (Ref 18-43);
- PHE Strategy 2020 to 2025 (2019) (Ref 18-44);
- Wales Health Impact Assessment Support Unit (WHIASU), Health Impact Assessment. A practical guide to HIA (2012) (Ref 18-45);
- Marmot et al., Fair Society Healthy Lives: the Marmot Review: strategic review of health inequalities in England post-2010 (2010) (Ref 18-46):
- Institute of Health Equity, Health Equity in England: The Marmot Review 10 Years On (2020) (Ref 18-47);
- The Health Foundation and the Institute of Health Equity, Build Back Fairer the Covid-19 Marmot Review: The Pandemic, Socioeconomic and Health Inequalities in England (2020) (Ref 18-48);
- NHS, The NHS Long-Term Plan (January 2019) (Ref 18-49); and
- Suffolk County Council, Energy and Climate Adaptive Infrastructure Policy: Community Engagement and Wellbeing Supplementary Guidance Document (2024) (Ref 18-50).

#### **Assessment Assumptions and Limitations** 18.4

- 18.4.1 This assessment is based on baseline information available at the time of writing this chapter and the Scheme design as submitted for this DCO Application.
- The methodology for human health has considered the following assumptions: 18.4.2



- Reporting of baseline conditions is based on the most up-to-date publicly available datasets for each receptor as of 1 June 2025. Where data relies on the 2021 Census, the potential impact upon the socio-demographic and economic environments as result of the COVID-19 pandemic and associated national lockdowns have been identified:
- The assessment of effects on human health from the Scheme is based on professional judgement as directed by the industry policy and guidance as set out in Section 18.3 above and ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3]. This assessment considers beneficial and adverse effects to human health in the Scheme's Study Areas;
- Effects on human health during the construction, operation and maintenance, and decommissioning phases are assessed in this ES, drawing upon the assessment throughout the ES of relevance to human health and its wider determinants. Where reporting on effects is included, human health effects are assessed against residual effects as reported in other chapters within the ES. The relevant chapters of ES Volume 1 [EN010168/APP/6.1] comprise:
  - Chapter 7: Climate Change;
  - Chapter 8: Landscape and Visual Impact Assessment;
  - Chapter 11: Hydrology, Flood Risk and Drainage;
  - Chapter 13: Transport and Access;
  - Chapter 14: Noise and Vibration;
  - Chapter 15: Air Quality;
  - Chapter 16: Socio-Economics, Tourism and Recreation;
  - Chapter 19: Ground Conditions;
  - Chapter 20: Other Environmental Matters Section 20.6:
     Electromagnetic Fields; and
  - Chapter 20: Other Environmental Matters Section 20.7: Major Accidents and Disasters.
- Where this assessment of human health effects relies upon information from other chapters within the ES, the topic-specific assumptions and limitations set out in the respective chapters also apply to this chapter and are signposted as necessary; and
- In-combination effects during the construction, operation and maintenance, and decommissioning phases are based on assessments reporting on all



matters relevant to human health within the ES. Where any of these topics record a likely significant effect on a receptor or group of receptors that have a likely pathway to have in-combination effects with regard to human health, it is assumed as a worst-case that the effect could occur at the same time.

## 18.5 Study Area

- 18.5.1 The assessment of human health effects relies on multiple different Study Areas, each based on the type of health effect or interaction being assessed. These Study Areas are based on proximity to the Scheme, or based on topic-specific Study Areas where they rely on assessments made in other technical chapter of **ES Volume 1 [EN010168/APP/6.1]**.
- The primary Study Area for determining baseline conditions for human health comprises all electoral ward areas falling within 2 km of the Scheme. This has been judged as a reasonable assumption for the largest area for which most of the scoped in determinants of health (see **Table 18-1** at ID 3.14.2) are likely to be significantly affected.
- An additional 5 km Study Area is used solely for assessing baseline provision of primary health services and likely significant effects upon these services. This is based on the largely rural character of the 2 km primary Study Area, and the resultant likely need for people to travel further than 2 km to access primary healthcare, due to the location of available services.
- The 2 km and 5 km Study Areas for human health are shown in **ES Volume 2**, **Figure 18-1: Study Areas for Human Health [EN010168/APP/6.2]**.
- The 2 km and 5 km Study Areas for human health are based on the extent of the Solar PV Sites (Lime Down A, B, C, D, and E), their site access points, the Cable Route Corridor and its access points, and any construction compounds. The Scheme's 'Order Limits' as shown in the **Location Plan**[EN010168/APP/2.1] also contains six offsite Highway Improvement Areas associated with Abnormal Indivisible Loads (AILs) which have not been considered in the assessment of human health effects. This has been determined as a proportionate approach, as the likely effects relating to these parts of the Scheme are limited to a 'transport modes, access and connections' matter. Their use is anticipated to be very infrequent for individually specified AIL movements, with each movement monitored and escorted to minimise interactions with members of the public. As such any interactions if they occur are anticipated to be negligible or imperceivable as a human health effect.
- The baseline assessments for some of the scoped human health receptors are reliant on, or refer directly to, baseline reporting in relevant technical assessments in the rest of **ES Volume 1 [EN010168/APP/6.1]**. In these circumstances, the baseline reporting for human health conditions will be assessed entirely on the basis of the Study Area for that topic area. This is to



ensure the assessment of baseline conditions for these receptors is consistent in approach between the referenced technical chapter, and this chapter. For example, where baseline noise and vibration conditions are defined within a 500m offset from the Order Limits, this will be reported in this assessment as the 'Study Area for noise and vibration'.

## Use of the 2 km Study Area

- 18.5.7 The determinants of health considered most likely to be experienced up to 2 km from the Scheme are based on those as defined in ISEP's Guide to: Effective Scoping of Human Health in Environmental Impact Assessment (Ref 18-38). These include determinants of health based on direct and indirect physical and mental health impacts.
- The use of a 2 km Study Area is also consistent with judgements made in respect of visual and experiential effects as assessed elsewhere in ES Volume 1 [EN010168/APP/6.1]. ES Volume 1, Chapter 8: Landscape and Visual Impact Assessment [EN010168/APP/6.1] sets out that beyond 2 km from the Scheme, visual impacts would be barely perceptible and thus are not anticipated to be significant, while ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1] sets out that no significant effects on recreation (PRoWs, leisure and play facilities) are anticipated beyond 2 km from the Scheme. A such, professional judgement is applied in the consideration visual and experiential effects at a distance of more than 2 km from the Scheme are not likely to induce significant human health effects.
- 18.5.9 Baseline data has been collected across census Lower Super Output Area (LSOA) level that fall wholly or partially within the 2 km Study Area. Where data is unavailable at the LSOA level, electoral ward, and authority-level data has been collected for Wiltshire, hereafter referred to as the 'Wider Baseline Study Area', the authority in which the 2 km Study Area falls. Baseline data from within the 2 km Study Area will also be compared against data for the Wider Baseline Study Area, regional (South West), and national data (England, Great Britian or the United Kingdom dependent on the scope of the dataset used) to determine likely population and receptor sensitivity to changes in human health conditions.
- 18.5.10 **Table 18-3** below sets out the names of each data area considered as part of the 2 km Study Area.

Table 18-3: Study Area (2 km Study Area) Data Areas

Lower Super Output Area		Ward (Wiltshire Council)
Wiltshire 004B		Brinkworth
Wiltshire 005A	Wiltshire 008A	By Brook
Wiltshire 005B	Wiltshire 008B	Kington

Lower Super Output Area		Ward (Wiltshire Council)
Wiltshire 005C	Wiltshire 008C	Sherston
Wiltshire 005D	Wiltshire 008D	
Wiltshire 010A	Wiltshire 010F	Chippenham Cepen Park and Derriads
Wiltshire 010B	Wiltshire 010G	Chippenham Cepen Park and Hunters Moon
Wiltshire 010C	Wiltshire 011C	Chippenham Lowden and Rowden
Wiltshire 010D	Wiltshire 011F	Chippenham Sheldon
Wiltshire 010E		
Wiltshire 018A	Wiltshire 018E	Corsham Ladbrook
Wiltshire 018B	Wiltshire 018F	Corsham Pickwith
Wiltshire 018C	Wiltshire 018I	Corsham Without
Wiltshire 018D		
Wiltshire 020A	Wiltshire 021B	Bowerhill
Wiltshire 020B	Wiltshire 021G	Melksham East
Wiltshire 020C	Wiltshire 022A	Melksham Forest
Wiltshire 020E		Melksham Without North and Shurnhold
Wiltshire 021A		Holt
Wiltshire 021C		Melksham Without West and Rural

## **18.6** Assessment Methodology

- 18.6.1 This section sets out the scope and methodology for the assessment of the impacts of the Scheme on human health.
- 18.6.2 The methodologies described in the following section have been developed in line with the relevant planning policy and industry guidance for assessing potential effects of the Scheme on human health.
- 18.6.3 The assessment of health cross refers to the technical assessments undertaken for the other technical disciplines in the ES, highlighting any conclusions reached which are relevant to human health. A health 'lens' has been applied to these conclusions to determine the extent to which these conclusions have any effect (or not) upon the health of the local population or specific population groups therein. A clear pathway between the anticipated impact and the resultant health effects has been determined to understand the significance of any effects to human health, including for direct and less obvious indirect effects. The assessment has also been informed by available topic-specific literature, and where appropriate, engagement with health and wellbeing stakeholders and statutory bodies.
- 18.6.4 The assessment of human health is undertaken on the understanding that as defined by the Constitution of the World Health Organization (WHO) in 1948, "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (Ref 18-51). As such, the health and wellbeing of individuals and communities is based on a broad range of



determinants of health, which have been modelled by Dahlgreen and Whitehead (1991), and Barton and Green (2006) respectively, as shown in **Plate 18-1** and **Plate 18-2** below.

Plate 18-1: Determinants of Health in Individuals (Ref 18-52)

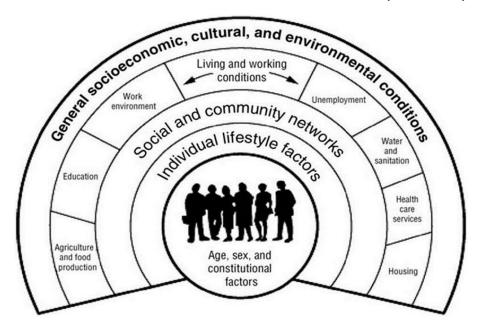
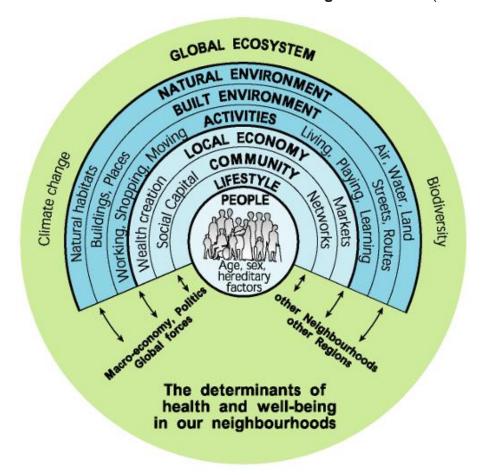




Plate 18-2: Determinants of Health in Neighbourhoods (Ref 18-53)



18.6.5 These models illustrate the range of factors that contribute to health and wellbeing, from largely fixed personal factors (such as age, sex, and hereditary factors) to broader determinants of health based on individual lifestyle, social community and network based determinants, to wider environmental and economic factors, all of which are characterised by their interdependency in how they contribute to health living.

#### **Assessment Scope**

- 18.6.6 The scope of assessment is defined by that set out in Chapter 19: Human Health in the Environmental Impact Assessment Scoping Report submitted to the Secretary of State on 16 July 2024 (Ref 18-1) and as developed by the Planning Inspectorate in their Scoping Opinion, 22 August 2024 (Ref 18-2) see **Table 18-1** above.
- 18.6.7 Matters scoped into this assessment therefore comprise:
  - Housing; transport modes, access and connections; health and social care services; (construction and decommissioning);



- Climate change mitigation and adaptation; wider societal infrastructure and resources (operation and maintenance); and
- Open space, leisure and play; community identity, culture, resilience and influence; education and training; employment and income; air quality; water quality or availability; land quality; noise and vibration; at all stages of the Scheme's lifetime (construction, operation and maintenance, and decommissioning).
- 18.6.8 Matters scoped out are those set out in the Scoping Opinion (Ref 18-2) see **Table 18-1** above in respect of ID 3.14.1.
- 18.6.9 The assessment scenarios that are being considered for the purposes of the EIA are:
  - Existing Baseline 2023 to 2025, from which all future baseline scenarios can be compared;
  - Construction phase from 2027 to 2029. This is based on the earliest
    possible construction commencement of the Scheme. The assessment will
    consider the full construction phase, and a 'worst-case' peak month of
    activities;
  - Operation and maintenance phase from 2029 to 2089. The assessment will consider the operation and maintenance phase, and any peaks of activity attributed to the replacement of Scheme components, the greatest peak of which is for all Solar PV Panels and BESS Batteries to be replaced over a 12 to 24 month period. As a worst-case, a 12-month replacement period is considered in the assessment in Section 18.10 below as this is likely to generate the greatest magnitude of impacts. General operational maintenance and replacement of Scheme components such as broken and defective Solar PV panels throughout the Scheme's operational lifetime are not assessed separately as the magnitude of impacts from these replacement events is anticipated to be lower than the peak replacement scenario; and
  - Decommissioning 2089 to 2091. This would be the latest period in which
    decommissioning of the Scheme would commence and has been based on
    the anticipated 60-year operation and maintenance phase for the Scheme.
    Decommissioning is estimated to take up to 24 months.
  - A future baseline scenario wherein the Scheme does not go ahead.
- 18.6.10 The assessment of human health effects will therefore be grouped in Section 18.10 to set out likely significant effects during construction, operation and maintenance, and decommissioning.
- 18.6.11 The assessment of health and wellbeing impacts was applied to the general population, and to identified vulnerable groups as identified through baseline



conditions analysis. Consideration of vulnerable groups was utilised to effectively determine sensitivity of the population as a whole and identify what impacts the Scheme may have on health inequalities. Vulnerable subpopulation groups as identified in Table 9.2 of ISEP Guide to: Effective Scoping of Human Health in Environmental Impact Assessment (2022) (Ref 18-38) include the following groups:

- Age related groups: children, young people, older people;
- Income related groups: people on low income or with poor job security, economically inactive and unemployed people, people in poverty or experiencing homelessness, those unable to work due to poor health;
- Health inequality or disadvantage: people with long-term physical disabilities, long-term mental disabilities, and learning or neurological disabilities, and those providing care to people with disabilities;
- Social disadvantage: people experiencing social isolation, persons
  experiencing discrimination (including specifically based on race or religion),
  as necessary any other protected characteristic as defined by the Equality
  Act 2010 (Ref 18-5) (age, disability, gender reassignment, marriage and civil
  partnership, pregnancy and maternity, race, religion or belief, sex, sexual
  orientation), gypsy and traveller groups, refugee and/or asylum seekers,
  non-English speakers, and those with low literacy or numeracy; and
- Geographic factors: people experiencing barriers in access to services or service provision, amenities, or facilities, people living in areas of high deprivation, and differences in urban versus rural challenges to access to services.
- 18.6.12 The health assessment also considered sensitive receptors such as schools, care homes, and healthcare facilities, which may be particularly vulnerable to change as a result of their occupants or users. The identification of these vulnerable groups and locations is furthermore supported by the technical assessments within **ES Volume 1 [EN010168/APP/6.1]** as appropriate.

#### **Sources of Information**

18.6.13 For assessment of baseline conditions with respect to human health, data has been gathered from a number of data sources to provide a holistic understanding of the baseline conditions in the Study Areas. Where this relies on baseline data collected in other technical chapters within **ES Volume 1** [EN010168/APP/6.1], these have been identified and summarised, with signposting to full detail provided. Information sources to be used specifically for human health, and not derived from other technical chapters, have been sourced from the below locations:



- 2021/2022 United Kingdom Census: Office for National Statistics (ONS) 2021:
- Department for Communities and Local Government (DCLG): Indices of Multiple Deprivation Map App – 2019;
- Office for Health Improvement and Disparities (OHID): Fingertips Public Health Data web tool – 2016-2025;
- Department for Work and Pensions (DWP) Stat-Xplore web tool 2024-2025; and
- Wiltshire Joint Strategic Needs Assessments and Joint Health and Wellbeing Strategy.
- 18.6.14 Please refer to Section 18.14 at the end of this chapter for a full list of references.

#### **Impact Assessment Methodology**

The sensitivity of all identified environmental receptors are described as high, medium, low, or very low, whilst the magnitude of impact on those receptors are described as high, medium, low, or negligible. Where an effect is identified, the likely duration, location and significance has been presented. The health effects have been assessed in the context of the baseline position, as well as the nature and context of the effect, taking account of the sensitivity of the identified receptor (i.e. the existing population and identified vulnerable/ priority groups).

#### Sensitivity of Receptors

18.6.16 The sensitivity of the receptors identified in this chapter are assessed by understanding measurable indicators of the receptor's present characteristics and considering this alongside the weighted importance of the receptor in local, regional, and national policy or strategic requirements together with professional judgement. To ensure a consistent approach across the human health receptors identified in this assessment, each receptor has been assessed against the criteria as set out in **Table 18-4** to determine its sensitivity. These criteria rely on those prescribed in ISEP Guide to: Determining Significance for Human Health in Environmental Impact Assessment (2022) (Ref 18-39). This determination of receptor sensitivity has been based on statistical analysis where appropriate or based on professional judgement of the qualitative aspects of the criteria being assessed.



Table 18-4: Sensitivity and Importance of the Identified Environmental Receptor

Sensitivity	Definition
High	Population or population groups with high levels of deprivation (including pockets of deprivation); reliance on shared resources (between the population and the project); existing wide inequalities between the most and least healthy; a community whose outlook is predominantly anxiety or concern; people who are prevented from undertaking daily activities; dependants; people with very poor health status; and/or people with a very low capacity to adapt.
Medium	Population or population groups with moderate levels of deprivation; few alternatives to shared resources; existing widening inequalities between the most and least healthy; a community whose outlook is predominantly uncertainty with some concern; people who are highly limited from undertaking daily activities; people providing or requiring a lot of care; people with poor health status; and/or people with a limited capacity to adapt.
Low	Population or population groups with low levels of deprivation; many alternatives to shared resources; existing narrowing inequalities between the most and least healthy; a community whose outlook is predominantly ambivalence with some concern; people who are slightly limited from undertaking daily activities; people providing or requiring some care; people with fair health status; and/or people with a high capacity to adapt.
Very low	Population or population groups with very low levels of deprivation; no shared resources; existing narrow inequalities between the most and least healthy; a community whose outlook is predominantly support with some concern; people who are not limited from undertaking daily activities; people who are independent (not a carer or dependant); people with good health status; and/or people with a very high capacity to adapt.

