

Chapter 6: Environmental Impact Assessment Methodology

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6. Environmental Impact Assessment Methodology

6.1 Introduction

6.1.1 This chapter sets out the proposed overarching approach to the Environmental Impact Assessment (EIA) of the Proposed Development. Topic-specific methods of assessment are presented in **Chapters 7-22** in **Volume 2** of this Preliminary Environmental Information (PEI) Report.

6.1.2 This chapter is supported by the following figures in **Volume 3** of this PEI Report:

- a. **Figure 6-PD-1: Distance Based Zone of Influence of ≤ 500 m;**
and
- b. **Figure 6- PD-2: Distance Based Zone of Influence of 1 km and Above.**

6.1.3 There are no supporting appendices for this chapter.

6.2 EIA Scoping

EIA Scoping Report

6.2.1 A formal request for an EIA Scoping Opinion was submitted to the Planning Inspectorate (PINS) on behalf of the Applicants on 28 March 2025 in accordance with Regulation 10 of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations') (Ref. 1). This request was accompanied by an EIA Scoping Report (provided in **Appendix 5-PD-1** in PEI Report **Volume 4**), in accordance with Regulation 10(3) of the EIA Regulations.

6.2.2 The EIA Scoping Report, prepared by AECOM on behalf of the Applicants, outlined the proposed scope and methodology for the EIA, including baseline data collection, assessment parameters, and topic-specific approaches. It also identified potential 'significant' environmental effects that require further assessment in the EIA ('scoped in'), as well as potential effects that could be 'scoped out' on the basis they are not deemed significant, and proposed early mitigation strategies, structured around the anticipated design, and the construction and operational phases of the Proposed Development.

EIA Scoping Opinion

6.2.3 Upon receipt of the EIA Scoping Report, PINS (acting on behalf of the Secretary of State [SoS]) undertook a formal consultation with prescribed consultees, under Regulation 10(6) of the EIA Regulations (Ref. 1). Consultation with statutory consultation bodies, including environmental bodies (such as Natural England, Environment Agency and Historic England)

and relevant planning authorities (including the ten host local planning authorities) was conducted.

The EIA Scoping Opinion (provided in **Appendix 5-PD-2** in PEI Report **Volume 4**) provided confirmation of the topics and individual effects to be assessed within EIA and highlighted areas of agreement or disagreement with the proposed scope of the EIA requiring further clarification or refinement.

- 6.2.4 AECOM, on behalf of the Applicants, has reviewed the EIA Scoping Opinion in detail and used it to inform the structure and content of this PEI Report (and forthcoming Environmental Statement [ES]), facilitating the consideration and integration of all relevant matters raised by consultees into the ongoing assessment process.
- 6.2.5 Further details on the EIA Scoping Opinion are presented within **Chapter 5: Consultation and Engagement** in PEI Report **Volume 2**.

Proportionality in EIA

- 6.2.6 The approach taken in preparation of this PEI Report has been informed by PINS' Advice Note Seven: 'Environmental Impact Assessment: Process Preliminary Environmental Information and Environmental Statements' (Ref. 2) and reflects the requirements of the EIA Regulations (Ref. 1), which state that an ES should focus on those aspects of the environment likely to be significantly affected, while providing sufficient information to understand those effects.
- 6.2.7 In line with guidance and legislation, the EIA Scoping process sought to, where appropriate, scope out matters from further assessment and provide appropriate justification. This process ensures that focus in the EIA is retained on the likely significant effects of the Proposed Development and that the EIA is proportionate, in accordance with the Institute of Sustainability and Environmental Professionals¹ (ISEP) 'Delivering Proportionate EIA' guidance document (Ref. 3).
- 6.2.8 This same approach will be undertaken for the ES.

6.3 Rochdale Envelope

- 6.3.1 At this stage of the design, an element of flexibility needs to be retained, both in the parameters of the Proposed Development and in the Preliminary Order Limits, in order to address uncertainties where some elements are yet to be confirmed. For the purposes of the PEI Report, the Preliminary Order Limits and the parameters of the Proposed Development are therefore

¹ Formerly the Institute of Environmental Management and Assessment (IEMA).

based on a suitable 'Rochdale Envelope' approach having regard to PINS' Advice Note Nine: 'Rochdale Envelope' (Ref. 4). This allows for a realistic 'worst-case' assessment to be undertaken and provides sufficient flexibility for the design to evolve.

- 6.3.2 The PEI Report establishes the relevant design parameters. Where uncertainty surrounds a particular parameter, the PEI Report assumes either a maximum or minimum design scenario (whichever is considered worse for that particular impact), i.e. it has established those parameters likely to result in the maximum adverse effect (the 'worst-case' scenario). The general parameters adopted for the PEI Report are described in section 3.4 of **Chapter 3: The Proposed Development** in PEI Report **Volume 2**.
- 6.3.3 The reasonable worst-case scenario for any given design parameter may vary by environmental aspect, depending on how that particular parameter may interact with the receptor being considered. Where this has been assumed, this is stated in the 'Assumptions and Limitations' sections within their respective technical topic chapter (**Chapters 7-22** in PEI Report **Volume 2**).
- 6.3.4 For the ES, more detailed information will be established during the design process of the Proposed Development for the EIA to be based upon; which may reduce the need for assessing design parameters. However, this will be judged for the ES on whether parameters remain the most appropriate for particular elements of the EIA.

6.4 Spatial Scope

- 6.4.1 As described in **Chapter 3: The Proposed Development** in PEI Report **Volume 2** (and shown on figures presented in PEI Report **Volume 3**), Preliminary Order Limits have been defined for the purposes of this PEI Report as the preliminary outer boundary within which it is currently envisaged all works, land acquisition and associated activities (temporary and permanent) for the Proposed Development will take place.
- 6.4.2 The land required for the Proposed Development, within the envelope of the Preliminary Order Limits (shown on **Figure 1-PD-1** in PEI Report **Volume 3**), is subject to change as design work progresses, considering environmental and technical factors, and consultation feedback. It is, however, considered to provide a sound basis for the purpose of identifying likely significant environmental effects in this PEI Report.
- 6.4.3 As described in **Chapter 3: The Proposed Development** in PEI Report **Volume 2**, for Parts 2 and 3 of the Proposed Development, the Preliminary Order Limits have been divided into an 'Indicative Work Area' and an 'Indicative Non-Work Area', as described below:

- a. **Indicative Work Area:** includes areas anticipated for temporary and/or permanent works associated with the Proposed Development; and
 - b. **Indicative Non-Work Area:** includes areas where no temporary or permanent works are proposed, however, which are required to operate the Proposed Development (i.e. the transfer of water from outfall to abstraction point).
- 6.4.4 For the avoidance of doubt, it is only Parts 2 and 3 of the Proposed Development where a differentiation between the Indicative Work and Non-Work Areas is necessary. For all other Parts of the Proposed Development (Parts 1a, 1b, 4a and 4b), there are no Indicative Non-Work Areas.
- 6.4.5 The spatial scope for each environmental aspect (the 'study area') is the area over which changes to the environment are predicted to occur as a consequence of the Proposed Development. The extents of the study area vary by topic; these are determined by the nature of the potential effects and the location of receptors that could be affected. Study area definition takes account of:
 - a. The physical area of the Proposed Development;
 - b. The nature of the baseline environment;
 - c. The manner and extent to which environmental impacts may occur; and
 - d. Relevant guidance, best practice and/or legislation.
- 6.4.6 The geographical extent of the study areas typically extend beyond the Preliminary Order Limits and vary depending on the environmental aspect and specific receptors or resources under consideration. For each aspect, the study area is of sufficient extents to encompass the spatial area over which impacts and effects on receptors or resources might occur.
- 6.4.7 Each of the technical methodologies (**Chapters 7-22** in PEI Report **Volume 2**) describes the study area to be considered, providing a clear explanation as to why the study area has been adopted. The spatial scope of each assessment may be refined for the ES in response to comments from consultees and/or further assessment or survey work. Where this is the case, it will be explained in the ES.