## **Magnitude of Impacts**

18.6.17 The methodology for determining the impact magnitude is described below and is based on the impacts of the Scheme subject to embedded human health mitigation. The magnitude of change has been used for either beneficial or adverse impacts. Where this assessment of impact magnitude to human health is reliant on assessment outcomes from other technical chapters within **ES Volume 1 [EN010168/APP/6.1]**, these are based on post-mitigation residual effects as reported in those technical chapters. The methodology used to determine the criteria for magnitude of health impacts as set out in **Table 18-5** is taken from the ISEP Guide to: Determining Significance for Human Health in Environmental Impact Assessment (2022) (Ref 18-39). These criteria rely on qualitative assessment and professional judgement to determine the magnitude of impacts to human health receptors.

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Table 18-5: Magnitude of Change for the Identified Environmental Receptor

Magnitude	Definition
High	High exposure or scale; long-term duration; continuous frequency; severity predominantly related to mortality or changes in morbidity (physical or mental health) for very severe illness/injury outcomes; majority of population affected; permanent change; substantial service quality implications.
Medium	Low exposure or medium scale; medium-term duration; frequent events; severity predominantly related to moderate changes in morbidity or major change in quality-of-life; large minority of population affected; gradual reversal; small service quality implications.
Low	Very low exposure or small scale; short-term duration; occasional events; severity predominantly related to minor change in morbidity or moderate change in quality-of-life; small minority of population affected; rapid reversal; slight service quality implications.
Negligible	Negligible exposure or scale; very short-term duration; one-off frequency; severity predominantly relates to a minor change in quality-of-life; very few people affected; immediate reversal once activity complete; no service quality implication.

## **Assessment of Significance**

- 18.6.18 The degree of significance of impacts, in respect of the assessment of human health environment, is determined using the matrix below in **Table 18-6**, taking into consideration both receptor sensitivity to change and magnitude of change to baseline conditions for each receptor.
- 18.6.19 Effects assessed to be major, major/moderate, moderate or moderate/minor are deemed to be significant in terms of EIA as in accordance with ISEP guidance (Ref 18-39). These are shaded in grey in **Table 18-6** below.

Table 18-6: Criteria for Assessing the Significance of Effects

Sensitivity	High	Medium	Low	Very Low	
Magnitude					
High	Major	Major/moderate	Moderate/minor	Minor/negligible	
Medium	Major/moderate	Moderate	Minor	Minor/negligible	
Low	Moderate/minor	Minor	Minor	Negligible	
Negligible	Minor/negligible	Minor/negligible	Negligible	Negligible	

18.6.20 The degree of significance of an effect can be described either as beneficial or adverse in nature, or neutral if there is no anticipated impact. Temporally, effects are described as being of short-, medium-, or long-term, based respectively on

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being experienced for: less than or equal to one year, one to five years, or move than five years. These together with the level of significance should be used to determine which likely significant effects from the Scheme require additional mitigation measures to be implemented in the design, construction, operation and maintenance, and decommissioning phases of the Scheme.

#### **18.7** Baseline Conditions

#### **Existing Baseline**

- 18.7.1 This section describes the baseline environmental characteristics for the Study Areas with specific reference to human health.
- The existing baseline conditions for population health reporting and service provision are predominantly derived from desk-based studies. Additional topic-specific information based on field-studies has been referred to where relevant chapters in ES Volume 1 [EN010168/APP/6.1]: Chapter 8: Landscape and Visual Impact Assessment, Chapter 11: Hydrology, Flood Risk and Drainage, Chapter 13: Transport and Access, Chapter 14: Noise and Vibration, and Chapter 15: Air Quality.
- 18.7.3 Extended details of baseline conditions relevant to human health are set out in Section 1.3 of **ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3]** and should be read alongside the following section below.

#### **Human Environment Baseline**

#### **Demography**

- 18.7.4 The 2021 Census (Ref 18-54) identifies a total population in the 2 km Study Area of approximately 55,100. The proportion of residents in the 2 km Study Area aged up to 15 years old is 17.9%. This is comparable to the Wider Baseline Study Area (Wiltshire), where the rate is 17.9%, higher than the regional rate for the South West (16.9%), but is lower than the rate for England and Wales of 18.5%.
- 18.7.5 Those aged 65 or above, form a slightly larger contingent in the 2 km Study Area (22.9%) than in the Wider Baseline Study Area (21.9%), albeit comparative with the rate across the South West (22.3%). The national rate of the population aged 65 and over is 18.6%.
- 18.7.6 Participants of the Census 2021 were most likely to self-assess their own health as 'very good', followed by 'good' health. The combined proportion of the population in the 2 km Study Area declaring they had 'bad' or 'very bad' health was 4.3%. This is similar to the Wider Baseline Study Area (4.2%), and notably lower than the proportion for the South West (5.1%) and England and Wales overall (5.2%) (Ref 18-55).



- The proportion of the population in the 2 km Study Area self-assessing that their day-to-day activities are 'limited a little' or 'limited a lot' by a long-term health condition or disability (i.e. qualify as 'disabled' under the Equality Act 2010 (Ref 18-5)) is 17.0% (Ref 18-56). As for self-assessed general health, this is slightly higher than the Wider Baseline Study Area (16.9%), and somewhat lower than the rate in the South West at 18.6%. The 2 km Study Area furthermore compares favourably to the national total for England and Wales of 17.5%.
- The proportion of the working age population (age 16-64) who are entitled to Personal Independence Payment (PIP) is published on a monthly basis by the Department for Work and Pensions. This data demonstrates the number of people who are eligible for financial support to improve quality of life and ability to work where limited by short and long-term illnesses and disabilities. The most recent data, for January 2025 demonstrates an eligibility rate of 7.6% in the 2 km Study Area. This is slightly higher than the eligibility rate in the Wider Baseline Study Area (7.1%), but considerably lower than the eligibility rate across the South West (at 9.0%), or England and Wales (9.7%) (Ref 18-57).

### **Deprivation**

- 18.7.9 The most recent data available on deprivation experienced in England is the Index of Multiple Deprivation (IMD) study from 2019 (Ref 18-58, Ref 18-59).
- 18.7.10 The 2 km Study Area covers a total of 34 LSOAs in northwest Wiltshire, covering a largely rural area with a substantial level of variance in deprivation. Overall deprivation in the 2 km Study Area, based on a weighted score of nine metrics or 'indices' of deprivation, is lower than across the Wider Baseline Study Area or England, with 9 of the 34 LSOAs being in the 50% most deprived areas in England. Of these, only three (Wiltshire 011F, 020B, and 022A), are in the 20% most deprived areas. No area in the 2 km Study Area is in the 10% most deprived areas in England.
- 18.7.11 With regard to domains of deprivation, those interrogated further are:
  - Health Deprivation and Disability, which measures the risk of premature death and the impairment of quality of life through poor physical or mental health;
  - Barriers to Housing and Services, which measures the physical (geographic) and financial accessibility of housing and local services; and
  - Living Environment Deprivation, which measures the quality of the local environment. The indicators fall into two sub-domains. The 'indoors' living environment measures the quality of housing; while the 'outdoors' living environment contains measures of air quality and road traffic accidents.
- 18.7.12 The 2 km Study Area performs well in regard to health deprivation and disability, with only four of 34 LSOAs in the 50% most deprived areas in England.

Wiltshire 011F, and 022A are also in the 20% most deprived neighbourhood areas in England with regard to health deprivation and disability.

- 18.7.13 The index of barriers to housing and services is one of few areas that the 2 km Study Area, and the Wider Baseline Study Area more generally, perform poorer than national expectation, albeit with substantial inequality experienced across the 2 km Study Area. A total of four LSOAs fall within the most deprived 10% of neighbourhoods in England, largely due to rural aspect, low housing stock, and distance to local services. A total of 11 of the LSOAs fall within the most deprived 20% of areas.
- 18.7.14 The 2 km Study Area generally performs well with regard to living environment, with two LSOAs falling within the 10% most deprived areas in England, and four of the 34 LSOAs falling within the 20% most deprived areas. As a generalisation, this indicates housing quality is average to good, as is the quality of the outdoor environment in these areas.
- 18.7.15 A comparative breakdown by area of the proportion of LSOAs in the most deprived decile (10%), most deprived quintile (20%) and most deprived half (50%) of neighbourhood areas in England, with regard to overall deprivation, health deprivation and disability, barriers to housing and services, and quality of living environment, are set out in Table 1 in ES Volume 3, Appendix 18-3: Human Health Summary of Non-Significant Effects [EN010168/APP/6.3].

## **Health Profile and Strategic Priorities**

18.7.16 Data on a number of health indicators is available at the local authority level, and ward level from the Office of Health Inequalities and Disparities (OHID) through their online public access data tools. A summary of key findings is presented in the section below.

#### Wider Baseline Study Area Data

18.7.17 General health indicators at the local authority level, shown in **Table 18-7** below, demonstrate that the Wider Baseline Study Area performs generally better than both the regional and national level with respect of life expectancy, inequality in life expectancy, and under-75 mortality, but has a much greater rate of emergency hospital admissions for intentional self-harm (Ref 18-60). Life expectancy inequality is based on the Slope Index of Inequality.

Table 18-7: General Health Profile of Wider Baseline Study Area, the South West, and England

Health Indicator	Data period	Wider Baseline Study Area	South West	England
Male life expectancy	2021- 2023	81.0	80.1	79.1

Health Indicator	Data period	Wider Baseline Study Area	South West	England
Female life expectancy	2021- 2023	84.6	84.0	83.1
Inequality in life expectancy at birth (Male) (years)	2021- 2023	4.7	8.0	10.5
Inequality in life expectancy at birth (Female) (years)	2021- 2023	3.6	5.9	8.3
Under-75 mortality rate from all causes (per 100,000)	2023	278.6	306.3	341.6
Suicide rate (per 100,000)	2021- 2023	10.6	12.2	10.7
Emergency hospital admissions for intentional self-harm (per 100,000)	2023/ 2024	215.2	174.6	117.0

## Electoral Ward Level Data

- 18.7.18 At the electoral ward level, OHID provides more detailed information, of which key health indicators have been selected for wards that cover the 2 km Study Area (Ref 18-61) and detailed in full in Section 1.3 and Table 2 in **ES Volume 3**, **Appendix 18-2: Human Health Legislation, Policy and Guidance** [EN010168/APP/6.3]. This information has been supplemented by Local Insights Reports (Ref 18-62) for each ward in the 2 km Study Area, and Community Area reports (Ref 18-63, Ref 18-64, Ref 18-65, Ref 18-66) as available through Wiltshire Council's JSNA dashboard (Ref 18-14).
- 18.7.19 Overall, life expectancy at birth for both males and females across electoral wards in the 2 km Study Area is similar to or higher (median life expectancy of 81.4 for males, and 84.4 for females) than the average in the Wider Baseline Study Area (81.0 for male, 84.6 for female) and national average for England (79.1 for male, 83.1 for female). Similarly, the 2 km Study Area overall performs well against the Wider Baseline Study Area and national average with lower deaths of all causes for under-75s, lower deaths from respiratory diseases at all ages, and lower deaths from causes considered preventable, when considered against the expect age-related rates for the population.
- 18.7.20 The estimated prevalence of depression (in the year 2022-2023) among the population in the 2 km Study Area ranges from 8.0%-13.4% by ward, with a median rate of 11.4%. This is consistent with the rate across the Wider Baseline Study Area (11.9%), and lower than the average for England (13.4%). This indicates that there are potentially lower rates of poor mental health among communities in the 2 km Study Area than would be expected.



- 18.7.21 Rates of emergency hospital admissions for intentional self-harm across the 2 km Study Area vary considerably, indicating significant variance in mental health prevalence and access to support and care. Overall, the 2 km Study Area performs worse with respect to standardised mortality rate (SMR) than national rates (123.4 compared to a national benchmark if 100), although performs better than rates across the Wider Baseline Study Area (137.0 (SMR)). This is indicative of greater instances of poorer mental health and associated risk taking behaviour.
- 18.7.22 Modelled estimates for prevalence of regular smoking in 15 year olds, available through OHID based on 2014 estimates and national datasets from NHS England (Ref 18-67), indicate the 2 km Study Area (6.1%) and Wider Baseline Study Area (5.8%) perform somewhat worse than the national average (5.4%) of the 15 year old population engaging in regular smoking.
- 18.7.23 The prevalence of child obesity in children in Year 6, as measured across a 3-year reference period, is overall lower (17.1%) across the 2 km Study Area than the Wider Baseline Study Area (19.4%) and the national average rates (22.7%).
- 18.7.24 Within the 2 km Study Area, the Community Needs Index Score ranges significantly from 39.0 (Sherston ward) to 112.4 (Chippenham Sheldon) where a higher score shows a greater level of need for community wellbeing. This range shows significant diversity in community wellbeing across the 2 km Study Area, and is indicative of substantial inequalities between different communities. The median score for the 2 km Study Area of 74.4 is slightly lower than the average for the Wider Baseline Study Area of 79.0. These are both notably higher than the average score for England of 64.4.
- 18.7.25 In Wiltshire, the Joint Local Health and Wellbeing Strategy 2023 2032 (Ref 18-15) sets out the relevant health priorities for the Wider Baseline Study Area, based on four guiding themes:
  - Improving social mobility and tackling inequalities;
  - Prevention and early intervention;
  - · Localisation and connecting with communities; and
  - Integration and working together.
- 18.7.26 The Joint Local Health and Wellbeing Strategy identifies adapting to an aging population, with a substantial projected increase in population over 65 years old, and addressing existing health inequalities between those in the most and least deprived areas of the Wider Baseline Study Area are fundamental to improving health and care outcomes in the near future.
- 18.7.27 The strategy thereafter goes on to demonstrate the need case for change, and the Health and Wellbeing Board's 'vision' for change by setting out its targeted achievements under each of its guiding themes.



#### **Social Environment Baseline**

## Housing

- 18.7.28 The existing baseline conditions relating to housing and accommodation are set out in Section 16.7 of **ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1]**. A summary of the baseline conditions relevant to human health are set out below.
  - As of 2024, Wiltshire (the Wider Baseline Study Area for human health) has an affordability ratio<sup>1</sup> of 8.9, substantively greater than the affordability threshold of 5.0;
  - From 2023-2028 there is a notable projected undersupply of market housing in the Wider Baseline Study Area;
  - Based on 2021 data, an estimated 170 private rental dwellings are vacant in the 2 km Study Area for human health and therefore may be available for temporary occupation by construction workers;
  - The 'Study Area for Socio-economics, Tourism and Recreation', which
    covers a 20 km area offset from the Scheme, hosts an estimated 25,700
    serviced accommodation rooms, of which a minimum of 10% (2,570) are
    estimated to be available for use by temporary workers on the Scheme.
- 18.7.29 Sectors of the population most sensitive to changes to the housing and accommodation environment are those living in locations where access to and affordability of suitable housing is poorest, and sub-population groups including those in unsuitable, cramped and/or temporary accommodation, and people experiencing long-term homelessness.

#### **Open Space, Leisure and Play**

- 18.7.30 The existing baseline conditions relating to open space, leisure and play are set out in Section 16.7 of **ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1]**. A summary of the baseline conditions relevant to human health are set out below.
- 18.7.31 The 2 km Study Area is host to a well-connected network of more than 500 PRoWs, permissive recreational routes, and unsurfaced highways, which are important for inter-community connectivity, and for personal activity and wellbeing. A total of 120 PRoWs and maintained recreational routes have been assessed for likely effects. The 2 km Study Area also boasts a large number of leisure and recreation facilities, equestrian centres, and recreational play and

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<sup>&</sup>lt;sup>1</sup> The affordability ratio is a measure of how affordable the average house value in an area is in comparison to the average full-time salary. The threshold for housing to be considerable is 5.0, i.e. the median average house value is five times the median average full-time workplace earnings in an area. By contrast, within the Wider Baseline Study Area, the average house value is 8.9 times the average earnings in the same area.



- informal sport areas in local villages and settlements for children, of which a total of 56 have been assessed as likely to experience some level of effect from the Scheme.
- 18.7.32 Overall open space, leisure and play facilities in the 2 km Study Area provide a range of opportunities and recreation activities, catering for a large range of ages and levels of mobility and fitness.
- 18.7.33 Baseline conditions in respect to open space, leisure and play spaces (as they correspond to tourism and recreation facilities) are tabulated in full in Section 2 of ES Volume 3, Appendix 16-2: Tourism and Recreation Receptor Tables [EN010168/APP/6.3].
- 18.7.34 Sectors of the population most sensitive to changes to conditions relating to open space, leisure and play are young people, and adults who experience limited activity either as a result of lifestyle, or as a result of a long-term disability.

#### **Transport Modes, Access and Connections**

- The existing baseline conditions relating to transport modes, access and connections are set out in Section 13.7 of ES Volume 1, Chapter 13:

  Transport and Access [EN010168/APP/6.1]. A summary of the baseline conditions relevant to human health are set out below. The 'Study Area for Transport and Access' is defined by the Scheme extents, and the local and strategic highway networks likely to be used for construction, operation and maintenance, and decommissioning vehicle movements, as shown in ES Volume 2, Figures 13-1: Study Area: Solar PV Sites to 13-2: Study Area: Cable Route Corridor [EN010168/APP/6.2].
- The density of PRoWs and permissive recreational routes in the Study Area (for transport and access), of which a total of 51 have been assessed in **ES Volume 1, Chapter 13: Transport and Access [EN010168/APP/6.1]**, provides good levels of connectivity between communities, and provide a good level of access to the countryside and between settlements for non-vehicular travel. Roadside or segregated infrastructure is limited in the Study Area for Transport and Access, particularly outside built-up areas.
- 18.7.37 The communities surrounding the Order Limits host a modest number of bus services operated by Faresaver Buses, Stagecoach (West), Coachstyle, and by FromeBus. Rail services operate from Chippenham and Melksham stations.
- 18.7.38 Further detail of travel infrastructure is provided at Section 1.3 of **ES Volume 3**, **Appendix 18-2: Human Health Legislation, Policy and Guidance** [EN010168/APP/6.3].
- 18.7.39 An assessment of road and pedestrian safety within the Study Area for Transport and Access has been undertaken as set out in **ES Volume 1**,



Chapter 13: Transport and Access [EN010168/APP/6.1] which indicates that generally, accidents are spread throughout the Study Area. Across B-roads the severity of accidents is generally higher than for local roads as would be expected given the nature of these roads, the level of traffic that they accommodate and the extents they cover within the Study Area for Transport and Access.

#### **Community Identity, Culture, Resilience and Influence**

- 18.7.40 The 2 km Study Area covers a number of settlements, and as such a number of localised communities. Many of these communities are centred around villages with a historic core with key community buildings or spaces such as churches or areas of greenery and parkland that provide a community focal point, even where gradual population growth, and built development has increased the sizes of these settlements. Community culture is also likely to be influenced by access and connection to the countryside as a result of the largely agricultural landscape and provision of PRoWs to access it, particularly in contrast to the proximity to large urban areas within the south of the 2 km Study Area (Chippenham, Corsham, and Melksham). The existing baseline conditions relating to landscape and visual impacts are set out in ES Volume 1, Chapter 8: Landscape and Visual Impact Assessment [EN010168/APP/6.1]. As such, the sensitivity of the villages and immediate surroundings to the Solar PV Sites (Alderton, Corston, Hullavington, Lower Stanton St Quintin, Luckington, Norton, Rodbourne, and Sherston) are likely to be of greatest sensitivity. This is due to their proximity to the Scheme, and the perception of changes to their landscape setting and visual identity. Villages and communities adjacent to the Cable Route Corridor are also likely to be of somewhat increased sensitivity to changes in access to the countryside where cable construction works alter the use and enjoyment of PRoWs.
- 18.7.41 The 2 km Study Area is host to multiple existing solar PV developments with less than 50 MW installed capacity. Grid infrastructure is primarily defined by the National Grid substations at Melksham and overhead transmission lines spanning radially away from it. Nationally Significant Infrastructure Project scale energy infrastructure is therefore relatively novel in this area and as such the local population is likely to be of a heightened sensitivity to changes in their perception of resilience and influence as a result of the Scheme, due to fewer of them having prior experience of DCO applications and how they can participate in the decision-making process. The level of engagement with the communities ahead of DCO submission has been set out in the Consultation Report [EN010168/APP/5.1] and its supporting appendices [EN010168/APP/5.2]. This demonstrates that the Applicant has sought to ensure communities have been engaged and have had a directive role in shaping the Scheme through their contributions to early engagement events and providing direct design and procedural comments during statutory consultation that have been incorporated into the DCO submission. The sentiment and level of engagement across the



communities affected by the Scheme is therefore likely to vary considerably, and a result, the level of sensitivity to further changes in resilience and influence is likely to be no less than medium.

#### **Economic Environment Baseline**

#### **Education and Training**

- The existing baseline conditions relating to education and training are set out in Section 16.7 of **ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1]**, under the heading "Skills and Qualification". A summary of the baseline conditions relevant to human health are set out below:
  - The proportion of 16-64 year olds achieving no qualifications in the Wider Baseline Study Area is 4.2%, compared to 4.7% in the South West, and 6.8% in the UK;
  - Attainment of equivalent of a national vocational qualification (NVQ) Level 4 and higher qualifications has an overall rate of about 47.5% in the Wider Baseline Study Area, compared to 46.1% in the South West region, and 47.2% across the UK; and
  - Urban populations within the Wider Baseline Study Area for human health are also identified as more likely to experience greater inequalities in suitable education and skills attainment, with pockets of towns including Chippenham and Melksham (within the 2 km Study Area) more likely than the national average to be deprived of suitable education and skills attainment.
- 18.7.43 Members of the population with poor qualification attainment will be most sensitive to changes the provision of education and training.

#### **Employment and Income**

- 18.7.44 The existing baseline conditions relating to employment and income are set out in Section 16.7 of ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1], over a larger Study Area than that for human health. A summary of the baseline conditions relevant to human health specifically within the Wider Baseline Study Area (for human health) are set out below further detail is set out in Section 1.3 of ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3].
  - As of December 2024, the Wider Baseline Study Area has an economic activity rate within members of the working age (16-64-year-old) population of 85.1%;



- For the year up to December 2024, the unemployment rate in the Wider Baseline Study Area was 3.1%; and
- For residents living within the Wider Baseline Study Area, the approximated median annual gross salary for those in full-time work (in 2024) was £36,800, while for people working within the Wider Baseline Study Area, the approximated median annual gross salary for full-time employment (in 2024) was £35,200.
- 18.7.45 Changes to baseline conditions relating to employment and income are most likely to affect sub-populations whose employment is likely to be directly affected by the Scheme, such as agricultural workers and those working in tourism-dependant industries, those who are deprived of access to suitable employment opportunities and to suitable wages, and those who are unemployed.
- 18.7.46 As of March 2025, the proportion of 16-64 year olds claiming either Jobseekers Allowance (Ref 18-68), or claiming Universal Credit and 'searching for work' (Ref 18-69, Ref 18-70), in the 2 km Study Area was 2.4%. This is comparable to the claimant rate across the Wider Baseline Study Area was 2.3-2.4%, lower than the regional rate across the South West (2.8-2.9%), and significantly lower than the national rate for England and Wales (4.2-4.3%).

## **Bio-Physical Environment Baseline**

18.7.47 The bio-physical environment consists of the aspects of a person's or people's environmental surroundings that determines their health as a result of biological, chemical, and physical factors. Impacts to the bio-physical environment as a result of the Scheme are as a result of changes to these factors, such as impacts resulting from air and water pollution, and increased noise and vibration. These impacts can lead to effects on physical and mental health and on long-term wellbeing.

## **Climate Change Mitigation and Adaptation**

- The existing baseline conditions relating to climate change, mitigation, and adaptation, which have been assessed on a global scale and therefore have no local Study Area, are set out in **ES Volume 1, Chapter 7: Climate Change** [EN010168/APP/6.1]. A summary of the baseline conditions relevant to human health are set out below.
  - The current use of the Solar PV Sites and the Cable Route Corridor predominantly consists of arable land, managed trees and hedgerows. As a conservative approach, the baseline activities on site will be assumed to be generating zero emissions of CO<sub>2</sub>e;
  - Historic climate data for the 30-year climate period of 1991 2020 from Yeovilton Met Office Station (the nearest station to the Scheme for which this



data is available) will provide the current baseline for the Climate Change Risk Review; and

- It is anticipated that the future baseline will be different from the current present-day baseline, due to changes in climate. For this assessment, UK Climate Projections 2018 probabilistic projections have been provided for 30-year periods from 2020 – 2099.
- 18.7.49 Vulnerable populations to climate change include those with long-term cardiovascular and respiratory illnesses or disabilities who are at greater risk due to reduced air quality, elderly and very young children who are at greater risk of heatstroke, people living in poor quality housing, and people living in locations susceptible to natural disasters, such as floods and landslips exacerbated by climate change.

#### **Air Quality**

- 18.7.50 The existing baseline conditions relating to air quality are set out in Section 15.7 of **ES Volume 1, Chapter 15: Air Quality [EN010168/APP/6.1]**. A summary of the baseline conditions relevant to human health are set out below. The 'Study Area for Air Quality' is defined in accordance with the IAQM construction dust guidance as up to 250 m from the Order Limits, and up to 50 m from the route(s) used by construction vehicles on the public highway up to 250 m from site entrances. No additional or more extensive Study Area for vehicular or onsite machinery emissions has been screened as being required.
  - There are eight Air Quality Management Area (AQMAs) in Wiltshire which were declared for exceedance of the NO<sub>2</sub> annual mean Air Quality Strategy (AQS) Objective. The closest is AQMA No. 4 located approximately 8 km southwest from the Cable Route Corridor in Bradford-on-Avon;
  - The 2024 Air Quality Annual Status Report produced by Wiltshire Council stated that during 2023, only one exceedance event was recorded (within the Bradford-on-Avon AQMA) which exceeded the annual mean AQS objective for NO<sub>2</sub> by a marginal amount;
  - The closest monitoring site to the Scheme is diffusion tube ID 35, located on the A350 approximately 0.6 km southeast of the southern boundary of the Scheme. The 2023 annual average NO<sub>2</sub> concentration measured at this site was 22.2 μg/m³, well below the AQS objective of 40 μg/m³; and
  - No exceedances of the NO<sub>2</sub> 1-hour AQS Objective of 200 μg/m<sup>3</sup> and no exceedances of particulate matter AQS objectives were monitored by Wiltshire Council over the period 2019 to 2023.
- 18.7.51 Sub-population groups living in areas with higher background concentrations of air pollutants are of greatest vulnerability to any increased pollution arising as a



result of the Scheme. This applies predominantly to babies and young children, elderly people, and anyone with long-term respiratory illnesses.

#### **Water Quality or Availability**

- The existing baseline conditions relating to water quality or availability are set out in **ES Volume 1**, **Chapter 11**: **Hydrology**, **Flood Risk and Drainage** [**EN010168/APP/6.1**]. A summary of the baseline conditions relevant to human health are set out below. The 'Study Area for Hydrology and Flood Risk' applied for this section is the Solar PV Sites and Cable Route Corridor.
- 18.7.53 The baseline assessment of fluvial (river) and pluvial (surface water) flood risk identifies that the majority of the Solar PV Sites are at low risk of flooding. Small sections of Lime Down C, D and E are at increased risk of fluvial flooding associated with Gauze Brook, and the unnamed tributary of the River Avon passing Gabriels Well, both of which are Main Rivers. All of the Solar PV Sites contain small areas of increased pluvial flood risk associated with drains, flow paths and topographical depressions.
- 18.7.54 The Cable Route Corridor is predominantly at low risk of fluvial and very low risk of pluvial flooding, but contains specific locations of increased risk, especially where crossing watercourses that form various tributaries of the River Avon.
- 18.7.55 In absence of the Scheme, it is considered there will be no significant change to the future baseline conditions of the Study Area for Hydrology and Flood Risk. However, the potential increase in flood risk due to climate change, particularly in relation to increased rainfall, is assessed.
- 18.7.56 With regard to human health, the level of risk of fluvial and pluvial flooding is also conservatively applied to on-site workers and to mobilisation of pollutants from the Solar PV Sites to watercourses.
- 18.7.57 Parts of the population reliant on groundwater or reservoir water for consumption and bathing are most likely to be vulnerable to reduced water quality as a result of pollutants or runoff from the Scheme.

## **Land Quality**

- The existing baseline conditions relating to land quality (including ground contamination) are set out in **ES Volume 1, Chapter 19: Ground Conditions** [EN010168/APP/6.1] and its supporting appendices. The 'Study Area for Ground Conditions' is defined as all areas within the Order Limits and a 500 m search offset therefrom. A summary of the baseline conditions relevant to human health are set out below:
  - Contamination events have been recorded near to Lime Down A and D, with potential unknown filled ground in Lime Down C;



- Former quarrying activity has been recorded within Lime Down B and in multiple parts of the Cable Route Corridor, with additional historic mining activity found in proximity to Lime Down C and E;
- Licenced groundwater abstraction wells for potable water are located along and near to the Cable Route Corridor, operated by Wessex Water Services Ltd. Additional licenced groundwater abstraction wells are located near to Lime Down D, while unknown groundwater extraction evidenced by wells in Lime Down C may also be in or have been in use historically;
- The Solar PV Sites are generally of negligible-low risk of geohazards with moderate risk of shrink-swell, additional hazards such as landslides are up to moderate risk near railway cuttings and embankments, compressible ground near waterways, and any areas of made ground associated with previous land uses; and
- Risk of unexploded ordnance (UXO) is recorded as low, but may be present as a result of military training and activity in the area.
- 18.7.59 In absence of the Scheme, it is considered there will be no significant changes to the future baseline conditions of the Study Area for Ground Conditions, although historic mining activity in the southwest section of the Cable Route Corridor may deteriorate as a result of dissolution processes and subsidence.
- 18.7.60 As a result of industry standards, procedures and guidance for workers, and the application of embedded good practice measures to limit land quality effects occurring beyond the Order Limits, it is considered that both construction workers and members of the public are of medium sensitivity to changes in land quality and ground conditions.

#### **Noise and Vibration**

- The existing baseline conditions relating to noise and vibrations are set out in **ES Volume 1, Chapter 14: Noise and Vibration [EN010168/APP/6.1]**. A summary of the baseline conditions relevant to human health are set out below. The Study Area for 'Noise and Vibration' is defined as the area within the Order Limits, and within a 500 m offset from the Order Limits extents along with the construction routes, as agreed with Wiltshire Council.
- 18.7.62 The baseline noise environment has been established following noise surveys undertaken at a total of 29 monitoring stations across the Study Area for noise and vibration.
- 18.7.63 A number of subsections of the population may be more vulnerable to noise and vibration, principally those living closest to noise and vibration sources, those where the contrast between existing baseline and projected noise and vibrations is greatest, but additionally those with sensory sensitivities and



impairments to whom additional noise impacts would have a disproportionate effect on amenity.

#### **Institutional and Built Environment Baseline**

#### **Health and Social Care Services**

- The 5 km Study Area (for assessing primary healthcare facilities) contains eleven General Practice (GP) healthcare facilities and two community hospitals, which provide the primary level of healthcare to the general population, and have (as of April 2025) a significantly lower than average number of patients per full-time equivalent (FTE) GP (Ref 18-71, Ref 18-72). Those nearest the Solar PV Sites are located in Sherston and Yatton Keynell. Dental clinics and pharmacies are only located within larger urban areas in the 5 km Study Area (Chippenham, Corsham, Malmesbury, and Melksham).
- 18.7.65 The 2 km Study Area contains at least seven social and residential care facilities, providing a range of full-time residential care and supported-living care for elderly and disabled residents. All of the identified social and residential care facilities lie within 2 km of the Cable Route Corridor, with none within 2 km of the Solar PV Sites.
- Hospitals and emergency healthcare facilities, providing specialist services, urgent care, and Accident and Emergency Departments can be accessed at the Great Western Hospital in Swindon, Royal United Hospital in Bath, and Southmead Hospital in Bristol (Ref 18-71). Provision of Accident and Emergency Care data from March 2025 indicated that the Accident and Emergency (AandE) (or Urgent Care) departments at hospitals servicing the Wider Baseline Study Area generally have poorer performance by quality indicators for incomplete treatment, and waiting times for treatment and departure compared to the average expectations for England (Ref 18-73).
- 18.7.67 A full list of identified health and social care services has been provided in Section 1.3 of ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3], and are shown in ES Volume 2, Figure 18-2: Health and Social Care Facilities and Figure 18-3: Hospitals and Emergency Healthcare Facilities [EN010168/APP/6.2].

# **Future Baseline**

- 18.7.68 This section considers those changes to the baseline conditions, as described above, that might occur in the absence of the Scheme and during the time period over which the Scheme would be in place. The future baseline scenarios are set out in ES Volume 1, Chapter 6: Environmental Impact Assessment Methodology [EN010168/APP/6.1].
- 18.7.69 The sensitivity of the population to changes to community resilience and influence is highly dependent on the level of community experience of the DCO



process, and the community understanding of the extent to which they can influence the DCO decision-making process and implementation of large-scale infrastructure projects. The future baseline therefore must consider two scenarios: one in which the Scheme is not consented, and a hypothetical one in which the Scheme was never applied for.

- 18.7.70 In the first scenario, the future baseline to changes to community resilience and influence is the same as has been assessed at Paragraphs 18.7.40 and 18.7.41. In this scenario, it is important to define that the baseline conditions for the assessment of community resilience and influence at the point of the Scheme's construction will be informed to a large extent by the scope of preapplication consultation and ongoing engagement being undertaken as part of the DCO process. Whilst this does not explicitly form part of the assessment, good standards of consultation (as set out in the Consultation Report Appendices [EN010168/APP/5.2] (including the Statement of Community Consultation)) will have helped give the community sufficient opportunity to engage with the Scheme's design, mitigation requirements, and their eventual implementation. This therefore sets the future conditions for how informed, resilient and influential the community perceives itself ahead of the construction, operation and maintenance, and decommissioning of the Scheme. As a result, it is anticipated that the sensitivity of the population to future changes in resilience and influence will be medium.
- 18.7.71 In the hypothetical future baseline scenario in which there was no Scheme, the sensitivity of the population to changes to community resilience and influence is likely to be high. This is anticipated as there would not be the level of community experience of the DCO process. Resultantly, the community would likely have poorer understanding of the amount which they can influence the outcomes of the DCO decision-making process and eventual implementation of a large-scale infrastructure project.
- In the absence of the Scheme, it is considered that with projected population increase, there is likely to be a demographic shift towards an aging population. This is anticipated to bring forward human health impacts as a result of increased age-related illnesses, greater health and social care requirements, and a proportional reduction in working-age people to support and maintain societal infrastructure. These factors are likely to result in a future population baseline in the assessment timeframe for the Scheme's decommissioning phase that is of greater sensitivity to changes to human health conditions. Therefore, the future baseline will be considered in assessing the sensitivity of future human health receptors conditions during the Scheme's operation and maintenance and decommissioning phases.

# **18.8** Potential Impacts

18.8.1 Embedded mitigation measures being incorporated into the design and construction of the Scheme are set out in Section 18.9 below. Prior to the

implementation of any mitigation (embedded or additional), the Scheme has the potential to affect human health, both positively or negatively, during construction, operation and maintenance, and decommissioning phases.