6.5 Technical scope

- 6.5.1 The technical scope of assessment for each environmental aspect is detailed in **Chapters 7-22** in PEI Report **Volume 2**, and this covers the scoping in and out of aspects and matters to be assessed as part of the EIA. Justification is provided in the EIA Scoping Report (**Appendix 5-PD-1** in PEI Report **Volume 4**) for the individual approach and scoping of matters to be

considered in the assessment for each environmental aspect. Where an effect has been subsequently scoped in or out (e.g. due to responding to EIA Scoping Opinion comments or as a result of new information), this has been described in the individual technical topic chapters (**Chapters 7-22** in PEI Report **Volume 2**).

- 6.5.2 The technical scope also details the approach to baseline data collection and assessment method (further described below).
- 6.5.3 The technical scope of each assessment may be refined in response to comments from consultees and/or further assessment or survey work. Where this is the case, it will be explained in the ES.

6.6 Temporal Scope

- 6.6.1 The temporal scope covers the time period over which changes to the environment and the resultant effects are predicted to occur, and are typically defined as either being temporary or permanent:
 - a. **Permanent:** these are effects that will remain even when the Proposed Development is fully built and operational, although these effects may be caused by environmental changes that are permanent or temporary; or
 - b. **Temporary:** these are effects that are related to environmental changes associated with a particular activity and that will cease when that activity finishes, primarily associated with the construction phase of the Proposed Development.
- 6.6.2 In order to predict the potential environmental effects of the Proposed Development, it is necessary to determine the environmental conditions that currently exist within the Preliminary Order Limits and surroundings, in the absence of the Proposed Development. These are known as 'baseline conditions'.
- 6.6.3 The PEI Report assesses the changes (impacts) to the current and future baseline during the construction and operation phases of the Proposed Development.

Baseline scenarios

- 6.6.4 The PEI Report identifies the following baseline scenarios:
 - a. **Existing baseline:** the current baseline conditions based on desktop studies and surveys. The baseline is the reference level of the environmental conditions without implementation of the Proposed Development, against which the potential impacts of the Proposed Development are to be assessed; and

- b. **Future baseline:** the future conditions without the Proposed Development in place, against which the potential impacts of the Proposed Development are to be assessed, if these conditions differ substantially from the existing baseline. When describing the future baseline scenario for each technical topic, the current baseline has been extrapolated to take account of anticipated change factors including, but not limited to, those caused by changing climatic conditions, natural evolution or planned management of habitats, changes to policy or legislation, new development anticipated to be fully built out and operational (including other EIA developments and infrastructure projects) to provide a description of the likely changes to the baseline environment over an appropriate timescale that can be supported by datasets and modelling. The future baseline years to be considered in the EIA comprise of:
- i. Peak year of construction works;
 - ii. Opening year the Proposed Development is fully built and operational; and
 - iii. 15 years after the opening year to allow for proposed landscaping to establish (only required for **Chapter 16: Landscape and Visual Amenity** in PEI Report **Volume 2**).

6.6.5 This process will be updated for the ES.

Assessment scenarios

6.6.6 The PEI Report considers the following assessment scenarios:

- a. **Construction assessment:** impacts from across the whole duration of the construction period has been considered within the environmental assessments. Where appropriate for some topics, such as traffic, air quality and noise and vibration, a peak year of construction has been assessed, as this will represent a worst-case scenario; and
- b. **Operational assessment:** impacts at the opening year of the Proposed Development has been considered. A further future year of assessment may also be considered for landscape and visual effects, when any mitigation planting has fully established.

6.6.7 As presented in the EIA Scoping Report (refer to **Appendix 5-PD-1** in PEI Report **Volume 4**), the decommissioning phase of the Proposed Development has been scoped out of the EIA in its entirety on the basis that the Proposed Development will be operated indefinitely.

6.6.8 However, the EIA Scoping Opinion (**Appendix 5-PD-2** in PEI Report **Volume 4**) states that “*The Inspectorate agrees that decommissioning can be scoped out of the ES on the basis that a high-level summary of potential effects for*

each environmental aspect is provided within the ES". This high level summary will be provided in the ES as appropriate.

- 6.6.9 Further details of any topic specific considerations for assessment scenarios are provided in **Chapters 7-22** in PEI Report **Volume 2**.
- 6.6.10 The environmental assessments use defined temporal scales to characterise the reversibility and duration of potential effects. When addressing the reversibility and duration of an effect, the following terminology has been used:
- a. **Temporary**: short-, medium- or long-term (e.g. a short-term temporary effect relates to an activity with a duration from several weeks to a few months, a medium-term temporary effect is estimated to be several months to a year and long-term estimated to be several years); and
 - b. **Permanent**: effects that are non-reversible, generally associated with the complete and operational Proposed Development.
- 6.6.11 The temporal nature of effects may extend longer than the phase in which the effects originally occur. For example, effects as a result of vegetation clearance during construction may be experienced for a number of years after construction has been completed, until any replanted habitats have matured. For the purposes of the EIA, the effects are described under the phase within which the impact arises, (i.e. in the above example, vegetation loss is assessed under the construction phase).

6.7 Determining the Baseline Conditions

- 6.7.1 The EIA Scoping process established which aspects of the environment are likely to be significantly affected by the Proposed Development. This identified:
- a. A component of the natural or built environment, such as people, wildlife, or buildings (collectively known as 'receptors') that could be significantly affected by the Proposed Development; and
 - b. The work required to take forward the assessment of the likely significant effects.

Sources of information

- 6.7.2 In order to understand the existing baseline conditions, a number of sources of information have been obtained and reviewed for each technical topic assessment. These sources include, but are not limited to:
- a. Desk-based assessments (e.g. reviewing publicly available information sources and purchased data, assessing pre-existing ecological data, and examining historical climate data);

- b. Field surveys (e.g. heritage walkover surveys, Phase 1 habitat surveys, and species surveys);
- c. Photography (e.g. to inform the landscape and visual impact assessment); and
- d. On-site monitoring (e.g. baseline noise monitoring).

6.7.3 The sources of information used to inform each technical topic assessment, and details of upcoming surveys and studies to be conducted for the ES, are described in the individual technical topic chapters (**Chapters 7-22** in PEI Report **Volume 2**).

‘Source-pathway-receptor’ approach

6.7.4 The EIA has adopted a conceptual ‘source-pathway-receptor’ approach which considers the following criteria:

- a. **Source:** location of a material or activity that may be harmful, i.e. the origin of the potential impacts (such as pipeline installation and a resultant impact, e.g. mobilisation of contaminants);
- b. **Pathway:** the route by which a harmful action or material is able to reach the receptor (e.g. the mobilisation of contaminants could enter a local surface waterbody); and
- c. **Receptor:** the component of the receiving socio-economic, natural or built environment or that is impacted, such as: humans, property, ecology, habitat, landscape, atmosphere, water (for the example above, species living within the local waterbody) or economy.