18.8.2 Drawing on the 2024 EIA Scoping Report (Ref 18-1), the following determinants of health, scoped into this assessment, and the relevant source to receptor pathways to potential impacts are set out in **Table 18-8** below:

Table 18-8: Source to Receptor Pathway Links for Health Determinants

Health Determinant	Source	Pathway	Receptor	Scheme Stage
Housing	Potential temporary changes in access to temporary and rental accommodation arising from the need to accommodate incoming temporary construction and decommissioning workforce	Potential adverse effects on suitable access to housing or temporary accommodation	People reliant on rental or temporary accommodation, or at risk of homelessness	Construction, Decommissioning
Open space, leisure and play  Transport modes, access and connectivity	Potential temporary or permanent closures, diversions or amenity impacts on public rights of way (PRoW) or impacts on the local road network which impact cycling, equestrian or pedestrian users	Potential adverse effects on active travel journeys, and on recreation, including from fear and intimidation both of which could impact physical and mental health and wellbeing	People using PRoWs and the local road network for commuting, travel, and recreation	Construction, Operation and Maintenance, Decommissioning
Open space, leisure and play	Potential temporary or permanent reduction in accessibility to, or amenity impacts on the use and enjoyment of, open spaces and established leisure and recreation facilities	Potential adverse effects on physical activity and enjoyment of recreational facilities which could impact physical and mental health and wellbeing	People accessing open spaces and using leisure and recreation facilities	Construction, Operation and Maintenance, Decommissioning

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Health Determinant	Source	Pathway	Receptor	Scheme Stage
Transport modes, access and connectivity	Potential temporary or permanent increases in traffic on the local road network	Potential adverse impacts on road safety, which could impact human health	Vehicular users of the local road network	Construction, Operation and Maintenance, Decommissioning
Community identity, culture, resilience and influence	Potential temporary or permanent changes to community identity as a result of landscape and visual impacts on surroundings	Potential adverse impacts on visual amenity and enjoyment of the surroundings and environment, which could impact wellbeing	People living in communities nearby to the Scheme	Construction, Operation and Maintenance, Decommissioning
Education and training	Potential temporary or permanent changes in employment and training opportunities, directly related to the Scheme, indirectly as a result of Scheme impacts, or within the wider supply chain	Potential beneficial or adverse personal and economic impacts arising from changes in employment, training and income opportunities for those working on the Scheme, affected by the Scheme, or within the wider supply chain, which could impact human health	People who could potentially benefit from or be disadvantaged by changes to direct employment and skills training opportunities generated by or affected by the Scheme, or through the wider supply chain	Construction, Operation and Maintenance, Decommissioning
Climate change mitigation and adaptation	Potential permanent changes to Greenhouse Gas (GHG) emissions	Potential beneficial human health impacts as a result of reduced GHG emissions over the lifetime of the Scheme	All people	Operation and Maintenance
Air quality	Potential temporary changes in local air quality including increased dust and particulate matter emissions	Potential adverse human health impacts arising from increased exposure to dust and particulate matter	People at risk of direct and indirect air quality impacts, including those with respiratory illnesses	Construction, Operation and Maintenance, Decommissioning



Health Determinant	Source	Pathway	Receptor	Scheme Stage
	arising from construction, potential fires during operation, and from decommissioning activities relating to the Scheme	emissions arising from the Scheme		
Water quality or availability	Potential temporary changes to water quality due to runoff or contamination from onsite activities, including from firewater runoff	Potential adverse human health impacts arising from reduced water quality, cleanliness, or as a result of contaminants entering the drinking water supply	People likely to be at risk of possible contamination to drinking water	Construction, Operation and Maintenance, Decommissioning
Land quality	Potential acute or long-term exposure to contaminants whether from previous Site uses, or from the Scheme	Potential adverse human health impacts arising from contact with contaminants associated with the Scheme	People likely to be at risk of contact with onsite contaminants, including site workers and vulnerable future users	Construction, Operation and Maintenance, Decommissioning
Noise and vibration	Potential temporary or permanent changes in noise and vibration levels arising from the Scheme	Potential adverse physical and mental human health impacts arising from increased exposure to noise and vibration arising from the Scheme	People at risk of direct and indirect noise and vibration impacts, including those with sensory disabilities	Construction, Operation and Maintenance, Decommissioning
Health and social care services	Potential temporary changes in access to health and social care services arising from incoming temporary construction and decommissioning workforce	Potential adverse effects on accessibility of primary and social healthcare services as a result of increased demand, which could impact on physical and	People using healthcare services likely to be affected by incoming temporary workers	Construction, Decommissioning

Health Determinant	Source	Pathway	Receptor	Scheme Stage
		mental health and wellbeing		
Wider societal infrastructure and resources	Potential temporary changes to wider societal infrastructure and resources	Potential beneficial effects on human health as a result of the Scheme's contributions towards economic development, climate change mitigation, and protection or enhancement of the natural environment, which could impact on physical and mental health and wellbeing	All people	Operation and Maintenance

The impacts of the Scheme on these determinants of human health are assessed using professional judgement, good practice, and drawing on other assessments within the ES. The assessment of human health effects is made with respect of residual effects to receptors as identified in other assessments in ES Volume 1 [EN010168/APP/6.1].

# 18.9 Embedded Mitigation

- The Scheme has been designed, as far as practicable, to avoid and reduce impacts and effects on human health through the process of embedding measures into the design. In addition, how the Scheme is constructed, operated and maintained, and decommissioned would be controlled in order to manage and minimise potential environmental effects (required as a result of legislative requirements and/or standard sectoral practices).
- The following embedded mitigation measures have been incorporated into the Scheme design with outline proposals and locations to be submitted with the DCO application. These measures are proposed to be secured through requirements in the **Draft DCO [EN010168/APP/3.1]** with reference to the following documents:
  - Design Principles and Parameters (DPP) [EN010168/APP/7.4];
  - Outline Construction Environmental Management Plan (CEMP) [EN010168/APP/7.12];



- Outline Operational Environmental Management Plan (OEMP) [EN010168/APP/7.13];
- Outline Decommissioning Strategy [EN010168/APP/7.14];
- Outline Public Rights of Way Management Plan (PRoWMP) [EN010168/APP/7.17];
- Outline Landscape and Ecological Management Plan (LEMP) [EN010168/APP/7.18];
- Outline Skills, Supply Chain and Employment Plan (SSCEP) [EN010168/APP/7.20]:
- Outline Battery Safety Management Plan (BSMP) [EN010168/APP/7.21]; and
- Outline Construction Traffic Management Plan (CTMP) [EN010168/APP/7.22].

#### Construction

## **Embedded Mitigation**

- 18.9.3 The layout and configuration of the Scheme have been designed to include measures to minimise likely significant effects on human health receptors during the Scheme's construction phase.
- 18.9.4 Construction is anticipated to take place across an approximate two-year period. The Outline CEMP [EN010168/APP/7.12] includes mitigation measures for the construction schedule to retain appropriate flexibility to be phased and staggered, where practicable, across the Solar PV Sites and Cable Route Corridor to reduce impacts on environmental receptors. With specific regard to human health receptors, this should be utilised where practicable to reduce the intensity of peak construction activities on the Scheme, and redistribute where activities are taking place to minimise peak human health impacts in any single location.
- 18.9.5 The embedded visual mitigation secured in the Outline CEMP [EN010168/APP/7.12] and as set out in the DPP [EN010168/APP/7.4] includes designing the layout of the Sites to provide suitable buffers from roads, PRoWs, recreation facilities, and neighbouring buildings and land uses. These measures seek to reduce the likely effects on the desirability of these receptors for leisure and play, and local perceptions of community identity.
- 18.9.6 During construction, the Outline CEMP [EN010168/APP/7.12] commits to appointing a Community Liaison Manager, to whom any comments, concerns or complaints about the development of the Scheme can be raised, either directly by members of the public, or via elected representatives on parish or town



councils, councillors, and Members of Parliament. This role will be used to continue open channels of communication between the community and the operators of the Scheme as set up during the application and DCO process, and through the discharge of requirements process. In doing so, this will mitigate impacts on community identity and influence by allowing the community to continue to be involved in the development of their local environment as the Scheme is constructed.

# Mitigation Directed by Other Technical Disciplines

- The Scheme also includes topic specific mitigation measures relevant to human health as set out in other chapters of the ES. These are set out through the Outline CEMP [EN010168/APP/7.12] and secured by requirement in the Draft DCO [EN010168/APP/3.1]. These are provided in ES Volume 1 [EN010168/APP/6.1] at:
  - Section 7.9 of Chapter 7: Climate Change;
  - Sections 8.9 and 8.11 of Chapter 8: Landscape and Visual Impact Assessment;
  - Sections 11.9 and 11.11 of Chapter 11: Hydrology, Flood Risk and Drainage;
  - Sections 13.9 and 13.11 of Chapter 13: Transport and Access;
  - Sections 14.9 and 14.11 of **Chapter 14: Noise and Vibration**;
  - Section 15.9 of Chapter 15: Air Quality, and Volume 3, Appendix 15-1 [EN010168/APP/6.3];
  - Sections 16.9 and 16.11 of Chapter 16: Socio-economics, Tourism and Recreation; and
  - Sections 19.10 and 19.12 of Chapter 19: Ground Conditions.

#### **Enhancement Measures**

As set out in Section 16.11 of **ES Volume 1**, **Chapter 16**: **Socio-economics**, **Tourism and Recreation [EN010168/APP/6.1]**, the implementation of enhancement measures will help to improve the level of local education and skills, skills and qualification attainment, and increase local recruitment, procurement and employment, including through additional potential targeted measures for agricultural workers to be supported in moving to diversified agricultural practices, as secured in the **Outline SSCEP [EN010168/APP/7.20]**.



## **Operation and Maintenance**

## **Embedded Mitigation**

- As during construction, the embedded visual mitigation includes designing the layout of the Solar PV Sites, 132 kV and 400 kV Substations, and BESS Area to include suitable offsets and buffers from roads, PRoWs, recreational sport and youth play facilities and neighbouring buildings as set out in the **DPP** [EN010168/APP/7.4]. Furthermore, as proposed landscape planting matures over the lifetime of the Scheme, this will enhance the enjoyment of the landscape for residents and visitors to the area. These measures seek to reduce the impacts on the desirability of these receptors for leisure and play, and local perceptions of community identity.
- 18.9.10 Furthermore, the appointment of a Community Liaison Manager shall be implemented through the **Outline OEMP [EN010168/APP/7.13]** as a temporary facilitator of communications between communities and the Scheme's operators during the peak replacement scenario. During long-term general operation and maintenance activities, a full-time member of the Scheme's operation and maintenance team should also be in dedicated 'community contact' position whereby they are responsible for monitoring community interaction to ensure community concerns are heard, responded to and suitably addressed throughout the duration of the Scheme's operation and maintenance phase. Details of the community contact within the operation and maintenance team should be made available to members of the public through elected representatives or online, and kept up-to-date at all times. This will therefore reduce the likely significance of effect on human health in the communities most affected by the Scheme.

## **Mitigation Directed by Other Technical Disciplines**

- The Scheme also includes topic specific mitigation measures relevant to human health as set out in other chapters of the ES. These are set out through the Outline OEMP [EN010168/APP/7.13], which is secured by requirement in the Draft DCO [EN010168/APP/3.1]. This includes, where necessary, the continuation or reintroduction of good practice measures as set out for construction.
- 18.9.12 These are provided in **ES Volume 1 [EN010168/APP/6.1]**:
  - Section 7.9 of Chapter 7: Climate Change;
  - Sections 8.9 and 8.11 of Chapter 8: Landscape and Visual Impact Assessment;
  - Sections 11.9 and 11.11 of Chapter 11: Hydrology, Flood Risk and Drainage;



- Sections 13.9 and 13.11 of Chapter 13: Transport and Access;
- Section 14.9 of Chapter 14: Noise and Vibration;
- Section 15.9 of Chapter 15: Air Quality and Volume 3, Appendix 15-2 [EN010168/APP/6.3];
- Sections 16.9 and 16.11 of **Chapter 16: Socio-economics, Tourism and Recreation**; and
- Section 19.10 of Chapter 19: Ground Conditions.

#### **Enhancement Measures**

- 18.9.13 The Scheme features enhancements to existing PRoWs and the provision of new non-vehicular permissive paths where it has been shown that there is a local need or appetite for such a route to be included as part of the Scheme. The opportunity for members of the public to comment on potential connections they wished to see added or improved was made available through the statutory consultation process. Those that have been implemented as part of the Scheme design will enhance connectivity in the local area and are anticipated to help to improve recreation in the immediate vicinity, secondarily benefitting local population health and wellbeing in the long-term. These enhancement measures include the ability for the removal of existing barriers such as stiles and gates to provide better access to users. PRoWs and permissive paths will also be planted with wildflower and native grass mixes, with hedgerows encouraged to grow and fill out thin or gapped section. Whilst primarily this is for ecological and landscape improvements, these measures also seek to enhance the user experience along these routes, contributing to improved health and wellbeing benefit to their use.
- As set out in Section 16.11 of ES Volume 1, Chapter 16: Socio-economics, Tourism and Recreation [EN010168/APP/6.1], the implementation of long-term enhancement measures throughout the operational lifetime of the Scheme to improve the level of local education and skills, skills and qualification attainment, and increase local recruitment, procurement and employment, including continuing measures for agricultural workers to be supported in moving to diversified agricultural practices, is to be set out through the Outline SSCEP [EN010168/APP/7.20]. This will also include for periods of onsite infrastructure replacement.

#### **Decommissioning**

## **Embedded Mitigation**

18.9.15 As during construction, the implementation of a dedicated Community Liaison Manager will be secured through the **Outline Decommissioning Strategy** 



[EN010168/APP/7.14] to provide a community contact to address and respond to concerns, anxieties, or complaints by the community.

## **Mitigation Directed by Other Technical Disciplines**

- The Scheme also includes topic specific embedded mitigation measures relevant to human health as set out in other chapters of the ES. These are set out through the **Outline Decommissioning Strategy [EN010168/APP/7.14]**, and are secured by requirement in the **Draft DCO [EN010168/APP/3.1]**.
- 18.9.17 These are provided in **ES Volume 1 [EN010168/APP/6.1]** at:
  - Section 7.9 of Chapter 7: Climate Change;
  - Sections 11.9 and 11.11 of Chapter 11: Hydrology, Flood Risk and Drainage;
  - Sections 13.9 and 13.11of Chapter 13: Transport and Access;
  - Sections 14.9 and 14.11 of Chapter 14: Noise and Vibration;
  - Section 15.9 of Chapter 15: Air Quality;
  - Section 16.9 and 16.11 of Chapter 16: Socio-economics, Tourism and Recreation; and
  - Sections 19.10 and 19.12 of Chapter 19: Ground Conditions.

#### **Enhancement Measures**

As set out in Section 16.11 of ES Volume 1, Chapter 16: Socio-economics, Tourism and Recreation [EN010168/APP/6.1], the implementation of enhancement measures (as described for during construction) will help to improve the level of local education and skills, skills and qualification attainment, and increase local recruitment, procurement and employment during the Scheme's decommissioning. These measures are to be set out through the Outline SSCEP [EN010168/APP/7.20] and Outline Decommissioning Strategy [EN010168/APP/7.14].

## **Monitoring**

The Outline CEMP [EN010168/APP/7.12], Outline OEMP [EN010168/APP/7.13], and Outline Decommissioning Strategy [EN010168/APP/7.14] will include monitoring requirements to ensure that relevant mitigation measures put in place at each respective stage of the Scheme's lifetime are being suitably adopted or adhered to. No additional monitoring requirements for embedded mitigation measures are anticipated to be necessary.



# 18.10 Assessment of Likely Impacts and Effects

- 18.10.1 This section considers the potential impacts outlined in Section 18.8 and, taking into account the committed mitigation measures as detailed in Section 18.9, assesses the potential for the Scheme to generate effects using the methodology as detailed in Section 18.6 subject to assumptions and limitations set out in Section 18.4, as assessed across the geographic Study Areas set out in Section 18.5.
- 18.10.2 The assessment of likely significant effects is supported by the additional extended details set out in Section 1.4 in **Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3]**, which should be read alongside this section.

#### **Construction**

- 18.10.3 The construction of the Scheme is estimated for the purpose of EIA to be undertaken over a two year period. Subject to the grant of consent of the DCO, the earliest construction may start is 2027 and would run until 2029. The Scheme retains flexibility for construction across the Solar PV Sites and Cable Route Corridor to be undertaken in parallel or as a phased development.
- 18.10.4 To ensure the robustness of this assessment in evaluating the worst-case scenario, the construction of Solar PV Sites (including the BESS Area and substation locations) and Cable Route Corridor in parallel has been assessed. As set out in Section 18.5, assessment of Highway Improvement Areas has not been included as the likely effects relating to these parts of the Scheme are extremely spatially and temporally limited, and as such are anticipated to be negligible or imperceivable with respect to likely human health effects.

#### **Social Environment**

#### Housing

- 18.10.5 Effects of the Scheme on access to housing during construction have been considered in Section 16.10 of Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1]. The chapter identifies a short-to medium-term temporary minor adverse effect on access to temporary accommodation (private rental properties) to accommodate the peak inbound construction workforce requiring accommodation in the Study Area for socio-economics, tourism and recreation.
- 18.10.6 Access to appropriate housing is a determinant of health across both physical health, and mental health and wellbeing. Physical health may be affected by having suitable quality housing, potential overcrowding, and lack of access to suitable outdoor space. These then also impact upon mental health and the ability for people to maintain a suitable quality of life. Access to affordable housing is also a key determinant as this is a key pathway for people to improve



their quality of life by being able to afford suitable accommodation. As a result, those most vulnerable to changes to the availability of housing are those currently in unsuitable (such as overcrowding or unsafe) housing, and those in or at risk of homelessness. **ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1]** identifies that the overall population is of **medium** sensitivity to changes in access to housing as a result of existing barriers to accessing housing and affordability of housing in the Study Area for socio-economics, tourism and recreation.

18.10.7 For assessing the likely magnitude of impact on human health, a worst-case assumption is that a negligible negative impact on access to accommodation will have a resultant negligible negative impact on human health. Therefore, the effect on human health with regard to access to housing is anticipated to be a medium-term temporary minor/negligible adverse effect. This is not a significant effect.

#### Open Space, Leisure and Play

- 18.10.8 **ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1]** identifies that the construction of the Scheme will have an adverse effect on sports and recreation facilities ranging from medium-term temporary minor adverse effects, up to short- to medium-term temporary moderate adverse effects at specific receptors.
- 18.10.9 Impacts on open space, leisure and play as determinants of health are driven by reduced activity affecting physical health, while reduced enjoyment of recreational facilities (as a result of visual impact, or disruption to use) can reduce the mental health benefits associated with leisure and play. Some open space, leisure and play areas may be affected by the influence of multiple parts of the Scheme, while some communities may have multiple open space, leisure and play facilities affected within their community area. Both these factors are considered in how impacts on open space, leisure and play have been assessed. The types of open space, leisure and play facilities likely to be affected by the Scheme, and the extent to which they are projected to be impacted is discussed in more detail in Section 1.4 of ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3]. Overall, the magnitude of impact to open space, leisure and play is considered to be low, and negative.
- 18.10.10 Children and adults with limited activity are most vulnerable to changes to open space, leisure and play and therefore at highest sensitivity to changes. Existing baseline conditions demonstrate that, whilst vulnerable groups are more sensitive to change, the overall population is not disproportionately more sensitive than the Wider Baseline Study Area or national expectation. As such, the sensitivity of the overall population to changes to open space, leisure and play is **low**.



18.10.11 Resultantly, the impact on human health with regard to open space, leisure and play is therefore anticipated to be a medium-term temporary **minor adverse effect** (not significant).

## Transport Modes, Access and Connections

- 18.10.12 The ability for people to access public transport and move around the Study Area for Transport and Access is related to health and wellbeing primarily through ability to access healthcare, services and employment, and to ensure social connections and isolation are not adversely affected.
- 18.10.13 The transport assessment set out in **ES Volume 1, Chapter 13: Transport and Access [EN010168/APP/6.1]** assesses the local PRoW and highway network. The assessment of residual transport and access effects concludes that the construction effects on the local highway and PRoW network will be temporary negligible to minor adverse effects, which are not significant.
- 18.10.14 With regard to physical health and wellbeing, this therefore constitutes a negligible magnitude impact to human health in the Study Area for Transport and Access as a result of reduced levels of access to public transport and connections to local services arising from the Scheme. As a **medium** sensitivity receptor, this constitutes a medium-term temporary **negligible adverse effect** (not significant)
- 18.10.15 As a result of low amounts of infrastructure for non-motorised users on highways, impacts on amenity from fear and intimidation from HGV traffic is likely to impact upon social connectivity and isolation, and a perceived reduction in user safety. As a result, up to low magnitude impacts (as determined by residual minor adverse effects as described in Table 13-44 in ES Volume 1, Chapter 13: Transport and Access [EN010168/APP/6.1]) upon a medium sensitivity population is likely to result in up to a medium-term temporary minor adverse effect (not significant) to human health.

## Community Identity, Culture, Resilience and Influence

18.10.16 Sense of community is a multi-faceted wider determinant of human health and is influenced by a number of factors that primarily impact upon mental health and wellbeing. This assessment considers community identity and culture, and resilience and influence as two distinct receptors. Community identity and culture is based largely on a community's demographic profile, its history, sense of place and purpose, and its cohesion. Community resilience and influence is based on a community's knowledge and skill base, social capital, and the level of understanding or availability to influence place-making and changes to community structure.

## Community Identity and Culture

18.10.17 Community identity and culture with respect to people, and sense of place is likely to be of an overall **low** sensitivity to change across the 2 km Study Area.



This is as a result of the 2 km Study Area consisting of a range of communities from rural hamlets up to suburbs of large towns across a diverse socioeconomic and demographic spectrum. Those areas particularly sensitive to change due to the more rural character of the settlements and surroundings, and their more immediate proximity to the Scheme, as set out in Paragraphs 18.7.40-18.7.41, are of **medium** sensitivity.

- The inbound construction workforce of the Scheme is anticipated to generate 18.10.18 temporary, short-term, and negligible impact to resident population growth in affected communities, without a positive or negative bias, albeit with likely beneficial effects on to resident age and health demographics. This is set out in ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1]. The respective level of effect to community identity with respect to localised net migration during construction is therefore considered to be neutral. Based on the likely landscape and visual impacts set out in ES Volume 1, Chapter 8: Landscape and Visual Impact Assessment [EN010168/APP/6.1], and the importance of the rurality of the area to members of the public, the impact of the Scheme on community identity and culture and thus on the mental wellbeing of the population is likely to be negative and low in magnitude. This is anticipated in respect of feelings of the attractiveness of the area and community pride in its place. This impact is anticipated to be greatest during the construction phase, before gradually reducing following construction as mitigation planting matures, the use of onsite permissive paths becomes more widespread, and as ecological mitigation and its biodiversity gains becomes more obvious to local observers.
- 18.10.19 The resultant effect on community identity and culture during construction is therefore anticipated to be a medium- to long-term temporary **minor adverse effect** (not significant) both in the communities identified in Paragraphs 18.7.40-18.7.41, and across the 2 km Study Area.

## Community Resilience and Influence

- 18.10.20 As set out in Paragraph 18.7.69, the future baseline level of sensitivity in the community's resilience and influence is informed by engagement with the Scheme through the DCO process. As a result, the sensitivity of the population in communities within the 2 km Study Area to changes in resilience and influence is anticipated to be **medium**.
- 18.10.21 A community's distance from the Scheme, and the part of the Scheme which impacts upon a community most, will vary the amount to which communities perceive the level to which their resilience and influence is being affected during the progression of construction works. Information on the construction programme will be made available to affected communities ahead of construction commencing. The Community Liaison Manager will also be available for community dialogue throughout the construction process, as defined in Paragraph 18.9.6. Resultantly, there is likely to be no more than a low



magnitude impact to community resilience and influence within the 2 km Study Area and thus on population mental health and wellbeing. The temporal scope of this impact is likely to extend from prior to construction until a few years after construction has completed, particularly where there is a delay before mitigation or community enhancement measures matures sufficiently (such as landscaping and ecological benefits). The likely human health effect as a result of changes to community resilience and influence during construction is therefore no greater than a medium- to long-term temporary **minor adverse effect** (not significant).

#### **Economic Environment**

#### Education and Training

- 18.10.22 Likely residual effects subject to enhancement measures on education and training during construction have been considered in the assessment in Sections 16.10 and 16.11 of ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1]. The chapter identifies that enhancement measures can lead to a medium-term temporary moderate-minor beneficial effect on skills and qualification attainment in the Study Area for Socio-economics, Tourism and Recreation.
- 18.10.23 Education and training are considered as determinants of health due to the beneficial impact on both physical and mental health and wellbeing as a result of direct ability to find and sustain work, and indirectly to improved socioeconomic status and quality of life associated with access to better income as a result of suitable education and training. Overall, the magnitude of impact to education and training as a human health consideration resulting from the Scheme is considered to be low, and positive.
- 18.10.24 People with existing limitations in access to suitable education and training are of a high sensitivity to changes in access to education and training. Existing baseline conditions specific to the Wider Baseline Study Area demonstrate that the sensitivity of the overall population to changes in access to education and training is **medium**, due to good overall levels of qualification attainment, albeit with identified levels of inequality.
- 18.10.25 Resultantly, the impact on human health with regard to education and training during construction is anticipated to be a medium-term temporary **minor beneficial effect** (not significant).

## **Employment and Income**

18.10.26 Likely effects on employment and income during construction have been considered in Section 16.10 of ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1]. The chapter identifies a medium-term temporary negligible beneficial effect on the labour force, and



- resultantly on economic prosperity and income in the Study Area for socioeconomics, tourism and recreation.
- 18.10.27 Employment and income are considered as determinants of health due to the beneficial impact on both physical and mental health and wellbeing as a result of sustain and improved socio-economic status and quality of life associated with suitable access to employment and income. Overall, the magnitude of the impact of the Scheme on employment and income is considered to be negligible, and positive.
- 18.10.28 People with existing limitations in access to suitable employment and income are of a medium sensitivity to changes to these determinants. Existing baseline conditions demonstrate that in the Wider Baseline Study Area, the levels of economic activity and unemployment are favourable compared to national trends, while income is comparable to national levels. Although there are geographic pockets within the Wider Baseline Study Area in which there are greater inequalities in access to employment and income, and therefore these populations may be more vulnerable, the sensitivity of the overall population is low.
- 18.10.29 Resultantly, the impact on human health with regard to employment and income during construction is anticipated to be a no greater than a medium-term temporary **negligible beneficial effect** (not significant).

## **Bio-physical Environment**

## Air Quality

- 18.10.30 Section 15.10 of **ES Volume 1, Chapter 15: Air Quality [EN010168/APP/6.1]** sets out the assessment of the likely effects on air quality as a result of the construction of the Scheme subject to implementation of dust and air quality mitigation and control measures. The assessment identifies that the residual effects from fugitive construction dust, construction vehicle emissions, and emissions from on-site plant (NRMM) are not anticipated to be significant.
- 18.10.31 Effects on air quality are most likely to impact children, and adults with preexisting cardiovascular diseases or long-term disabilities impacting breathing (such as asthma). Furthermore, those nearest the Solar PV Sites and Cable Route Corridor, construction access points, and construction routes are most likely to experience effects. Table 3 in ES Volume 3, Appendix 18-2: Human Health Legislation, Policy and Guidance [EN010168/APP/6.3] demonstrates that deaths due to respiratory illnesses are lower in the 2 km Study Area than the national average, although there are some wards within the 2 km Study Area of higher rates. This indicates that due to the presence of substantial inequalities, the health profile of the 2 km Study Area is at least of medium sensitivity to air quality impacts.



18.10.32 As a result of embedded dust and emissions mitigation measures to minimise air quality impacts on human health, the construction of the Scheme is likely to have no greater than a low negative magnitude impact on human health. As a result of the population's sensitivity to air quality impacts, this is therefore likely to result in no more than a medium-term temporary **minor adverse effect** (not significant).

# Water Quality or Availability

- 18.10.33 Section 11.12 of ES Volume 1, Chapter 11: Hydrology, Flood Risk and Drainage [EN010168/APP/6.1] sets out that there are no likely significant residual effects on the hydrological environment as a result of the Scheme subject to implementation of embedded design and additional flood risk and hydrology specific mitigation measures. The greatest significance of effects assessed are minor adverse effect. For construction, the most likely impacts relevant to human health relate to rapid surface water runoff from a temporary increase in impermeable area, silt-laden runoff affecting local water quality, and spillage and leaks of pollutants from construction activities including breakout from horizontal directional drilling (HDD) works and from increased highways use. These impacts have the potential to impact on-site workers, people living downstream of the Sites next to affected watercourses, and people using affected water bodies for recreation (such as the River Avon). Water requirements for construction activities such as dust suppression, welfare facilities, and some construction processes are likely to be limited in quantity overall, and unlikely to place pressure on local water resources. As such, no additional assessment of water availability has been undertaken.
- 18.10.34 Onsite workers are anticipated to be of **medium** sensitivity to hydrological risks as they will be suitably trained for these events but most likely to be directly affected. Health effects on residents or offsite receptors are anticipated to be as a result of flooding risk, and contamination of potable water supplies and recreational bathing locations. Residents reliant on groundwater for potable water are likely to be of greatest sensitivity to effects, with the overall sensitivity of the population to adverse health effects anticipated to be **medium**.
- 18.10.35 Subject to implementation of embedded and additional mitigation measures to protect both onsite workers and offsite receptors from flooding and water quality impacts, the magnitude of impacts on human health is anticipated to range from negligible to low. As such, the overall anticipated effect on human health as a result of changes to water quality is up to a medium-term temporary **minor** adverse effect (not significant).

## **Land Quality**

18.10.36 **ES Volume 1, Chapter 19: Ground Conditions [EN010168/APP/6.1]** identifies that, subject to implementation of a suitable Discovery and Inspection Strategy, construction workers, are not anticipated to experience any significant adverse



effects from contamination during construction activities on the Scheme. UXO may cause up to a minor adverse effect on human health subject to detailed UXO study and ground investigation. Subject to implementation of additional mitigation measures set out in Section 19.12 of **ES Volume 1, Chapter 19: Ground Conditions [EN010168/APP/6.1]** to confirm the presence of any unrecorded mine workings or shafts within the Cable Route Corridor, the assessment finds no significant residual effects for onsite construction workers. As a result, the likely magnitude of human health impacts to construction workers is a low and negative.

- 18.10.37 With regard to human health in the general population of the Study Area for Ground Conditions, the key risks associated with contamination are dermal contact, ingestion and inhalation risks to physical health to those immediately adjacent to the Solar PV Sites and Cable Route Corridor, while contamination of controlled waters is a substantial risk for nearby residents, visitors and workers in or downstream of the Study Area for Ground Conditions reliant on groundwater abstraction for potable water. As the risk of contamination to water sources the population in the surrounding area is reliant upon is considered to not be significant, for human health impact of this is considered to be of up to a low magnitude.
- 18.10.38 As suitable mitigation measures are identified (as set out in Section 19.10 and 19.12 of ES Volume 1, Chapter 19: Ground Conditions

  [EN010168/APP/6.1]), the sensitivity of both the construction workforce and the overall population of the Study Area for Ground Conditions to human health risks from contamination is interpreted as being medium. Resultantly, the potential effects to human health from changes to ground conditions and contamination during construction are considered to be a medium-term temporary to long-term minor adverse effect (not significant).

#### Noise and Vibration

- 18.10.39 Noise and vibration effects associated with the Scheme's construction activities are likely to be localised to individual receptors nearest to noise and vibration sources on the Solar PV Sites, Cable Route Corridor and access routes. When considering the overall effect of noise and vibration across the entire Study Area (for noise and vibration), there is unlikely to be more than a resultant **negligible adverse effect** to human health overall.
- 18.10.40 That notwithstanding, Section 14.10 of **ES Volume 1, Chapter 14: Noise and Vibration [EN010168/APP/6.1]** sets out that individual receptors may experience up to high (short-term) levels of construction noise and non-significant levels of vibrations from construction works on the Solar PV Sites and from cable installation works in the Cable Route Corridor. Individual receptors notably residential dwellings are identified to be of high sensitivity to noise and vibration, with vulnerable people such as those with sensory impairments, mental disabilities, and those less able to move around or leave



their properties being of **high** sensitivity to noise and vibration impacts, as these may result in reduced amenity, distress, anxiety, and longer-term impacts on wellbeing. Subject to implementation of additional mitigation, such as noise and vibration reduction, or giving due notice and explanation of noisy works to nearby residents, as set out in **ES Volume 1, Chapter 14: Noise and Vibration** [**EN010168/APP/6.1]**, the residual noise and vibration effect is not anticipated to be significant. In respect of how this effect correlates to human health impacts, a non-significant effect corresponds to no more than a negligible magnitude of impact to the highest sensitivity receptors. Therefore, the resultant effect to human health for those at highest risk is anticipated to be up to a short- to medium-term **minor/negligible adverse effect** (not significant) on their health and wellbeing.

#### **Institutional and Built Environment**

## Health and Social Care Services

- 18.10.41 As set out previously at Paragraph 18.10.18 in regard to community identity, the inbound construction workforce of the Scheme is anticipated to generate temporary, short-term, and negligible impact to resident population growth. This is likely to bring a negligible magnitude increase in demand for primary healthcare services across the 5 km Study Area where workers attempt to access healthcare in proximity to where they are working. Applying this worst-case approach, the greatest level of impact within the relevant Study Areas is anticipated to be up to a short-term temporary peak low magnitude impact on primary and emergency care services identified in the 5 km Study Area on ES Volume 2, Figure 18-2: Health and Social Care Facilities and Figure 18-3: Hospitals and Emergency Healthcare Facilities [EN010168/APP/6.2].
- 18.10.42 Members of the population most reliant on primary and emergency healthcare services due to long-term illnesses, disabilities, and age-related illnesses are of a high sensitivity to changes to availability of access to primary and emergency healthcare services as a result of increased demand. Whilst **Table 18-7** above, Table 2 in **ES Volume 3**, **Appendix 18-2**: **Human Health Legislation**, **Policy**, **and Guidance [EN010168/APP/6.3]**, and lower than average self-reporting of 'bad health' (see Paragraph 18.7.6) indicate that the general population across the 2 km Study Area and Wider Baseline Study Area themselves are likely to be largely resilient to changes in primary and emergency healthcare access as a result of generally good health and good access to primary healthcare services, the wider healthcare system itself is more vulnerable to increased demand for emergency access, therefore demonstrating an overall **medium** sensitivity to changes to healthcare service access overall.
- 18.10.43 As a worst case scenario, the greatest level of induced impact on primary and emergency healthcare services within the 5 km Study Area is likely therefore to have a **minor adverse effect** (not significant) on human health as a result of



increased demand on healthcare services and subsequent decrease in accessibility to existing service users during the construction phase.

18.10.44 As set out in Paragraph 18.7.65, the 2 km Study Area contains at least seven identified social and residential care facilities, providing on site residential care for elderly and disabled residents and supported living to those with additional care needs. The Scheme is not anticipated to increase the number of people requiring social and residential care. Existing users of social and residential healthcare services are likely to be of **medium** sensitivity to changes in their surrounding environment, community identity, culture, resilience and influence (see Paragraphs 18.10.16-18.10.21). Due to the distance between identified existing social and residential care facilities and the Solar PV Sites and Cable Route Corridor, impacts to residents in such facilities and the ability for those facilities to provide that care, are anticipated to be no more than low in magnitude. Resultantly, the greatest level of effect to these receptors is a medium-term temporary **minor adverse effect** (not significant).

# **Operation and Maintenance**

- 18.10.45 For the purposes of assessment, it has been assumed that the Scheme will commence operation in 2029. The operational life of the Scheme is anticipated to be no more than 60 years and decommissioning is therefore estimated to commence no later than 2089. A peak replacement scenario, consisting of the replacement of all onsite Solar PV Panels and BESS Batteries during the Scheme's operational lifetime, over a worst-case 12-month working period, has been assessed as a discrete event representing a worst-case scenario. Maintenance and replacement in the form of ad hoc replacement of defective Scheme components has not been assessed separately as the likely effects are anticipated to be minimal and significantly lower than those during the peak replacement scenario.
- 18.10.46 During the Scheme's operational lifetime, outside replacement peaks, none of the operation and maintenance workforce are to be permanently posted onsite, resulting in no long-term demand for temporary accommodation space or additional healthcare services within the Wider Baseline Study Area.
- 18.10.47 During peak replacement works, the inbound temporary workforce peak is anticipated to be approximately 40% of that during construction. As a result, the magnitude of impacts on the social and institutional and built environment is likely to be notably smaller than during construction. Baseline social environment and institutional and built environment conditions during peak replacement works are likely to be somewhat different to existing baseline conditions, largely as a result of gradual changes to population demography and healthcare requirements. Whilst this is likely to create additional resourcing requirements for societal and healthcare services, these changes are not anticipated to be great enough to increase the designation of population sensitivity. This therefore limits the potential for any likely significant effects with



regard to access to accommodation and housing, or to healthcare services, hence these matters being scoped out of assessment for the operation and maintenance phase of the Scheme.

#### **Social Environment**

## Open Space, Leisure and Play

- 18.10.48 As during construction, impacts on open space, leisure and play as determinants of health are driven by reduced activity affecting physical health, while reduced enjoyment of recreational facilities (as a result of visual impact, or disruption to use) can reduce the mental health benefits associated with leisure and play. The Scheme may generate additive impacts, particularly where multiple leisure and play receptors are affected in a similar area. Overall, the magnitude of impact to open space, leisure and play is considered to be negligible and adverse, based on the residual effects to recreational facilities assessed in ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1] and as individually assessed in Section 3 of ES Volume 3, Appendix 16-2: Tourism and Recreation Receptor Tables [EN010168/APP/6.3].
- 18.10.49 In an area where, as summarised in Paragraph 18.10.10, the overall population is considered to be of **low** sensitivity to changes, the impact on human health with regard to open space, leisure and play is resultantly anticipated to be a long-term **negligible adverse effect** (not significant).
- 18.10.50 The peak replacement scenario may cause greater impacts on some individual open spaces, and leisure and play facilities, however this is a short-term impact and is not anticipated to increase the overall effect on open space, leisure and play in the 2 km Study Area for human health. Therefore, the effect during the peak replacement scenario is also a (short-term temporary) **negligible adverse effect**. This is therefore not a significant effect on human health with respect to open space, leisure and play at any point during the Scheme's operation and maintenance phase.

## Community Identity, Culture, Resilience and Influence

## Community Identity and Culture

18.10.51 As stated for construction, the sensitivity of communities to changes in the character of their surroundings and impacts on their sense of community is low across the 2 km Study Area and up to **medium** sensitivity in the communities identified in Paragraph 18.10.17. This is because these communities are the most likely to experience visual impacts and changes in the character of their surroundings, either from direct visual impacts on settlements, and on visual and landscape changes experienced while using PRoWs and transport links around and between the Solar PV Sites. Communities that were affected by the installation of the Cable Route Corridor during construction will not be affected



- during operation and maintenance or replacement, as the Grid Connection Cables are not anticipated to need any more than ad hoc maintenance works during the Scheme's operational lifetime.
- 18.10.52 The operation and maintenance of the Scheme is anticipated to bring no greater than a peak short-term, temporary negligible impact magnitude to community population or demography, solely during the peak replacement scenario.
- 18.10.53 Based on the likely residual landscape and visual effects set out in ES Volume 1, Chapter 8: Landscape and Visual Impact Assessment [EN010168/APP/6.1], and the gradual reduction of early remnant effects from construction (as discussed in Paragraph 18.10.18), the Scheme is likely to generate up to a negligible negative magnitude of impact on community identity and culture during its operational lifetime. This is based on maturation of landscape and ecological mitigation and enhancement, and the use of onsite permissive paths becoming more widespread, helping to mitigate negative feelings of changes to the attractiveness of the area and community pride in its place, and thus on the mental wellbeing of the population. The peak replacement scenario for infrastructure on the Solar PV Sites is not anticipated to change sentiments with respect to community identity and culture due to the short-term nature of any additional impact and these impacts being considered in the full context of the Scheme already being in place.
- 18.10.54 The resultant effect on community identity and culture during the operational lifetime of the Scheme is therefore anticipated to be a long-term minor/negligible adverse effect in the communities closest to the Scheme, and a long-term negligible adverse effect elsewhere in the 2 km Study Area. The replacement of infrastructure on the Scheme is not anticipated to create any additional short or medium-term effects of any greater significance than the long-term effects on community identity and culture. None of these assessed effects are significant in nature.