6.7.5 If a ‘source-pathway-receptor’ link has been identified, they are examined to assess the potential impact(s) upon a receptor, and ultimately the significance of the effect upon the receptor. In general, the impact assessment for each aspect has adopted this approach when considering the potential impacts arising during the construction (including any demolition and removal works) and operation (including maintenance) phases of the Proposed Development. This approach allows for a transparent impact assessment and clear justification as to why particular aspects are either scoped in or out of the EIA process. This approach is presented in **Plate 6-1**.

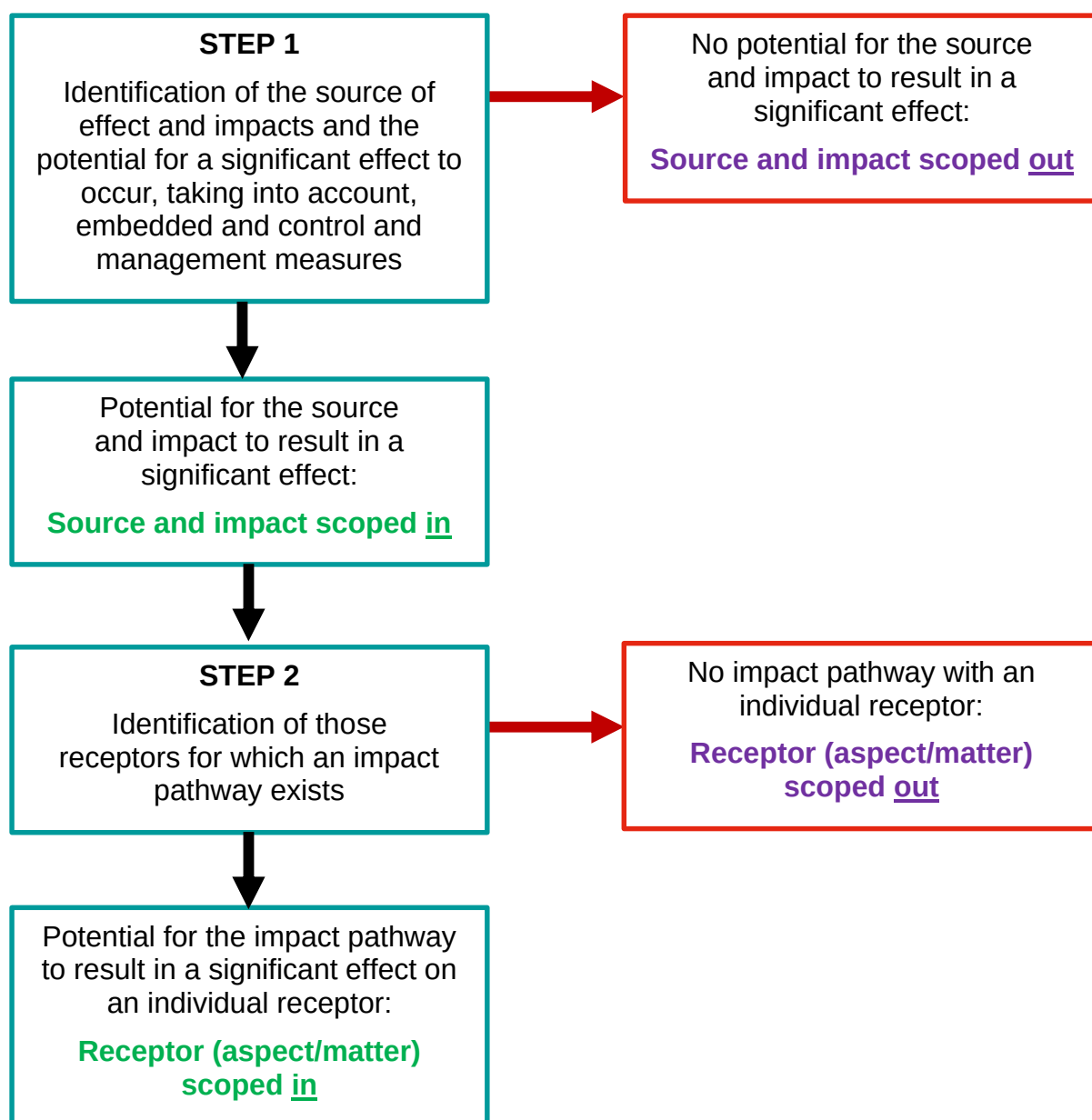


Plate 6-1: Process for determining ‘source-pathway-receptor’

6.8 Design Development, Impact Avoidance and Mitigation

Categories of Mitigation Measures

- 6.8.1 In accordance with Regulation 14(2)(c) of the EIA Regulations (Ref. 1), this PEI Report has (and forthcoming ES will) include a description of the “...measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment”.
- 6.8.2 The Proposed Development has adopted a standard hierarchical approach – as defined in ISEP’s ‘Implementing the Mitigation Hierarchy from Concept to Construction’ (Ref. 5) – to identifying mitigation requirements:

- a. **Avoid or Prevent:** In the first instance, mitigation will seek to avoid or prevent the adverse effect at source, for example by routing the proposed pipeline away from a sensitive receptor;
- b. **Reduce:** If the effect is unavoidable, mitigation measures have been (will be) implemented which seek to reduce the significance of the effect for example, the use of planting of trees to visually screen the visibility of proposed buildings / structures at a nearby sensitive receptor; and
- c. **Offset:** If the effect can neither be avoided nor reduced, mitigation will seek to offset the effect through the implementation of compensatory mitigation, for example habitat creation to replace any habitat losses.

6.8.3 For each environmental aspect, the EIA process systematically identifies impacts and effects and takes into consideration mitigation measures that the Proposed Development will adopt. These mitigation measures include avoidance, best practice and design commitments, which are classified into the following:

- a. **Embedded mitigation (inherent):** Measures which form part of the design of the Proposed Development. They can include modifications to the location, design or operation of the Proposed Development made during the pre-application phase. Examples would include amending the location of the Proposed Development (e.g. pipeline route) to avoid a sensitive feature such as a designated nature conservation site or reducing the height of a structure to minimise visual effects. They form an inherent part of the Proposed Development (as presented in **Chapter 3: The Proposed Development** in PEI Report **Volume 2**), which may have resulted from consideration of alternative design (as described in **Chapter 4: Consideration of Alternatives** in PEI Report **Volume 2**), and do not require additional action to be taken. These are referred to as 'design and control measures'. The assessment of likely significant effects takes these measures into account when drawing conclusions regarding significance of effects;
 - i. The iterative design evolution process involves collaborative working between the design and environment. This may be through the consideration and adoption of alternatives or through measures incorporated within the final design of the Proposed Development and Design Principles (including the Canalside Design Principles). Where possible, these measures have been (and will be) developed with input from key stakeholders together with appropriate technical standards, policies and guidance.