# Community Resilience and Influence

- 18.10.55 The level of sensitivity in the community's resilience and influence is governed by the availability for further influence and engagement through operational lifetime of the Scheme and is therefore no less than **medium**.
- 18.10.56 During the Scheme's operational lifetime, the continued availability of a community contact (and during the peak replacement scenario a dedicated Community Liaison Manager) will mitigate community anxieties by providing a continued dialogue between communities and the Scheme's operators. This is set out in the Outline OEMP [EN010168/APP/7.13], secured by requirement in the Draft DCO [EN010168/APP/3.1]. Communities located closest to Scheme, specifically the Solar PV Sites, are most likely to perceive effects on their resilience and influence during periods of notable change. Effects are therefore likely to be greatest during the peak replacement scenario, where changes to



onsite conditions and procedures may result in perception of reduced ability for community stakeholders to influence or engage with the Applicant and site operators. As a result, the magnitude of impact on community resilience and influence over the lifetime of the Scheme is likely to be negligible overall with a short-term peak of no greater than low magnitude impact. Therefore, the likely effect on human health from changes to community resilience and influence is a long-term **minor/negligible adverse effect** during the operational lifetime of the Scheme, with a short-term temporary **minor adverse effect** (not significant) during the peak replacement scenario.

#### **Economic Environment**

#### Education and Training

- 18.10.57 Likely residual effects on education and training during operation and maintenance have been assessed in Section 16.10 and 16.11 of ES Volume 1, Chapter 16: Socio-Economics, Tourism and Recreation [EN010168/APP/6.1]. The assessment therein identifies, no more than a long-term minor beneficial effect on skills and qualification attainment in the Study Area for Socio-Economics, Tourism and Recreation during the Scheme's operational lifetime. As a result of enhancement measures, peak replacement works may also generate improved short-term minor beneficial effects.
- 18.10.58 Overall, the magnitude of impact to education and training is considered to be negligible, and positive, with this impact being long-term. People with existing limitations in access to suitable education and training are of a high sensitivity. Existing baseline conditions, as summarised in Paragraph 18.10.24 demonstrate that the sensitivity of the overall population to changes is **medium**.
- 18.10.59 Resultantly, the impact on human health with regard to education and training during operation and maintenance is anticipated to be a long-term **minor/negligible beneficial effect** (not significant), including during the peak replacement scenario.

#### Employment and Income

18.10.60 Likely effects on employment and income during operation and maintenance have been assessed in ES Volume 1, Chapter 16: Socio-Economics,

Tourism and Recreation [EN010168/APP/6.1]. The chapter identifies that with additional enhancement to be set out in the Outline SSCEP

[EN010168/APP/7.20], an overall long-term negligible adverse effect on the labour force, but a resultant long-term minor beneficial effect on economic prosperity and income are anticipated in the Wider Baseline Study Area as a result of changes to the long-term employment profile. During peak replacement activities, there are anticipated to be short-term minor beneficial effects to both economic activity and employment, and local economy and prosperity (as socio-economics, tourism and recreation receptors).

- 18.10.61 As there are both beneficial and adverse contributing factors towards employment and income in the Wider Baseline Study Area, the overall effect on human health is likely to be neutral. Notwithstanding this, the worst-case effect will be to those who are likely to experience loss of employment as a result of the Scheme, potentially with reduced access to employment over the lifetime of the Scheme. These people are of a **medium** sensitivity to change, and as a result may experience a worst case long-term **minor adverse effect** (not significant) to human health.
- 18.10.62 Those benefiting from employment on the Scheme during peak replacement scenario may also resultantly experience a short-term temporary **negligible beneficial effect** (not significant) to human health as a result of access to employment and increased income and prosperity.

# **Bio-physical Environment**

Climate Change Mitigation and Adaptation

- 18.10.63 **ES Volume 1, Chapter 7: Climate Change [EN010168/APP/6.1]** estimates that over the operational lifetime of the Scheme, the quantum of electricity generated is approximated to be 365,000-438,000MWh per annum. The Scheme is likely to substantially reduce the quantum of greenhouse gas emissions associated with energy production in the UK. The assessment in **ES Volume 1, Chapter 7: Climate Change [EN010168/APP/6.1]** anticipates that the Scheme is likely to have a long-term significant beneficial effect to climate change mitigation.
- 18.10.64 With regard to human health, the Scheme is likely to benefit human health as a result of decreasing risk from future climate change events, and increasing the national adaptability to climate change going forward. The Scheme alone is not likely to make a significant direct contribution to improving human health outcomes, and instead should be seen as part of a wider movement to improve health outcomes from improved climate change mitigation and resilience. Although there are vulnerable sections of the population to climate change impacts, particularly from heat and increased flooding, the overall population sensitivity is likely to be **low**, due to existing baseline health conditions and access to suitable resilience measures. As a result, the Scheme is anticipated to contribute a long-term **negligible beneficial effect** to human health outcomes with respect to climate change mitigation and adaptation.

# Air Quality

18.10.65 **ES Volume 1, Chapter 15: Air Quality [EN010168/APP/6.1]** sets out the likely effects on air quality as a result of the operation and maintenance of the Scheme, and identifies operation and maintenance vehicle emissions during the operational lifetime of the Scheme, and during the peak replacement scenario are minimal. Emissions from any instances of fire at the BESS Area are likely to



be the main sources of air quality impacts during the Scheme's operational lifetime. The assessment of BESS fire emissions demonstrates the receptor most greatly affected by a BESS fire would be the 'PRoW4' footpath WT|HULL|24. This has been modelled in ES Volume 3, Appendix 15-2: BESS Fire Emissions Modelling [EN010168/APP/6.3]. Modelled concentrations of emissions compared with the Acute Exposure Guidance Levels, subject to mitigation measures as set out in the Outline BSMP [EN010168/APP/7.21] and modelled using worst-case scenarios, have been professionally judged as demonstrating the effect of BESS fire emissions during the operation and maintenance phase is predicted to be not significant, in the unlikely event that a BESS fire occurs. Given the short-term nature of the emissions, and that background concentrations are not available for some of the pollutants, it is not considered appropriate to determine a magnitude of impacts. Applying this to the assessment of human health, the greatest level of effect to human health is therefore anticipated to be a short-term temporary minor adverse effect (not significant), in the worst-case scenario event of a BESS fire.

## Water Quality or Availability

18.10.66 ES Volume 1, Chapter 11: Hydrology, Flood Risk and Drainage [EN010168/APP/6.1] identifies no significant residual effects on the hydrological environment as a result of the Scheme's operation and maintenance, subject to implementation of embedded design and additional flood risk and hydrology specific mitigation measures. During operation and maintenance, the impacts relevant to human health include diffuse pollution resulting from fire, and increased runoff to watercourses from a permanent increase in impermeable areas, both of which are determined to have a residual minor adverse effect. Resultant risks to human health (as a **medium** sensitivity receptor) from both these sources are considered to be low in magnitude as a result of additional on-site mitigation measures and as a result of implementation of measures as set out in the Outline BSMP [EN010168/APP/7.21]. Water requirements for operation and maintenance are likely to be minimal, and unlikely to place pressure on local water resources. As such, no additional assessment of water availability has been undertaken. With respect to resultant effects on human health as a result of changes to water quality, the overall anticipated significance of effect is a long-term minor adverse effect (not significant). Effects to the water environment or to water availability are not anticipated to be of any greater significance during the peak replacement scenario than during the operation and maintenance phase overall.

#### Land Quality

18.10.67 During the operational lifetime of the Scheme, the key risks associated with contamination are as a result of contamination of controlled waters due to potential spillages or leakages of temporary fuels and chemicals stored on site, or as a result of contaminated firewater from controlling potential BESS fires.



These therefore are the greatest risks present for both onsite operation and maintenance workers, and to the resident and working population of the Study Area for Ground Conditions.

- 18.10.68 During the Scheme's operational lifetime, the assessment presented in **ES**Volume 1, Chapter 19: Ground Conditions [EN010168/APP/6.1] identifies no significant residual effects to onsite workers from contamination during operation and maintenance activities on the Scheme, and subject to proper bunding and collection of contaminated firewater in the event of a BESS fire as secured in the Outline BSMP [EN010168/APP/7.21], no significant residual effects to the resident and working population of the Study Area for Ground Conditions or to users of controlled waters are anticipated.
- 18.10.69 Overall, the sensitivity of the population to human health risks from contamination is considered **medium**. This applies to both onsite workers and the resident and working population of the Study Area for Ground Conditions. As the residual risk of contamination is considered not to be significant, this is interpreted for the purpose of human health assessment as being of no greater than a low magnitude. As such, the resultant effects to human health during operation and maintenance are considered to be a long-term **minor adverse effect** (not significant), with no greater level of significance anticipated during peak replacement activities.

## Noise and Vibration

- 18.10.70 **ES Volume 1, Chapter 14: Noise and Vibration [EN010168/APP/6.1]** sets out that no individual receptor is anticipated to experience any significant residual effects from changes in levels of noise during the operational lifetime of the Scheme as a result of noise from electrical infrastructure onsite, subject to implementation of reasonable sound attenuation measures. This includes receptors that are in the context of extremely low existing background noise levels. Where individual receptors are exposed to noise, these are likely only to cause health and wellbeing impacts where residents or affected dwellings are most vulnerable to changes in their sensory environment. As such, a maximum negligible level change in noise levels is likely to induce no more than a negligible magnitude impact on health and wellbeing, and as such those of **high** sensitivity may experience up to a long-term **minor/negligible adverse effect**, while the overall effect across the Study Area is anticipated to be a **negligible adverse effect**. These are not considered to be significant effects.
- 18.10.71 It is pertinent to consider the time duration of exposure, as prolonged exposure to noise may lead to the level of significance being perceived as increased over the lifetime of the Scheme or the occupational lifetime of the residents of affected dwellings. As the Scheme is anticipated to produce no greater than a minor/negligible adverse effect to any individual receptor, and reasonable noise reduction measures are to be implemented, this is not anticipated to cause any increased perception of adverse effects on human health over the lifetime of the



Scheme, or any resultant long-term nuisance as corroborated by Section 4.4 of the **Statutory Nuisance Statement** document [EN010168/APP/7.6].

18.10.72 During the peak replacement scenario, the magnitude of noise and vibration impacts from solar PV and BESS infrastructure replacement activities are likely to be similar to but no greater than those during construction. No large-scale replacement works are anticipated along the Cable Route Corridor, and as such only receptors adjacent to the Solar PV Sites and BESS Site are anticipated to experience noise and vibration effects, the assessment of which concludes no significant residual effects. As these effects are anticipated to short- to medium-term, it is not expected that these will have any more than a resultant negligible magnitude impact on human health for any receptor. As such, the resultant human health effect on high sensitivity receptors is likely to be up to a temporary short- to medium-term minor/negligible adverse effect, with the overall population in the Study Area (for Noise and Vibration) experiencing a temporary short- to medium-term negligible adverse effect to human health. These are not significant effects.

#### **Institutional and Built Environment**

#### Wider Societal Infrastructure and Resources

- 18.10.73 The Scheme in its operational lifetime is valuable both for national energy security but also helps supply electricity for the benefit of people's lives and livelihoods while contributing to improving the country's climate change resilience. The ability for the Scheme to contribute towards these goals is likely to lead to a long-term **minor beneficial effect** (not significant) on human health within the Wider Baseline Study Area. This is as a result of the Scheme contributing to the electricity demands of continued and improved way of life, and helping to reduce community anxieties about climate change through demonstrating the Study Area's contribution to meeting the national net zero carbon emission goals.
- 18.10.74 Furthermore, adverse impacts on societal infrastructure, such as telecommunications and utilities, and impacts from pests and diseases are not anticipated to be generated through the operational lifetime of the Scheme, subject to proper implementation of mitigatory and management measures, as set out in ES Volume 1, Chapter 20: Other Environmental Matters [EN010168/APP/6.1].

## **Decommissioning**

#### **Social Environment**

#### Housing

18.10.75 The decommissioning workforce of the Scheme is likely to be an estimated 75-80% of that of the construction phase. Whilst the availability of housing at the



point of decommissioning cannot be determined at this point, the level of effect on human health as a result of reduced access to housing is likely to be similar to that during construction as set out in Paragraphs 18.10.5 to 18.10.7 above: a medium-term temporary **minor/negligible adverse effect** (not significant).

# Open Space, Leisure and Play

- 18.10.76 Likely effects on open space, leisure and play during decommissioning are likely to be similar to those experienced during construction (as set out at Paragraphs 18.10.8 to 18.10.11), subject to changes to the future baseline as a result of the passage of time and early projections of population demographics. Future baseline conditions in the 2 km Study Area are not known due to the 60-year interim period; however, it can be assumed that the population of over-65 year olds, and thus proportionally, the rate of people with limited activity may be higher than the existing baseline. As a result, the sensitivity of the overall population to changes is considered to be up to **medium**.
- 18.10.77 Resultantly, the impact on human health with regard to open space, leisure and play during decommissioning is anticipated to be a medium-term temporary **minor adverse effect** (not significant).

## <u>Transport Modes, Access and Connections</u>

18.10.78 **ES Volume 1, Chapter 13: Transport and Access [EN010168/APP/6.1]** identifies in Section 13.12 that residual effects from decommissioning are likely to be the same significance as residual effects during construction (temporary negligible to minor adverse residual effects). Resultantly, it is also assumed that the effect on human health and wellbeing from impacts on accessibility and functional use of the highway is anticipated to be no more than a medium-term temporary **negligible adverse effect** (not significant). Impacts on social connectivity and isolation as a result of fear and intimidation to non-motorised users on highways are likely to be no greater than a medium-term temporary **minor adverse effect** (not significant) to human health.

## Community Identity, Culture, Resilience and Influence

18.10.79 At the point of decommissioning, the sensitivity of affected communities to changes in the character of their surroundings and impacts on their sense of community is likely to be overall low across the 2 km Study Area, including in the areas closest to the Scheme. This is because, at the point of decommissioning, the Scheme will be up to 60 years old and have been present at its location for the majority of most people's lives and is anticipated to have established a significant beneficial effect with respect to landscape fabric as a result of improved trees, hedgerows, and areas of ground cover planting (as reported in Section 8.10 of ES Volume 1, Chapter 8: Landscape and Visual Impact Assessment [EN010168/APP/6.1]).



- 18.10.80 As during construction, the decommissioning of the Scheme is anticipated to bring no greater than a negligible magnitude impact of neither positive or negative bias to community identity and culture as a result of localised net migration due to inbound decommissioning workers. With respect to sense of place, the decommissioning of the Scheme is likely to have up to a low magnitude impact on community identity and culture, as a result of the land being returned to agricultural use. Given the up to 60-year operation and maintenance phase of the Scheme this change is likely to have a mixed positive and negative response based on likely differences in sentiment towards the Scheme within the community. Considering a worst-case scenario where this is more negative bias, this would therefore constitute a medium-term temporary minor adverse effect (not significant) during decommissioning, before returning to neutral following restoration of the land to agricultural use.
- 18.10.81 With respect of resilience and influence, communities closest to the Solar PV Sites are likely to be of **medium** sensitivity to changes in resilience and influence, as these communities are likely to experience the greatest level of change to their sense of place during decommissioning, and thus are likely to seek greater influence or control of what decommissioning and restoration works will mean for themselves. The Community Liaison Manager will be reestablished during decommissioning activities onsite to assist in this, and thus minimise the magnitude of negative impacts on community resilience and influence during the Scheme's decommissioning. This role is defined in the Outline Decommissioning Strategy [EN010168/APP/7.14], which is secured by requirement in the Draft DCO [EN010168/APP/3.1]. Whilst community anxieties about decommissioning activities may still be present, these are likely to be no more than of a negligible magnitude impact to community resilience and influence and thus on population mental health and wellbeing during decommissioning and restoration works. As a result, the likely human health effect as a result of changes to community resilience and influence during decommissioning is no greater than a medium-term temporary minor/negligible adverse effect (not significant).

## **Economic Environment**

#### **Education and Training**

18.10.82 Likely residual effects on education and training during decommissioning are likely to be similar to those experienced during construction (a medium-term temporary moderate-minor beneficial effect across the Study Area for Socioeconomics, Tourism and Recreation) subject to implementation of enhancement measures as secured through the **Outline SSCEP [EN010168/APP/7.20]**. Future baseline conditions in relation to education and training are likely to have adapted and responded to changing professional and societal needs between the existing baseline date of 2023-2025 and the anticipated decommissioning date of 2089-2091. Therefore, the sensitivity of the future overall population to



changes in education and training provision is considered to be **medium**. Resultantly, a low positive impact on human health with regard to education and training during decommissioning is anticipated to generate a medium-term temporary **minor beneficial effect** (not significant).

## **Employment and Income**

18.10.83 Residual effects on employment and income effect across the Study Area for Socio-economics, Tourism and Recreation as a result of the Scheme's decommissioning will be similar to those experienced during construction (a medium-term temporary negligible beneficial effect on the labour force). This means the anticipated magnitude of resultant impact on human health is negligible and positive, as during construction. However, it is appropriate to assume that the employment environment and labour market at the point of decommissioning is of greater – up to **medium** – sensitivity to changes due to projected changes in population demography creating additional pressure on a proportionally smaller economically active labour force. Resultantly, the Scheme's decommissioning is likely to induce a medium-term temporary **minor/negligible beneficial effect** (not significant) on human health with regard to employment and income during decommissioning.

# **Bio-physical Environment**

# Air Quality

18.10.84 There is the potential for fugitive dust emissions, vehicle emissions and NRMM emissions during the decommissioning phase. These potential effects are likely to be similar to, or no greater than, those identified during the construction phase. These effects are therefore considered not to be significant as set out in **ES Volume 1, Chapter 15: Air Quality [EN010168/APP/6.1]**. Applying this assumption to resultant human health impacts, it can be determined that (as for construction) the magnitude of impact on human health during decommissioning is anticipated to be no greater than a low negative magnitude impact. As a result of the **medium** sensitivity of the resident population to air quality impacts, the resultant human health effect is no more than a medium-term temporary **minor adverse effect (**not significant).

## Water Quality or Availability

18.10.85 **ES Volume 1, Chapter 11: Hydrology, Flood Risk and Drainage**[EN010168/APP/6.1] set out the likely residual effects on the hydrological environment as a result of the Scheme are likely to similar to or less significant than those assessed at construction: up to minor adverse effects. As such, no likely significant residual effects are anticipated. The most likely impacts relevant to human health are thus those that relate to rapid surface water runoff from a temporary increase in impermeable area, silt-laden runoff affecting local water quality, and spillage and leaks of pollutants from decommissioning



activities. As during construction, water requirements for decommissioning activities are likely to be limited in quantity, and have not anticipated to impact upon local water availability. Residual risks to human health, both of onsite workers and offsite receptors, from these sources are considered to be no greater than low as a result of on-site mitigation measures, while both sets of receptors are considered **medium** sensitivity to change. This also accounts for potential increased in rainfall and flooding events as a result of future climate change. As such, the overall anticipated effect on human health as a result of changes to water quality is a medium-term temporary **minor adverse effect** (not significant).

# **Land Quality**

- 18.10.86 **ES Volume 1, Chapter 19: Ground Conditions [EN010168/APP/6.1]** identifies that during decommissioning, risks of contamination from onsite works are likely to be from displacement and exposure of soils, and therefore of a similar risk to those experienced during construction. No significant residual effects are anticipated to either onsite workers or the resident and working population of the Study Area for Ground Conditions.
- 18.10.87 As suitable embedded and additional mitigation measures can be implemented throughout all phases of the Scheme, the sensitivity of the decommissioning workforce and the overall population of the Study Area for Ground Conditions to human health risks from contamination is considered **medium**. As no significant residual effects are assessed as being likely, the resultant risk of contamination to both onsite workers and nearby residents is considered to be no greater than a low magnitude. Resultantly, the potential effects to human health during decommissioning are considered to be a medium-term temporary **minor adverse effect** to onsite workers, and a long-term **minor adverse effect** to the resident and working population of the Study Area for Ground Conditions, downstream groundwater users, and to future site users. Neither of these are significant effects.

#### Noise and Vibration

- 18.10.88 As during construction, noise and vibration impacts associated with the Scheme's decommissioning are likely to be localised to individual receptors nearest to noise and vibration sources on the Order Limits. Furthermore, the assessment within Section 14.11 of ES Volume 1, Chapter 14: Noise and Vibration [EN010168/APP/6.1] concludes that the noise and vibration impacts resulting from the decommissioning of the Scheme will be equivalent to but no worse than the impacts arising from construction and construction traffic noise and are therefore not significant effects.
- 18.10.89 Across the entire Study Area for Noise and Vibration, there is therefore unlikely to be more than a **negligible adverse effect** to human health overall during the Scheme's decommissioning, as is assessed for the construction phase of the



Scheme. Individual receptors – notably residential dwellings – are identified to be of **high** sensitivity to noise and vibration, and likely to experience no greater than a negligible magnitude of impact to human health from noise and vibration from Scheme decommissioning works. Therefore, the resultant effect to human health for those at highest risk is anticipated to be no greater than a short- to medium-term temporary **minor/negligible adverse effect** (not significant) on health and wellbeing.

#### **Institutional and Built Environment**

## Health and Social Care Services

- 18.10.90 The decommissioning of the Scheme is anticipated to bring no greater impacts on resident population or on demographic profile across the 2 km and 5 km Study Areas as during construction, as the anticipated inbound workforce for decommissioning is anticipated to be approximately 80% as large as that during construction. Applying the magnitude of impact at construction (as set out in Paragraph 18.10.41) as a conservative worst-case or 'upper bound' approach, the inbound workforce during decommissioning is anticipated to generate no greater than a low magnitude impact on primary and emergency healthcare access for existing residents or users.
- 18.10.91 Members of the population most reliant on primary and emergency healthcare services due to long-term illnesses, disabilities, and age-related illnesses are of a high sensitivity to changes to availability of access to primary and emergency healthcare services as a result of increased demand. Future baseline conditions cannot be accurately predicted; however age-related illnesses are likely to be of greater concern in future. Furthermore, predictions of the level of provision and accessibility of primary and emergency healthcare services in the future also cannot reasonably be determined. This indicates that the general population across the 5 km Study Area for primary healthcare provision and Wider Baseline Study Area are likely to be of **medium** sensitivity to changes to healthcare access.
- Applying these considerations, and assuming that the provision of primary and emergency healthcare services is likely to be similar in the future as to current baseline conditions, the greatest level of induced impact on primary and emergency healthcare services as identified on ES Volume 2, Figure 18-2: Health and Social Care Facilities and Figure 18-3: Hospitals and Emergency Healthcare Facilities [EN010168/APP/6.2] is likely to have a short- to medium-term temporary minor adverse effect (not significant) on human health as a result of increased demand on primary and emergency healthcare services and subsequent constraining of accessibility to existing service users.
- 18.10.93 Whether or not the social and residential healthcare facilities identified in Paragraph 18.7.65 will still be in use during the Scheme's decommissioning



cannot be predicted. That notwithstanding, it can be assumed that there is likely to be an increase in the requirement for social care or residential care facilities in the 2 km Study Area at the future baseline stage, as a result of population projections indicating an increased elderly population. As a result, future social and residential healthcare facilities are going to be of **medium** sensitivity to changes to their surrounding environment, and thus so will any users' or residents' community identity, culture, resilience and influence, (refer to Paragraph 18.10.81). The Scheme's decommissioning is not anticipated to directly or indirectly increase the number of people requiring social and residential healthcare, and therefore there is no further effect to this receptor with respect of demand. Future users of these facilities are likely to experience similar low magnitude environmental impacts during decommissioning as during construction. As a result, these receptors are not anticipated to experience any greater than a medium-term temporary **minor adverse effect** (not significant) during decommissioning.

# 18.11 Additional Mitigation

18.11.1 Whilst no significant effects to human health receptors have been identified in the assessment in Section 18.10 above, the following additional mitigation measures aim to reduce the impacts of the Scheme for which the significance can be improved beyond the extent controlled by the embedded measures set out in Section 18.9. Additional mitigation measures are therefore to be secured by requirements in the Draft DCO [EN010168/APP/3.1] with reference to the Outline CEMP [EN010168/APP/7.12] and Outline Decommissioning Strategy [EN010168/APP/7.14].

#### **Construction**

## **Health and Social Care Services**

18.11.2 To reduce the level of impact on primary healthcare services within the 5 km Study Area for primary healthcare provision, the **Outline CEMP**[EN010168/APP/7.12] contains specific mitigation designed to support to construction workers to find and register with GPs across the Wider Baseline Study Area in reasonable proximity to their temporary or full-time accommodation and where such GP surgeries have reasonable capacity to take on additional patients. This will help to reduce the concentration of effect in any given area, and as such reduce the peak magnitude of impact to negligible in the 5 km Study Area. This post-additional mitigation impact on healthcare services is likely to result in a residual short- to medium-term temporary minor/negligible adverse effect on human health (not significant) as a result of negligibly increased demand on healthcare services and subsequent decrease in accessibility to existing service users.



18.11.3 Section 18.10 above identifies users of residential care homes to be of increased sensitivity to changes in their environment, due to their vulnerability to changes in human health determinants to residents and patrons. To mitigate these measures beyond those embedded measures defined in the Scheme design, the **Outline CEMP [EN010168/APP/7.12]** includes specific measures to reduce construction impacts. These will include keeping in direct contact with the operators of care homes and service providers ahead of and during construction, to ensure that operators at these receptors are suitably resilient to reduce the likelihood of construction impacts affecting the functional operation and quality of environment for residents and users. Whilst this may help to reduce sensitivity of these receptors to changes, as a result of being more resilient and aware of upcoming environmental changes, this is not anticipated to reduce the significance of effect below a residual medium-term temporary **minor adverse effect** (not significant) during construction.

## **Decommissioning**

#### **Health and Social Care Services**

- 18.11.4 As the assessment in Section 18.10 above identifies that decommissioning effects on health and social care services are likely to be of a similar effect to those during construction, the same types of additional mitigation measures are suitable to be reinstated during decommissioning.
- 18.11.5 Therefore, the **Outline Decommissioning Strategy [EN010168/APP/7.14]** contains specific mitigation to support to decommissioning workers to find and register with GPs where it will help to reduce the concentration of effect in the 5 km Study Area, and as such reduce the peak magnitude of impact to negligible. This is therefore likely to result in a residual short- to medium-term temporary **minor/negligible adverse effect** on human health (not significant) as a result of negligibly increased demand on healthcare services and subsequent decrease in accessibility to existing service users.
- 18.11.6 Whilst the future locations of care homes and other social care providers is not known, it can be assumed that there will be some that are closely affected by the decommissioning of the Scheme. To ensure the significance of human health effects on vulnerable residents and users are minimised, the **Outline Decommissioning Strategy [EN010168/APP/7.14]** includes for the provision of direct lines of contact and engagement with care home operators and service providers ahead of the Scheme's decommissioning, to ensure resilience to change is maximised, and the magnitude of impacts is minimised. Awareness of the Scheme and the need for decommissioning should also be conveyed to prospective care provision services being established in the 2 km Study Area during the Scheme's operational lifetime, so that these service providers can ensure they are not being located in areas of unavoidable impacts. Resultantly, the residual significance of effect to human health for social care providers and



recipients is a medium-term temporary **minor/negligible adverse effect** (not significant).

# **Monitoring**

18.11.7 As no potential significant effects have been identified for human health, no specific monitoring of significant effects is proposed.

#### 18.12 Residual Effects and Conclusions

- 18.12.1 This section summarises that **no residual significant effects** from the Scheme on human health are anticipated at any stage of the Scheme following the implementation of embedded and additional mitigation.
- 18.12.2 Significant residual effects are defined as moderate/minor, moderate, major/moderate or major.
- 18.12.3 A full table of non-significant residual effect is set out in **ES Volume 3**, **Appendix 18-3: Human Health Summary of Non-Significant Effects** [EN010168/APP/6.3].



### 18.13 Cumulative Effects Assessment

# **Inter-Project Cumulative Effects**

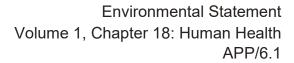
- 18.13.1 This section presents an assessment of cumulative effects between the Scheme and other proposed and committed plans and projects.
- 18.13.2 This assessment has been made with reference to the methodology and guidance set out in ES Volume 1, Chapter 6: EIA Methodology [EN010168/APP/6.1] of this ES and shortlist of cumulative plans and projects identified in ES Volume 1, Chapter 21: Cumulative and In-Combination Effects [EN010168/APP/6.1].
- 18.13.3 For individual receptors, this cumulative effect assessment identifies where the assessed effects of the Scheme could interact with effects arising from other plans and/or projects on a spatial and/or temporal basis.
- 18.13.4 Plans and projects identified from **ES Volume 1, Chapter 21: Cumulative and In-Combination Effects [EN010168/APP/6.1]** which have the potential to result in cumulative effects on human health are set out in **Table 18-9** and considered below. The remaining plans and projects were reviewed in relation to human health receptors identified in this assessment and no further potential for cumulative effects are identified (Ref 18-74 Ref 18-114).
- 18.13.5 There are no anticipated cumulative effects anticipated to be related to climate change mitigation and adaptation; transport modes, access and connections (following construction); water quality and availability; land quality; and noise and vibration (following construction), as assessed in each of the respective technical technical chapters in **ES Volume 1 [EN010168/APP/6.1]**. As a result, none of these topics are therefore anticipated to have residual significant cumulative effects on human health.



# Table 18-9 Plans and Projects Relevant to Human Health Cumulative Effects Assessment

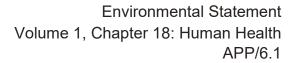
ID	Reference and Description	Distance from the Scheme	Potential Cumulative Effects
3	PL/2024/00865 (Ref 18-74) Residential development for 45 dwellings, vehicular and pedestrian access including a new footway to Sopworth Lane, associated parking, open space, landscaping, and associated infrastructure.  Application submitted and awaiting determination.	1.1 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction
5	PL/2021/10696 (Ref 18-75) Proposed erection of a GP Surgery (Class E(e)), car park and associated works (Outline application relating to access).  Development permitted for 600 m² of Class E(e) space.	1.0 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Economic Environment: Operation and Maintenance Institutional and Built Environment: Operation and Maintenance
57	19/01490/FUL (Ref 18-76) A Residential Development Comprising 31 Dwellings (Use Class C3), a New Vehicular Access, Public Open Space, Landscaping, Sustainable Urban Drainage and Other Associated Infrastructure Works.	0.5 km	Not assessed, as the development is built and therefore part of baseline assessment
58	20/10972/OUT (Ref 18-77) Outline Planning Application for up to 71 Dwellings, Community Car Park, Land Reserved for Future Expansion of Hullavington CofE Primary School, Access, Open Space, Surface Water Attenuation Basin, Landscaping and Associated Works.  Development under construction.	0.1 km	Social Environment: Construction Social Environment: Operation and Maintenance

Planning Inspectorate Reference: EN010168



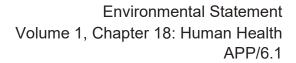


ID	Reference and Description	Distance from the Scheme	Potential Cumulative Effects
			Economic Environment: Construction Institutional and Built Environment: Construction
93	PL/2022/08742 (Ref 18-78) 75 bed modular unit single living accommodation, with supporting kitchen and utility units. New cycle storage shelter and new waste management facility.  Development permitted.	1.2 km	Social Environment: Construction Social Environment: Operation and Maintenance
96	18/08271/OUT (Ref 18-79)  Outline planning application for up to 44,150 sq.m. (GIA) of development, comprising a maximum of 20,000 sq.m. (GIA) of research and development/office floorspace (Class B1 (a) and (b)) and 24,150 sq.m. of ancillary development including test areas, an energy centre, a logistics/storage building, hangar building, staff and customer facilities, and gatehouse, and new access arrangements including a realigned section of C1 road and new roundabouts at both the junction of the A429/C1 roads and on the C1 road (all matters reserved except for access).	1.0 km	Not assessed, as the development is built and therefore part of baseline assessment
101	PL/2024/02998 (Ref 18-80)  Development of site to provide 41 No. residential (Use Class C3) units and associated works including 40% affordable housing, parking provision, highways improvements, off-site ecological enhancement and refuse/recycling stores.  Application submitted and awaiting determination.	1.3 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction
103	PL/2023/04993 (Ref 18-81)  EIA Screening Opinion for the A350 Chippenham Bypass Phase 4 and 5 scheme - Dualling an existing single carriageway at the A350 Chippenham Bypass in order to improve regional connectivity and meet the increased traffic demand that is expected from the A350 growth zone under permitted development rights.  Development under construction for 1.8 km of dual-carriageway with associated infrastructure.	1.1 km	Social Environment: Construction Social Environment: Operation and Maintenance



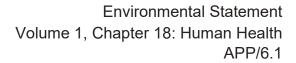


ID	Reference and Description	Distance from the Scheme	Potential Cumulative Effects
105	PL/2022/06908 (Ref 18-82) Full Planning Application for 56 Dwellings, associated parking, public open space, landscaping, access, drainage works and associated infrastructure.  Development permitted.	0.6 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Institutional and Built Environment: Construction
123 244	PL/2024/01560 (Ref 18-83)  Laying a section of underground cable linking an approved solar farm (ref: 20/06840/FUL) to the approved cable route within National Grid's land title, together with ancillary work necessary for the implementation of the planning permission. (Melksham Substation).  20/06840/FUL (Ref 18-84)  Construction of a solar farm and battery storage facility together with all associated works, equipment and necessary infrastructure. PoC at Melksham Substation.  Development permitted for 49.9 MW of energy generation and estimated 50-100 MWh of energy storage	0.0 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Economic Environment: Operation and Maintenance Institutional and Built Environment: Construction
129	PL/2022/09253 (Ref 18-85) Installation of underground cable. Development permitted for a 350 m cable route.	0.0 km	Social Environment: Construction Social Environment: Operation and Maintenance
206	PL/2021/04515 (Ref 18-86)  Construction of a 2 hour duration containerised Battery Storage Facility with the ability to store and export up to 49.99 MW of electricity. The development will comprise 58 single storey steel cabins, known as E - Houses which are 12m long, 2.4m wide and 2.9m high, which house banks of lithium-ion batteries. 12 MV Blocks, also known as the transformers and control gear sit alongside E - Houses. The compound is	10 km	Not assessed



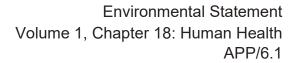


ID	Reference and Description	Distance from the Scheme	Potential Cumulative Effects
	protected with a 2.5 m high steel mesh fence. The proposed development would replace the approved Minety North substation (Minety North, 17/03936/FUL). (Minety South 2)		
207 208	19/10628/FUL (Ref 18-87) The construction of a 10 MW Battery Storage Facility, the formation of a new access, alteration of an existing building, site clearance and other associated works. PL/2021/07610 (Ref 18-88) Development of a 20 MW battery storage facility. Development permitted.	0.3 km	Social Environment: Operation and Maintenance Economic Environment: Operation and Maintenance
218 234	20/08618/FUL (Ref 18-89) Installation of a solar farm comprising ground mounted solar PV panels with a generating capacity of up to 49.9 MW, including mounting system, battery storage units, inverters, underground cabling, stock proof fence, CCTV, internal tracks and associated infrastructure, landscaping and environmental enhancements for a temporary period of 40 years and a permanent grid connection hub.  20/05893/SCO (Ref 18-90) EIA screening/scoping opinion for installation of a solar farm with a 49.9 MW output for a temporary period of 40 years, including battery storage units, associated infrastructure, permanent grid connection hub and environmental enhancements.  Development permitted for 49.9 MW of energy generation and estimated 10-20 MWh of energy storage.	6.0 km	Social Environment: Construction Economic Environment: Construction Economic Environment: Operation and Maintenance Bio-physical Environment: Construction
221	PL/2021/06100 (Ref 18-91)  The installation of a solar farm of up to 49.9 MW of generating capacity, comprising the installation of solar photovoltaic panels and associated infrastructure including customer cabin, customer substation, DNO substation and equipment, inverter and transformer substations (Leigh Delamere Solar Farm).  Development permitted.	1.3 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Operation and Maintenance
224	PL/2023/04625 (Ref 18-92) Proposed Battery Energy Storage Scheme on Land at Woolley Park Farm, Leigh Road, Trowbridge The Town and Country Planning (Environmental Impact Assessment) Regulations 2017.	5.8 km	Economic Environment: Construction