- b. **Standard measures (inexorable):** Measures that would occur with or without input from the EIA feeding into the design development process (as presented in **Chapter 3: The Proposed Development** in PEI Report **Volume 2**). These include actions that will be undertaken to meet other existing legislative requirements or actions that are considered to be standard good practice used to manage commonly occurring environmental effects. Examples include construction management measures implemented to meet statutory standards concerning the risk of, for example, nuisance or pollution effects. These are also referred to as 'design and control measures'. The assessment of likely significant effects takes these measures into account when drawing conclusions regarding significance of effects; and
 - c. **Additional mitigation (foreseeable):** Following the initial assessment of likely effects (which takes into consideration the implementation of embedded mitigation and standard measures), additional mitigation may be identified to avoid, prevent, reduce or, if possible, offset significant adverse effects. Additional mitigation are measures that require further activity in order to achieve the anticipated outcome, for example action post-consent. Examples could also include an Archaeological Written Scheme of Investigation (WSI) which outlines proposals for further investigation post-consent. This form of mitigation (which can include monitoring) is identified in the EIA process based on any initial identified significant effects. They seek to avoid, minimise or offset adverse effects, where practicable. Any identified need for additional mitigation is described in the relevant individual technical topic chapters (**Chapters 7-22** in PEI Report **Volume 2**).
- 6.8.4 Furthermore, enhancement measures will be considered, where practicable, to actively seek to create positive environmental and social outcomes of the Proposed Development.
 - 6.8.5 All mitigation identified in the PEI Report is collated into the preliminary Environmental Commitments Register (**Appendix 24-PD-1** in PEI Report **Volume 4**). This sets out who will be responsible for implementing mitigation measures and at what stage of the Proposed Development (e.g. pre-construction, during construction, post-construction, during operation).
 - 6.8.6 The preliminary Environmental Commitments Register will be updated for the ES, reflecting the final Proposed Development design and updated EIA.
 - 6.8.7 The individual technical topic chapters (**Chapters 7-22** in PEI Report **Volume 2**) identify the anticipated effects of the Proposed Development following the implementation of all mitigation to determine the 'residual

effects'. A clear statement is made as to whether the residual effects (both adverse and beneficial) are significant or not significant.

Monitoring

- 6.8.8 In accordance with Schedule 4, Regulation 7 of the EIA Regulations (Ref. 1), this PEI Report has (and forthcoming ES will) identifies “...*any proposed monitoring arrangements (for example the preparation of a post-project analysis)*”.
- 6.8.9 Where appropriate, this PEI Report outlines proportionate monitoring methods to be employed to ensure the effectiveness of mitigation. This sets out who is likely to be responsible for monitoring, and the setting of clear objectives and parameters for monitoring. The PEI Report also identifies the actions that will be undertaken should monitoring results fall below these set parameters.

6.9 Significance of Effect Criteria

- 6.9.1 For consistency, and to allow comparison between aspects, the methodology described in this section is applied in the individual technical topic chapters (**Chapters 7-22** in PEI Report **Volume 2**). This methodology considers whether impacts of the Proposed Development would have an effect on any environmental receptors. Assessments consider the magnitude of impacts and the sensitivity of resources or receptors that could be affected in order to classify the significance of effects.
- 6.9.2 The conclusion that is made on whether an effect should be considered 'significant' is based upon professional judgement, with reference to the description of the Proposed Development and available information about:
- a. The magnitude and other characteristics of the potential changes (impacts) that are expected to be caused by the Proposed Development;
 - b. The sensitivity or, where relevant, value of receptors to these changes; and
 - c. The effects of these changes on relevant receptors.
- 6.9.3 For each environmental aspect, the categories of resource or receptor sensitivity and magnitude of impact is described or defined.
- 6.9.4 The sensitivity or value of a receptor is largely the product of the importance of an asset, as informed by legislation and policy, and as qualified by professional judgement. For example, higher value receptors for landscape, biodiversity or the historic environment may be defined as being of international or national importance; lower value resources may be designated as being sensitive or important at a county or district level.

- 6.9.5 The use of a receptor also plays a part in the classification of its value or sensitivity. For example, when considering visual amenity, a receptor which is residential in nature may be valued more than a place of work as the environmental quality of the residential receptor is more likely to be an important part of that receptor's use.
- 6.9.6 General criteria for defining the importance or sensitivity of receptors are set out in **Table 6-1**.

Table 6-1: Sensitivity of receptors

Sensitivity	Description
High	Receptor has little or no ability to absorb change without fundamentally altering its character. For example: • Receptor has no / minimal capacity to return to baseline conditions within the project life, e.g. low tolerance to change and low recoverability such as a physical feature formed over a geological time scale, or loss of access with no alternatives; • The receptor is a designated feature of a protected site or is rare or unique; or • Receptor is economically valuable (e.g. agricultural land holdings).
Medium	Receptor has moderate capacity to absorb change without significantly altering its character; however, some damage to the receptor will occur. For example: • Receptor has intermediate tolerance to change; • Medium capacity to return to baseline condition, e.g. >5 of up to 10 years; or • The receptor is valued but not protected.
Low	The receptor is tolerant to change without significant detriment to its character. Some minor damage to the receptor may occur. For example: • Receptor has high tolerance to change; • High capacity to return to baseline condition, e.g. within 1 year or up to 5 years; or • The receptor common and/or widespread.
Very Low	The receptor is tolerant to change with no effect on its character. The Project activity does not have a detectable effect on survival or viability.

- 6.9.7 The magnitude of change affecting a receptor that would result from the Proposed Development is identified on a scale from minor alterations or change, up to major changes or the total or substantial loss of the receptor. For certain aspects, the magnitude of change would be related to guidance on levels of acceptability (e.g. for air quality or noise) and is therefore based

on numerical parameters. For others (e.g. for landscape and visual) it is a matter of professional judgement to determine the magnitude of change, using descriptive terminology.

- 6.9.8 **Table 6-2** sets out the guidelines of the assessment of the magnitude of impact. Where relevant, individual technical topic chapters set out variations in magnitude description requirements.

Table 6-2: Impact magnitude

Magnitude of Impact	Description
High	Long-term and/or regional level loss; or major alteration to key elements / features of the baseline condition such that post-development character / composition of the baseline will be fundamentally changed.
Medium	Medium-term loss and/or local level change (greater than the Proposed Development's footprint) or alteration to one or more key elements / features of the baseline conditions such that post-development character / composition of the baseline condition will be materially changed.
Low	Short-term, site-specific and/or a minor shift away from baseline conditions. Changes arising from the alteration will be detectable but not material; the underlying character / composition of the baseline condition will be similar to the pre-development situation.
Very Low	Very little change from baseline conditions. Change is barely distinguishable, approximating to a 'no change' situation.

- 6.9.9 The individual technical topic chapters (**Chapters 7-22** in PEI Report **Volume 2**) provide greater detail on the approach to the assessment and specific guidelines for the definition of impact magnitude and resource or receptor sensitivity. Where applicable standards mandated by professional bodies (e.g. the Chartered Institute of Ecology & Environmental Management [CIEEM] or the Landscape Institute [LI]) are also considered.

Determining significance

- 6.9.10 The significance of effects is derived with reference to information about the nature of the Proposed Development, the sensitivity or value of receptors that could be affected, together with the magnitudes of change that are likely to occur.
- 6.9.11 For many environmental aspects, significance can be determined by using a matrix. Variations to this matrix approach, which may be applicable to specific environmental aspects are detailed within the respective technical topic chapters (**Chapters 7-22** in PEI Report **Volume 2**), along with

descriptions of receptor sensitivity, magnitude of change and levels of effect that are considered '**significant**'. Definitions of how the categories that are used in the matrix are derived for each environmental aspect are also set out.

- 6.9.12 In addition, professional judgement is applied in the assessment, as the boundaries between the sensitivities or magnitudes of change may not be clearly defined and the resulting assessment conclusions may need clarifying.
- 6.9.13 The overarching significance matrix that has been used to classify effects is shown in **Table 6-3**. Reference is made to:
- Major**: which will always be determined as being significant;
 - Moderate**: can be significant, or not significant, based on specific scenarios and/or professional judgement; and
 - Minor or negligible**: which will always be deemed as not significant.