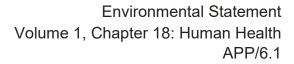


ID	Reference and Description	Distance from the Scheme	Potential Cumulative Effects
	EIA Screening outcome is that EIA is not required for development of an estimated 280-560 MWh of energy storage.		Economic Environment: Operation and Maintenance
225 227	PL/2023/01914 (Ref 18-93)  Proposed temporary planning permission for 40 years for the development of a solar farm of up to 24.14 MW of generating capacity, comprising of the installation of solar photovoltaic panels and associated infrastructure including customer cabin, customer substation, DNO substation and equipment, inverter and transformer substations, spare part container, associated battery storage, access tracks, widening of existing highway access, fencing, security cameras, landscape planting, ecological improvements and associated works. The existing agricultural use of the site will also continue in tandem with the solar farm with the grazing of farm animals.  20/06517/SCR (Ref 18-94)  EIA Screening Opinion in relation to the proposed development of solar farm and associated development.  Application submitted and awaiting determination.	4.5 km	Economic Environment: Construction Economic Environment: Operation and Maintenance
226	PL/2021/08690 (Ref 18-95) Installation of a solar farm and battery storage facility with associated infrastructure.  Development permitted for 49.9 MW of energy generation and estimated 40-80 MWh of energy storage.	2.4 km	Economic Environment: Construction Economic Environment: Operation and Maintenance Institutional and Built Environment: Construction
229	PL/2022/01695 (Ref 18-96) EIA Screening Opinion for a proposed 20 MW Solar Farm development. EIA Screening outcome is that EIA is not required for the development.	1.7 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Economic Environment: Operation and Maintenance



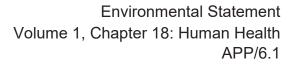


ID	Reference and Description	Distance from the Scheme	Potential Cumulative Effects
			Bio-physical Environment: Construction
231	20/03528/FUL (Ref 18-97) Installation of a renewable led energy scheme comprising ground mounted photovoltaic solar arrays and battery-based electricity storage containers together with transformer stations; access; internal access track; landscaping; security fencing; security measures; access gate; and ancillary infrastructure.  Development permitted for 49.9 MW of energy generation and estimated 20-40 MWh of energy storage.	9.0 km	Social Environment: Construction Economic Environment: Construction Economic Environment: Operation and Maintenance Bio-physical Environment: Construction Institutional and Built Environment: Construction
237	PL/2022/00664 (Ref 18-98) Proposed Development is for a battery storage facility. The use of the site would change from agricultural to energy infrastructure.  Application not determination and subject to appeal for an estimated 80-160 MWh of energy storage	9.4 km	Economic Environment: Construction Economic Environment: Operation and Maintenance
240	PL/2022/05504 (Ref 18-99) Installation of a Battery Energy Storage System (BESS) together with associated ancillary infrastructure, equipment and access arrangements.  Development permitted for an estimated 40-80 MWh of energy storage.	9.4 km	Economic Environment: Construction Economic Environment: Operation and Maintenance
241	PL/2022/02824 (Ref 18-100) Proposed Development is for a battery storage facility and ancillary development. Development permitted for an estimated 65-130 MWh of energy storage.	9.0 km	Economic Environment: Construction Economic Environment: Operation and Maintenance
242	PL/2024/03276 (Ref 18-101)	9.3 km	Economic Environment: Construction



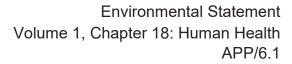


ID	Reference and Description	Distance from the Scheme	Potential Cumulative Effects
	Proposed development of a grid connection cable route for the approved Milou battery energy storage system.  Development permitted for a 640 m cable route.		Economic Environment: Operation and Maintenance
243	PL/2023/08481 (Ref 18-102)  Development of a solar farm of up to 40MW of export capacity, comprising the installation of solar photovoltaic panels, associated infrastructure and associated works including grid connection. (Eden RB Solar) (Red Barn Solar Farm).  Development permitted.	2.6 km	Economic Environment: Construction Economic Environment: Operation and Maintenance Institutional and Built Environment: Construction
254	PL/2023/10077 (Ref 18-103)  Construction and operation of a renewable energy park comprising ground mounted solar photovoltaics (PV) together with associated infrastructure, access, landscaping and cabling.  Application refused for approximately 23-28 MW of energy generation.	4.9 km	Economic Environment: Construction Economic Environment: Operation and Maintenance
256	CH1 – South West Chippenham (Rowden Park Site and Smaller Extension Sites) (Ref 18-104) Mixed use urban extension for 1,000 dwellings, 18 ha employment land, primary school, local centre and country park Additional for 11 ha/400 dwelling on smaller extension sites Development under construction for approximately 1,400 dwellings and approximately 50,000 m² pf business and employment space.	0.9 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Economic Environment: Operation and Maintenance Institutional and Built Environment: Construction
260	CP35 – Methuen Park (Ref 18-105)  Principal Employment Area (WCS) for B1, B2 and B8 Use - up to 26.5 ha of new employment (spread across all 3 Principal Employment Areas in Chippenham).  Policy allocation for the delivery of approximately 75,000 m² pf business and employment space.	0.4 km	Social Environment: Construction Social Environment: Operation and Maintenance



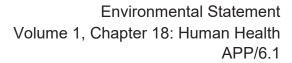


ID	Reference and Description	Distance from the Scheme	Potential Cumulative Effects
			Economic Environment: Construction Economic Environment: Operation and Maintenance Institutional and Built Environment: Construction
310	PL/2024/10434 (Ref 18-106) EIA Screening Opinion for proposed battery energy storage scheme of up to c. 50MW. EIA Screening outcome is that EIA is not required for the development.	0.2 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Economic Environment: Operation and Maintenance
311	PL/2024/06899 (Ref 18-107) Erection of an electrical substation, boundary timber fence and associated planting.	2.9 km	Not assessed
319	PL/2024/11691 (Ref 18-108)  Approval of reserved matters (layout, scale, appearance and landscaping) following outline consent PL/2022/06612 (APP/Y3940/W/322502) for the erection of 70 dwellings together with associated infrastructure and engineering works.  Development permitted.	1.2 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Institutional and Built Environment: Construction
328	PL/2024/09725 (Ref 18-109) Outline Planning application (with all matters except access reserved) for up to 22 dwellings, new access off Corsham Road, Public open space, drainage and associated works.	0.1 km	Social Environment: Construction





ID	Reference and Description	Distance from the Scheme	Potential Cumulative Effects
	Application submitted and awaiting determination.		Social Environment: Operation and Maintenance Economic Environment: Construction
330	PL/2024/09454 (Ref 18-110) Erection of a substation.	3.1 km	Not assessed
333	PL/2024/10089 (Ref 18-111)  EIA Screening Opinion in relation to the proposed development of "Battery Energy Storage Scheme".  EIA Screening outcome is that EIA is not required for the development of approximately 100-200 MWh of energy storage.	1.3 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Economic Environment: Operation and Maintenance Institutional and Built Environment: Construction
346	PL/2024/09410 (Ref 18-112)  Construction and operation of a solar farm together with all associated works, equipment and necessary infrastructure.  Application submitted and awaiting determination for development of an estimated 10 MW of energy generation.	0.1 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Economic Environment: Operation and Maintenance Institutional and Built Environment: Construction





ID	Reference and Description	Distance from the Scheme	Potential Cumulative Effects
357	PL/2025/03530 (Ref 18-113)  Full planning application for the demolition of the remaining horticultural nurseries and erection of employment facilities comprising office and product development premises (Class E) and warehouse and light industrial facilities (Class B2 and B8). Ancillary uses include a mobility hub, café, and accommodation, together with landscaping, drainage, and other associated works.  Application submitted and awaiting determination for development of 5,340 m² of Class B2, B8 and E space.	0.2 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Economic Environment: Operation and Maintenance Institutional and Built Environment: Construction
358	PL/2025/02785 (Ref 18-114) EIA Screening Opinion for Proposed Battery Energy Storage System and Associated Infrastructure EIA Screening outcome is that EIA is not required for the development of approximately 350-700 MWh of energy storage.	1.2 km	Social Environment: Construction Social Environment: Operation and Maintenance Economic Environment: Construction Economic Environment: Operation and Maintenance



#### **Cumulative Construction Phase**

18.13.6 Cumulative construction effects have been assessed for the years 2027-2029, based on the earliest anticipated construction phase for the Scheme, and based on the earliest, or most likely construction timescales for the assessed cumulative developments in **Table 18-9**. This section should be read in conjunction with supporting details in Section 1.5 of **ES Volume 3, Appendix 18-2**: **Human Health Legislation, Policy and Guidance [EN010168/APP/6.3]**.

# Social Environment

- 18.13.7 The likely cumulative construction impacts on the accommodation needs of inbound workers required to build out the developments listed in **Table 18-9** above are anticipated to increase demand for private rental properties. The cumulative effect on human health as a result of changes to access to suitable housing is a medium-term temporary **minor/negligible adverse effect** (not significant), and is of no greater significance than the Scheme assessed in isolation.
- 18.13.8 Whilst significant cumulative effects have been identified for some individual recreational facilities, this is not anticipated to increase the overall magnitude of impact on human health in the 2 km Study Area with respect to access to open space, leisure and play. As a result, no additional cumulative effect on human health is anticipated.
- 18.13.9 Cumulative impacts upon transport modes, access and connections during the likely cumulative construction phase are not anticipated to have significant additional impacts on the road network, and therefore no further impacts on public transport and connectivity, or impact on vehicular and non-vehicular safety, and fear and intimidation. As a result, the cumulative effects on human health are a medium-term temporary **negligible adverse effect** to accessibility and services, and a medium-term temporary **minor adverse effect** to social connectivity and safety perception. Neither of these are significant, nor of a greater significance than the Scheme assessed in isolation.
- 18.13.10 The 2 km Study Area for human health is host to the Scheme, and other proposed energy, residential, and employment developments. Whilst these collectively are likely to generate inbound construction workers, an increase in population is not anticipated to be concentrated within the 2 km Study Area. Furthermore, while the cumulative construction phase is anticipated to bring change to the community perception of their surroundings, it is anticipated that this will have no more than a low magnitude impact on community identity and culture within the 2 km Study Area. As a result, the cumulative effect on human health a medium-term temporary **minor adverse effect**, and is of no greater significance than the Scheme assessed in isolation.



18.13.11 With respect to resilience and influence, the communities affected by multiple developments will likely have a better understanding of how they can influence planning decision making. As such, the cumulative impact to community resilience and influence is also likely to be no greater than low in magnitude ahead of and during the cumulative construction phase. This is likely to induce a cumulative medium-term temporary **minor adverse effect** to human health. This is also no greater level of significance than for the Scheme in isolation, and is not significant.

#### **Economic Environment**

- 18.13.12 Cumulative impacts on skills and qualification attainment in the Wider Baseline Study Area are likely to be somewhat greater during the cumulative construction phase than assessed for the Scheme in isolation. However, the level of significance of the effect is likely to remain a medium-term temporary **minor** beneficial effect and is not significant.
- 18.13.13 With regard to employment and income, there is likely to be a cumulative low magnitude positive impact on human health within the Wider Baseline Study Area. This, due to the **low** sensitivity of the population, is likely to have a cumulative medium-term temporary **minor beneficial effect**. This is however not a significant effect.

# **Bio-Physical Environment**

- 18.13.14 Cumulative effects with regard to air quality, such as through fugitive construction dust emissions, and vehicular emissions on shared construction access routes, have not been identified, as no identified plans or projects are determined to be likely to contribute to the effects on air quality receptors. As a result, no cumulative effect on human health is considered likely.
- 18.13.15 The assessment of cumulative effects in respect of noise and vibration identifies that there is potential for some cumulative effects to occur during construction as a result of receptor proximity to multiple developments. However, due to the anticipated scale of these impacts, these are not unlikely to generate any additional significance of effect to human health than for the Scheme in isolation. As a result, no cumulative effect on human health is anticipated.

# Institutional and Built Environment

- 18.13.16 Cumulative requirement for primary health services is anticipated to be uplifted as a result of inbound temporary construction workers. Whilst there is a substantial geographic spread of identified cumulative developments, the concentration of additional healthcare service need within the 5 km Study Area for primary healthcare provision is conservatively anticipated to be a medium-term **minor adverse effect**. This however is not a significant effect.
- 18.13.17 Construction employees are unlikely to require social or residential care, and there is not anticipated to be any cumulative impact on specific social and



residential care facilities or services. As a result, no additional cumulative effect on human health is anticipated.

# **Cumulative Operation and Maintenance Phase**

18.13.18 As for construction, assessment assumptions are made on the basis of publicly available project information, together with assumptions generated from scaling assessed effects from the Scheme to other developments. The cumulative operation and maintenance phase is considered from 2038, which is the earliest predicted year all of the assessed developments are likely to be completed, to 2046, at which point the first of the identified cumulative developments is anticipated to be decommissioned. Cumulative effects with regard to the peak replacement scenario have not been assessed separately as the identified cumulative developments are not anticipated to require significant rebuilding or replacement activities to occur.

# **Social Environment**

- 18.13.19 Cumulative impacts upon open space, leisure and play facilities during the operation and maintenance phase are not anticipated to create any greater level of significance of effects with respect of cumulative effect on human health during the operational lifetime of the Scheme. This includes during the peak replacement scenario, which due to its short-term nature is not anticipated to generate any additional significant effects. As a result, no additional cumulative effect on human health is anticipated.
- 18.13.20 Cumulative energy, residential, and employment developments are anticipated to bring about a level of change to the community perception of the development of their surroundings during the cumulative construction phase. However, due to their geographic spread, close association with existing settlements, and limited intervisibility between energy developments and nearby settlements, the cumulative effect on human health with respect to community culture and identity is not anticipated to be of any greater level of significance than the Scheme assessed in isolation. Community resilience and influence with respect to the cumulative developments is likely to be no more than negligibly impacted throughout their operational and occupational lifetimes. Resultantly, no additional cumulative effect on human health with respect to community resilience and influence is anticipated.

### **Economic Environment**

18.13.21 The cumulative developments assessed will likely induce a substantial uplift in apprenticeships, training opportunities, and the requirement for specialist skills training. These opportunities are likely to directly benefit local access to education and training, with the potential for investment to be made in supporting industry-specific skillsets within the 2 km Study Area for human health. A cumulative low magnitude impact to a **medium** sensitivity receptor is



therefore anticipated to generate a cumulative long-term **minor beneficial effect** on human health. This is not a significant effect.

18.13.22 The Scheme in isolation is likely to cause a negligible decrease in employment during its operational lifetime, but will generate a negligible benefit in economic performance in the Wider Baseline Study Area. The cumulative developments assessed will likely induce a notable uplift in employment and therefore income and prosperity, of up to low magnitude across the Wider Baseline Study Area. The population are of **low** sensitivity to changes, therefore a low magnitude improvement to employment and income is anticipated to generate a cumulative long-term **minor beneficial effect** on human health. Whilst beneficial, this is not a significant effect.

# **Bio-Physical Environment**

18.13.23 As during construction, cumulative effects from air quality impacts and water quality and availability during the operational lifetime of the are not considered likely to occur. Therefore no cumulative effect on human health is considered likely to be generated.

# Institutional and Built Environment

18.13.24 The cumulatively assessed Schemes are anticipated to have some level of beneficial impact on wider societal infrastructure through the provision of new play spaces, utilities, retail, and healthcare infrastructure associated with large scale residential developments. This is therefore likely to induce a cumulative long-term **minor beneficial effect**, which is the same significance as for the Scheme assessed in isolation.

# **Cumulative Decommissioning Phase**

- 18.13.25 The decommissioning of the Scheme is anticipated to take place no later than 2089-2091 after a maximum 60-year operational lifetime. Of the assessed cumulative developments, those assessed as having finite operational lifetimes (solar PV installations and BESS projects) are anticipated to have operational lifetimes of between 20 and 40 years. As these are substantially shorter than the assessed operational lifetime of the Scheme, it is unlikely the respective decommissioning phases for these developments will overlap.
- 18.13.26 With respect to: access to housing; provision of open space, leisure and play; community identity, culture, resilience and influence; changes to education and training provision; air quality; and access to and provision of health and social care services, cumulative effects to human health as a result of cumulative decommissioning activities are not anticipated due to the differing operation and maintenance phase and therefore likely decommissioning phase (if anticipated to occur) of the developments assessed.

### **Economic Environment**



18.13.27 The decommissioning of the Scheme is anticipated to bring some level of employment and income uplift to the future working population. That notwithstanding, the cumulative effect on human health during the decommissioning phase is not anticipated to be substantially greater than assessed for the Scheme in isolation. As a result, no additional cumulative effect on human health is anticipated.

### **In-Combination Cumulative Effects**

- 18.13.28 In-combination cumulative effects are those where impacts from two or more environmental disciplines are considered likely to result in a new or different likely significant effect, or an effect of greater significance, than any one of the impacts on their own. The identified in-combination effects are set out within ES Volume 1, Chapter 21 Cumulative and In-Combination Effects [EN010168/APP/6.1].
- 18.13.29 The assessment presented in this chapter has already considered impacts to human health from other topics including climate change, landscape and visual, hydrology, flood risk and drainage, ground contaminations, transport and access, noise and vibration, air quality, and socio-economics, tourism and recreation.
- 18.13.30 No in-combination effects alongside human health have been identified as a result of the Scheme

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- Ref 18-3 Planning Act 2008, 2008 c.29. (as amended) [Accessed August 2025]
- Ref 18-4 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, 2017 No.572. (as amended) [Accessed August 2025]
- Ref 18-5 Equality Act 2010, 2010 c.15. (as amended) [Accessed August 2025]
- Ref 18-6 Health and Care Act 2022, 2022 c.31. (as amended) [Accessed August 2025]
- Ref 18-7 Department of Energy Security & Net Zero (2024). Overarching National Policy Statement for Energy (EN-1). London: The Stationery Office. Available at www.gov.uk/government/collections/national-policy-statements-for-energy-infrastructure [Accessed August 2025]
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- Ref 18-13 South Gloucestershire Council (2025). South Gloucestershire Joint Local Health and Wellbeing Strategy 2025-29. South Gloucestershire Health and Wellbeing Board. Available at beta.southglos.gov.uk/health-strategies/ [Accessed August 2025]
- Ref 18-14 Wiltshire Intelligence (2022). Wiltshire Joint Strategic Needs Assessment (JSNA). Available at https://www.wiltshireintelligence.org.uk/jsna/ [Accessed August 2025]
- Ref 18-15 Wiltshire Council (2023). Wiltshire's Joint Health and Wellbeing Strategy. Available at www.wiltshire.gov.uk/article/8528/Wiltshire-s-Joint-Local-Health-and-Wellbeing-Strategy-2023-to-2032 [Accessed August 2025]
- Ref 18-16 Wiltshire Council (2015). Wiltshire Core Strategy Adopted January 2015. Trowbridge: Wiltshire Council. Available at www.wiltshire.gov.uk/planning-policy-core-strategy [Accessed August 2025]
- Ref 18-17 North Wiltshire District Council (2006). North Wiltshire Local Plan 2011: Written Statement. Chippenham: North Wiltshire District Council. Available at www.wiltshire.gov.uk/article/5718/North-Wiltshire-Local-Plan-2011 [Accessed August 2025]
- Ref 18-18 West Wiltshire District Council (2004). West Wiltshire District Plan: First Alteration: Written Statement. Trowbridge: West Wiltshire District Council. Available at www.wiltshire.gov.uk/article/5922/West-Wiltshire-District-Plan [Accessed August 2025]
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