Table 6-3: Classification of effects

Magnitude	Value and sensitivity of receptor			
	Very Low	Low	Medium	High
Very Low	Negligible	Negligible	Minor	Minor
Low	Negligible	Minor	Minor	Moderate
Medium	Minor	Minor	Moderate	Major
High	Minor	Moderate	Major	Major

- 6.9.14 **Table 6-4** provides general definitions of effects, although this may vary depending upon the topic. Where relevant, the respective technical topic chapter (**Chapters 7-22** in PEI Report **Volume 2**) provide any alternative definitions.

Table 6-4: Generic effect definitions

Effect	Criteria
Major	These effects may represent key factors in the decision-making process. Potentially associated with sites and features of national importance or likely to be important considerations at a regional or district scale. Major effects may relate to resources or features which are unique and which, if lost, cannot be replaced or relocated.
Moderate	These effects, are likely to be important at a local scale and on their own could have a material influence on decision making.
Minor	These effects may be raised as local issues and may be of relevance in the detailed design of the project but are unlikely to be critical in the decision-making process.

Effect	Criteria
Negligible	Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision making, irrespective of other effects.

6.9.15 Effects can be either **beneficial** or **adverse**.

6.10 Combined Effects for the Proposed Development as a Whole

6.10.1 PINS' guidance on 'Nationally Significant Infrastructure Projects: Advice on Preparing Applications for Linear Projects' (Ref. 6):

"In preparing Environmental Statements [ES] for linear projects, applicants should ensure that the accumulation of adverse or beneficial effects are reported not only ES geographic section by section, but also across ES section boundaries and across the project as a whole."

6.10.2 In addition, PINS' 'Advice on Cumulative Effects Assessment' (Ref. 7) includes the following:

"Development related to the NSIP [Nationally Significant Infrastructure Project] (including permitted development)

A proposed NSIP may comprise multiple sites in different locations, for example where offsite highways improvements are required. This may include development where consent is sought under a different planning regime such as the Town and Country Planning Act 1990. In these circumstances, the applicant should consider if cumulative effects could arise from the different development components of their NSIP, as well as with other existing and, or approved development."

6.10.3 As explained in **Chapter 1: Introduction** and **Chapter 3: The Proposed Development** (PEI Report **Volume 2**), for the purposes of the EIA, the Proposed Development has been split into six distinct components (i.e. 'Parts'):

- a. Part 1a – Minworth AWTP;
- b. Part 1b – Minworth to Atherstone Pipeline;
- c. Part 2 – Works to the Coventry, Oxford and Grand Union canals;
- d. Part 3 – Works to Daventry and Drayton Reservoirs;
- e. Part 4a – Abstraction, Storage and Treatment; and
- f. Part 4b – Pipeline to an Existing Underground Reservoir near Luton.

6.10.4 In response to the PINS advice referenced above, and in recognition that there could be potential combined effects between Parts of the Proposed

Development, the PEI Report includes an assessment of project-wide effects. For the Proposed Development, the potential for additional project-wide (**combined**) effects arise from the following interfaces:

- a. Where Parts 1a and 1b geographically connect;
- b. Where Parts 1b and 2 geographically connect;
- c. Where Parts 2 and 3 geographically connect;
- d. Where Parts 2, 4a and 4b geographically connect in a spatial triangle; and
- e. Where Parts 4a and 4b geographically connect.

6.10.5 To undertake this project-wide (combined) assessment, the findings of the individual chapters for each Part for those receptors screened in (see Step 1 below), has been reviewed to understand and interpret the potential additional effects that may be of greater significance when compared to individual effects arising from one of the six Parts of the Proposed Development. Where additional effects are identified, these are considered additively and qualitatively using professional judgement.

6.10.6 The EIA has first been based on a 'section-by-section' (or 'Part-by-Part') approach for each Part of the Proposed Development and then a 'project-wide' basis. This ensures the EIA considers not only the individual effects arising from each Part but also the combined total effects of the project as advised in the previously mentioned guidance (see above).

6.10.7 The approach undertaken for this assessment is summarised in the following steps.

- a. **Step 1: Screening, review and identification of shared receptors** – Review and identification of shared receptors from assessments undertaken for each technical topic chapter; and
- b. **Step 2: Source-pathway-receptors identification** – Assessment of project-wide (combined) effects for any shared receptors identified under Step 1.

Step 1: Screening, review and identification of shared receptors

6.10.8 Residual effects, which are classified as negligible are excluded from the assessment of project-wide (combined) effects as, by virtue of their definition, they are considered to be imperceptible effects to an environmental / socio-economic resource or receptor.

6.10.9 For those residual effects that are concluded to be minor, moderate or major, an initial screening of the receptors identified as having the potential for combined effects has been undertaken. This is based on overlapping study

areas of the connecting Parts previously listed (see paragraph 6.10.4). This varies depending upon the technical topic assessment.

6.10.10 These identified shared receptors are taken forward to Step 2.

Step 2: Source-pathway-receptors identification

6.10.11 This stage assesses whether the shared receptors are impacted by both / multiple Parts of the Proposed Development, resulting in a combined effect.

6.10.12 Even though a combined effect may be identified, the level of significance may remain the same as conclude for the individual Parts. For instance, if two minor adverse (not significant) effects combine on a shared receptor, this could still remain in as minor adverse (not significant). However, where combined effects result in a change of significance level, these are identified, as well as consideration of any new or amended mitigation.

6.10.13 The project-wide (combined) assessment is presented at the end of each technical topic chapter (**Chapter 7-22** in PEI Report **Volume 2**).

6.10.14 This assessment will be updated for the ES.

6.11 Cumulative Effects Assessment

6.11.1 The cumulative effects assessment (CEA) examines the result from the combined impacts of the Proposed Development with other developments on the same single receptor or resource as required under Paragraph 5 of Schedule 4 of the EIA Regulations (Ref. 1). The interaction of environmental effects occurring as a result of the Proposed Development has been assessed in accordance with Regulation 5(2) of the EIA Regulations.

6.11.2 The PEI Report includes the assessment of two types of cumulative effects: **effect interactions** (also known as 'in-combination' effects) and **cumulative effects with other developments**. These are described further in the following sections. These two assessments are presented in **Chapter 23: Cumulative Effects and Interactions** in PEI Report **Volume 2**.

Effect Interactions

6.11.3 Regulation 5(2)(e) of the EIA Regulations (Ref. 1) requires that the ES considers the interaction between factors listed in sub-paragraphs (a) to (d) (i.e. population and human health, biodiversity, land, soil, water, air and climate, material assets, cultural heritage and the landscape) associated with a proposed development. In-combination effects are those that result from the interaction between the individual effects of the Proposed Development (i.e. interaction of environmental aspects such as air quality and noise), combined together on a single receptor or resource at a single point in time. The interaction between the individual effects may combine to result in a significant effect, even where the individual effects were not significant.

- 6.11.4 There are no specific, relevant guidelines on how the assessment of effect interactions should be undertaken, and so the assessment is undertaken on a qualitative basis, using the results of the individual technical topic assessments, informed by professional judgement.
- 6.11.5 The individual technical topic chapters (**Chapters 7-22** in PEI Report **Volume 2**) predict beneficial and adverse effects during the construction and operational phases of the Proposed Development, which are classified as minor, moderate or major. Where several of these effects occur on one receptor or receptor group, they could theoretically interact or combine to produce a combined significant overall effect.
- 6.11.6 Residual effects, which are classified as negligible are excluded from the assessment of the effect interactions as, by virtue of their definition, they are considered to be imperceptible effects to an environmental / socio-economic resource or receptor.
- 6.11.7 The effects on receptors or receptor groups are tabulated to determine the potential for effect interactions and, therefore, any combined effects. Criteria set out within are used to determine the significance of effect interactions.
- 6.11.8 **Table 6-5** provides the effects interactions significance criteria.

Table 6-5: Effect interactions significance criteria

Significance category	Typical descriptors of effect
Major	Where the combined impacts of the Proposed Development upon an individual or collection of environmental receptors would be highly significant (beneficial or adverse). Effects would be: • Widespread / large-scale for receptors of high value; or • Permanent for a receptor or receptors of high value.
Moderate	Where the combined impacts of the Proposed Development upon an individual or collection of environmental receptors would be significant (beneficial or adverse). Effects would be: • Permanent for a receptor or receptors of medium value; • Localised for a receptor or receptors of high value; or • Temporary for a receptor or receptors of high value.
Minor	Where the combined impacts of the Proposed Development upon an individual or collection of environmental receptors would be noteworthy but not significant (beneficial or adverse). Effects would be: • Permanent for a receptor or receptors of low value; • Localised for a receptor or receptors of medium value; or • Temporary for a receptor or receptors of medium value.

Significance category	Typical descriptors of effect
No significant effect interactions	Where the combined impacts of the Proposed Development are not likely to lead to a change in the effects at a receptor, when compared with these impacts in isolation.

6.11.9 The effects interactions assessment is presented in **Chapter 23: Cumulative Effects and Interactions** in PEI Report **Volume 2**. The assessment will be updated in the ES.

Cumulative Effects with Other Developments

6.11.10 As outlined in Paragraph 5(e) under Schedule 4 of the EIA Regulations (Ref. 1), the ES is required to consider “...*the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources*”.

6.11.11 The effects of the Proposed Development together with the effects of other developments / schemes may result in significant cumulative effects. This may be the result of effects on the environment during the construction or operation phases of the Proposed Development.

6.11.12 The cumulative effects assessment methodology used in this PEI Report is based on the PINS’ ‘Guidance: Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment’ (Ref. 5) on the assessment of cumulative effects, which identifies a four-stage approach, as follows:

- a. **Stage 1: Establish the zone of influence and identify a long list of ‘other developments’ (the ‘development schedule’);**
- b. **Stage 2: Identify a shortlist of ‘other developments’ for the cumulative impact assessment;**
- c. **Stage 3: Information gathering;** and
- d. **Stage 4: Assessment.**

6.11.13 The cumulative assessment (to be presented in Chapter 23: Cumulative Effects and Interactions in the ES) will be undertaken on a ‘topic-by-topic’ basis rather than ‘scheme-by-scheme’ as recommended by Annex 2 of PINS’ Advice on Cumulative Effects Assessment. This is done so that a cumulative effects assessment of the Proposed Development with all identified other developments can be provided. Information recommended to be provided by Annexes 1 and 2 of PINS’ Advice on Cumulative Effects Assessment will also be presented in the ES.

6.11.14 In general, where the Proposed Development results in a negligible effect, it will not be considered that the Proposed Development could significantly

contribute to a cumulative effect with other developments. This is because, by virtue of their definition, negligible effects are considered to be imperceptible changes to an environmental / socio-economic resource or receptor. Therefore, the cumulative effects assessment (as presented in **Chapter 23: Cumulative Effects and Interactions** in PEI Report **Volume 2**) focused on effects of the Proposed Development that are minor, moderate and major.

Stage 1: Establishing the long list of other developments

- 6.11.15 The Stage 1 activities include establishing the Proposed Development's likely Zones of Influence (ZOI) associated with each of the environmental topic areas assessed in the ES. **Table 6-6** sets out the expected ZOIs identified for each environmental topic, which will be confirmed within the ES. **Figures 6-PD-1 to 6-PD-2** in PEI Report **Volume 3** show the ZOI distances from the Preliminary Order Limits that the environmental topics will assess in the ES.
- 6.11.16 A long list of other developments has been collated on the basis of the search criteria set out within **Table 6-7**. For planning applications granted under the Town and Country Planning Act 1990 (Ref. 8), it is assumed that any development with a consent older than five years will have been built out or lapsed after a, typically, three-year commencement deadline has passed. As such, planning applications made under the Town and Country Planning Act 1990 from the last five years are considered.
- 6.11.17 In considering cumulative impacts, it is essential to assess whether any large-scale, long-term development projects consented more than five years ago will have construction timelines that overlap with the construction phase of the Proposed Development. This has also been evaluated to ensure that any combined effects from concurrent developments are appropriately addressed within the assessment.
- 6.11.18 Each development within the long list of other developments has been reviewed to determine its status at the time of undertaking the preliminary assessment and assigned a status and tier, as described in **Table 6-8**, informed by the guidance and levels presented within of PINS's Advice on Cumulative Effects Assessment and Annex 1 of the Note.

Table 6-6: Zol extents for assessment of potential cumulative effects

EIA Topic	Zol Extent
Agriculture and Soils	250 metres (m) from the Preliminary Order Limits.
Air Quality and Odour	Dust, odour, other particulate matter emissions from construction works: • Within 250 m from the Preliminary Order Limits; • Within 50 m from the routes expected to be affected by the construction phase traffic for a distance of up to 0.5 kilometres (km) from the Preliminary Order Limits access / egress points; and • Up to 250 m from the Preliminary Order Limits access / egress point with the public highway. Road traffic emissions: • Within 200 m from all roads that trigger the traffic flow screening criteria, referred to as the affected road network (ARN).
Carbon and Climate	Greenhouse Gas (GHG) emissions assessment – no cumulative assessment undertaken, refer to Chapter 10: Climate in PEI Report Volume 2. Climate Change Resilience – within the Preliminary Order Limits. In-combination Climate Impacts – reflects other technical topic chapters (Chapters 7-22 in PEI Report Volume 2).
Cultural Heritage	500 m of the Preliminary Order Limits for Parts 1b, 2, 3 and 4b, and 1 km for Parts 1a and 4a for designated heritage assets. 500 m of the Preliminary Order Limits for all Parts for non-designated heritage assets.
Ecology – Aquatic & Terrestrial	2 km from Preliminary Order Limits for protected and noticeable species. 10 km from Preliminary Order Limits for international and national nature conservation designations.
Ground Conditions	250 m for land contamination and 1 km for hydrogeology receptors.
Human Health	Reflects other technical topic chapters (Chapters 7-22 in PEI Report Volume 2).
Landscape and Visual	3 km from Preliminary Order Limits for Parts 1b, 2, 3 and 4b, and 5 km from Preliminary Order Limits for Parts 1a and 4a.
Major Accidents and Disasters	5 km from Preliminary Order Limits.

EIA Topic	Zol Extent
Materials and Waste	Primary Zol comprises the Preliminary Order Limits for waste and materials. Secondary Zol covers the local authority administrative boundaries, the Midlands and the UK for material resources.
Noise and Vibration	300 m from Preliminary Order Limits for construction and operational noise. 100 m from Preliminary Order Limits for construction vibration. 50 m from modelled road links.
Socio-economics	Up to a 60-minute drive time area from Preliminary Order Limits for economy and employment effects. 2 km from Preliminary Order Limits for other effects (e.g. effects on Public Rights of Way [PRoW] and canal towpaths, land use impacts and impacts on local and private assets).
Traffic and Transport	Zol is established by determining the most probable routes for construction traffic for both the movement of materials and employees once the locations of the construction compounds have been finalised. In addition, any roads crossed by the Proposed Development (e.g. for the construction of new pipelines) through open cut techniques (rather than trenchless, which will not impact on traffic flows), as well as junctions in proximity to such crossings will form part of the transport and traffic Zol. The extent of the assessment is dependent on the type of construction proposed for such crossings (e.g. if road closures will be required for a certain amount of time then a larger extent may be required due to potential route diversions) or just partial closures.
Water Environment and Food Risk	The Zol for hydrological changes comprises: • The Rivers Tame and Trent; • The whole route of Coventry Canal, Oxford Canal and Grand Union Canal, including hydraulically connected canal arms, within Part 2 of the Proposed Development; • Drayton and Daventry Reservoirs within Part 3 of the Proposed Development; • Watercourses crossed by Parts 1b and Part 4b of the Proposed Development; and • Full extent of Water Framework Directive (WFD) groundwater bodies hydraulically connected to the Proposed Development. The Zol with respect to groundwater takes account of the WFD groundwater bodies and associated hydraulic connections with and supporting contributions to groundwater abstractions, groundwater discharges, karst landforms (if any), groundwater flood risk areas and groundwater dependent terrestrial ecosystems (GWDTE).

EIA Topic	ZoI Extent
	The ZoI therefore represents the maximum possible extent of any hydrogeological impact of the Proposed Development; however, it does not mean that all receptors identified within the ZoI will be impacted or even considered as part of the impact assessment. The criteria for impact assessment has been developed during the assessment period.

Table 6-7: Search criteria for other developments

Other Development		No. of housing units	House land (ha*)	Non-residential floorspace (sqm**)	Non-residential floorspace (ha)	Distance from Preliminary Order Limits
Nationally Significant Infrastructure Projects (NSIP)		N/A	N/A	All	All	5 km
Other Strategic Resource Options (SRO)		N/A	N/A	All	All	5 km and any other SROs impacting on the same watercourses as the Proposed Development
Transport and Works Act Orders; Mineral and Waste EIA applications; and Transport Allocations in non-statutory plans (e.g. Local Transport Plans)		N/A	N/A	All	All	5 km
Town and Country Planning Act 1990 (Ref. 8) Applications or Allocations within Local Plans	Large Scale Major	≥ 200	> 4	>10,000	> 2.0	5 km
	Small Scale Major	10 - 199	0.5 - 4.0	1,000 - 10,000	1.0 - 2.0	1 km
	Minor non-householder	1 - 9	< 0.5	< 1,000	< 1.0	500 m

[* Hectares; ** Square metres]

Table 6-8: Other development tier status criteria

Tier	Stage	Decreasing level of information likely to be available
1	Under Construction	
	Permitted application(s), whether under the Planning Act 2008 (Ref. 9) or other regimes, but not yet implemented. Submitted application(s) whether under the Planning Act 2008 or other regimes but not yet determined.	
2	Projects in PINS's Programme of Projects where a scoping report has been submitted.	
3	Projects in PINS's Programme of Projects where a scoping report has not been submitted.	
	Identified in the relevant development plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information on the relevant proposals.	
	Identified in other plans and programmes (as appropriate) which set the framework for future developments consents / approvals, where such a development is likely to come forward.	

Stage 2: Establishing a shortlist of other developments

6.11.19 This stage involves reviewing the long list of other developments to identify those to be taken forward ('shortlisted') into the cumulative assessment.

6.11.20 The shortlisting process involves the application of inclusion / exclusion criteria and is informed by the professional judgement of the environmental specialists undertaking the EIA and through engagement with the relevant local planning authorities. The criteria for determining which other developments to shortlist for the cumulative effects assessments include considering: the temporal overlap of the other developments with the Proposed Development (e.g. overlapping construction programmes), the level of information available for them and their likelihood to result in cumulative effects with the Proposed Development on the basis of their nature, scale or location.

6.11.21 Developments and projects that are already in existence, i.e. those which are completed and operational, are considered to form part of the existing environmental baseline conditions within which the Proposed Development is implemented.

6.11.22 Similarly, where other developments are expected to be completed prior to the construction of the Proposed Development, and where the effects of those projects are fully determined, these are considered within the future environmental baseline adopted in the PEI Report.

6.11.23 In determining which of the developments should be shortlisted, a minimum level of information is necessary. In accordance with PINS' Advice on

Cumulative Effects Assessment, generally only developments with at least an EIA Scoping Report, PEI Report or ES available have been considered for shortlisting.

6.11.24 This stage has been undertaken for the PEI Report (with the preliminary shortlist of other developments presented in **Appendix 23-PD-2** in PEI Report **Volume 4**), and will be updated for the ES.

Stage 3: Gathering Information

6.11.25 This stage involves reviewing the available information relating to the shortlisted other developments to establish the details of their likely environmental effects.

6.11.26 This considers factors including: the ZoI of environmental topics assessed; the planned timescales for construction and operation; and details of their potential or likely significant effects.

6.11.27 This stage will be undertaken for the ES only.

Stage 4: Assessment

6.11.28 This stage involves identifying where cumulative effects are likely to occur with the shortlisted other developments and assessing the significance of those effects on environmental receptors and resources, taking into account any mitigation measures. The cumulative effects assessment will use the same significance criteria as adopted for each technical topic chapter (**Chapters 7-22** in PEI Report **Volume 2**).

6.11.29 This stage will be undertaken for the ES only.

6.12 Other Assessments

6.12.1 The EIA has been undertaken considering other relevant environmental assessments, with a view to avoiding duplication. A summary of other relevant environmental assessments required by various legislation and policy is provided below.

Habitats Regulations Assessment

6.12.2 A Habitats Regulations Assessment (HRA) will be undertaken by the Secretary of State (SoS) for all Habitats sites² within the national site network that could be impacted by the Proposed Development, including:

² The UK left the European Union (EU) on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 (termed the 'Withdrawal Act'. However, the most recent amendments to the 'Habitats Regulations' (i.e. Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 make it clear that the need for HRA continues to apply. The 2019 Regulations make

- a. Special Areas of Conservation (SAC) and proposed SACs;
 - b. Special Protection Areas (SPA) and proposed SPAs;
 - c. Ramsar sites; and
 - d. Areas secured as sites compensating for damage to European sites.
- 6.12.3 The Applicants will prepare a report to inform the HRA in accordance with The Conservation of Habitats and Species Regulations 2017 (Ref. 10), relevant guidance (Ref. 11, Ref. 12, Ref. 13 and Ref. 14) and case law (Ref. 15 and Ref. 16). The report to inform the HRA will consider the likely significant effects (LSE) of the Proposed Development on the conservation objectives of protected sites. A summary of the protected sites within the Zone of Influence (ZoI) of the Proposed Development is provided within **Chapter 12: Ecology – Aquatic** and **Chapter 13: Ecology – Terrestrial** in PEI Report **Volume 2**.
- 6.12.4 Whilst the HRA decisions must be taken by the Competent Authority (in this case, the SoS) the information needed to support this decision-making must be provided by the Applicant. The information needed for the Competent Authority to establish whether there are any LSEs or adverse effects on integrity from the Proposed Development will therefore be provided in the HRA Report, as part of the DCO application.
- 6.12.5 As part of the Regulators' Alliance for Progressing Infrastructure Development (RAPID) process, the Applicants have undertaken assessment of potential impacts on Habitats sites within the national site network at Gate 2 and at Gate 3. Natural England has been involved in the work to date. The work undertaken for the RAPID process is summarised in the updated HRA Screening Report (included in **Appendix 13-PD-5** in PEI Report **Volume 4**) and includes a LSE test.
- 6.12.6 The HRA for those identified LSEs will be undertaken in parallel (i.e. "co-ordinated") with the EIA, as required under Regulation 26 of the EIA Regulations (Ref. 1).
- 6.12.7 A final HRA Report will be submitted with the DCO application.

Water Framework Directive Compliance Assessment

- 6.12.8 A Water Framework Directive (WFD) Compliance Assessment will be undertaken in accordance with The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref. 17) and relevant

changes to the Habitats regime and terminology, such as by introducing the term 'national site network' and 'Habitats sites'. As such, in line with current practice, the term 'Habitats sites' is used to refer to all former Natura 2000 sites in line with current standard practice (comprising SACs and SPAs) potentially affected by the Proposed Development.

guidance (Ref. 18, Ref. 19 and Ref. 20). This will consider the extent to which the Proposed Development could impact on the current and future target WFD status of water bodies, including those of the Rivers Tame and Trent.

- 6.12.9 A WFD assessment of the current design iteration of the Proposed Development has been completed at Gate 2 and updated at Gate 3, as part of the RAPID process; these assessments focused on the Proposed Development operation. A summary of this work, as well as scoping of construction phase impacts and the proposed scope of further detailed assessment is presented in a Preliminary WFD Assessment Report, which was appended to the EIA Scoping Report (included in **Appendix 5-PD-1** in PEI Report **Volume 4**).
- 6.12.10 The findings of the WFD assessment will be used to inform the EIA and will aid in the identification of mitigation, as set out within **Chapter 22: Water Environment and Flood Risk** in PEI Report **Volume 2**. A Preliminary WFD Assessment Report is available in **Appendix 22-PD-2** in PEI Report **Volume 4**.
- 6.12.11 A final WFD Compliance Assessment will be submitted with the DCO application.

Flood Risk Assessment

- 6.12.12 A Flood Risk Assessment (FRA) will be undertaken to consider the risk of flooding to and from the Proposed Development in accordance with the National Policy Statement for Water Resources Infrastructure (NPSWRI) (Ref. 21), National Planning Policy Framework (NPPF) (Ref. 22) and Planning Practice Guidance (PPG) (Ref. 23).
- 6.12.13 A Preliminary FRA has been prepared to inform the EIA, as set out within **Chapter 22: Water Environment and Flood Risk** of PEI Report **Volume 2**, and appended to the PEI Report (**Appendix 22-PD-3** in PEI Report **Volume 4**).
- 6.12.14 The final FRA will be appended to the ES.

Biodiversity Net Gain and Environmental Net Gain

- 6.12.15 Early strategy work to incorporate Biodiversity Net Gain (BNG) within the Proposed Development has been undertaken. As BNG is not an EIA matter, a separate BNG Report, in accordance with the NPSWRI (Ref. 21) and the Environment Act 2021 (Ref. 24), will be prepared for submission with the DCO application. A BNG score for the Proposed Development will be calculated using Defra's statutory biodiversity metric tools and guides (Ref. 25) (or the equivalent available tools at the time of the DCO application submission).

6.12.16 A high-level BNG assessment has been completed for the Proposed Development on the basis of the current design proposals, as part of the RAPID process. This will be developed further and a BNG Report will be submitted with the DCO application. However, a BNG Statement has been prepared for the PEI Report, provided in **Appendix 13-PD-6** in PEI Report **Volume 4**.

6.12.17 The government has consulted on BNG requirements for NSIPs. They are proposing introducing BNG for NSIPs from May 2026. This requirement and its implications for this project will be assessed as more details become available.

Environmental Net Gain

6.12.18 In addition to delivering BNG, NPSWRI states that:

“...developments may also deliver wider environmental gains relevant to the local area, and to national policy priorities, such as reductions in greenhouse gas emissions, reduced flood risk, improvements to air or water quality, or increased access to natural greenspace”.

6.12.19 Furthermore, the NPSWRI states that:

“In addition to delivering biodiversity net gain, developments may also deliver wider environmental gains relevant to the local area, and to national policy priorities, such as reductions in greenhouse gas emissions, reduced flood risk, improvements to air or water quality, or increased access to natural greenspace. Applications for development consent should be accompanied by a statement demonstrating how opportunities for delivering wider environmental net gains have been considered, and where appropriate, incorporated into the design (including any relevant operational aspects) of the project. Applicants should make use of available guidance and tools for measuring natural capital assets and ecosystem services, such as the Natural Capitals Committee’s ‘How to Do it: natural capital workbook’ and Defra’s guidance on Enabling a Natural Capital Approach. Where environmental net gain considerations have featured as part of the strategic options appraisal process in the water resources management plan to select a project, the statement should reference that information to supplement the site-specific details.”

6.12.20 Therefore, in accordance with the requirements of the NPSWRI, a statement will be included with the DCO application demonstrating how opportunities for delivering wider environmental net gains have been considered, and where appropriate, incorporated into the design (including any relevant operational aspects) of the Proposed Development.

Equality Impact Assessment

6.12.21 An Equality Impact Assessment (EqIA), which will provide information in terms of groups with protected characteristics under the Equality Act 2010 (Ref. 26) and social inequalities, will be relevant for consideration of

vulnerable groups and health inequalities. Equality effects will be considered in a separate EqIA which will be submitted as part of the DCO application if significant impacts are identified at the EqIA screening stage.

Other Permits, Consents and Licenses

6.12.22 The principal consent for the construction, operation and maintenance of the Proposed Development will be an Order made by the SoS for Environment, Food and Rural Affairs for development consent under section 103 of the Planning Act 2008 (Ref. 26). The DCO consent would, however, need to be supplemented by other permits, consents and licences.

6.13 References

- Ref. 1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Available at: <https://www.legislation.gov.uk/uksi/2017/572/made> [Accessed 19/12/2025].
- Ref. 2 Planning Inspectorate (2025) Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements, (Version 7; Last updated 25 March 2025). Available at: <https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-an/nationally-significant-infrastructure-projects-advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-an> [Accessed 19/12/2025].
- Ref. 3 Institute of Sustainability and Environmental Professionals (ISEP) (2017) Delivering Proportionate EIA.
- Ref. 4 Planning Inspectorate (2018) Advice Note Nine: Rochdale Envelope, (Version 3). Available at: <https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-nine-rochdale-envelope> [Accessed 19/12/2025].
- Ref. 5 Institute of Environmental Management and Assessment (IEMA) (2024) Implementing the Mitigation Hierarchy from Concept to Construction.
- Ref. 6 Planning Inspectorate (2025) Guidance: Nationally Significant Infrastructure Projects: Advice on Preparing Applications for Linear Projects (Last updated 15 April 2025). Available at: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-preparing-applications-for-linear-projects#environmental-impact-assessment-and-environmental-statements> [Accessed 19/12/2025].
- Ref. 7 Planning Inspectorate (2025) Guidance: Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment, (Last updated 25 March

- 2025). Available at: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment> [Accessed 19/12/2025].
- Ref. 8 Town and Country Planning Act 1990. Available at: <https://www.legislation.gov.uk/ukpga/1990/8/contents> [Accessed 19/12/2025].
- Ref. 9 Planning Act 2008. Available at: <https://www.legislation.gov.uk/ukpga/2008/29/contents> [Accessed 19/12/2025]
- Ref. 10 The Conservation of Habitats and Species Regulations 2017. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents> [Accessed 19/12/2025].
- Ref. 11 European Commission (2021) Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive. Available at: <https://op.europa.eu/en/publication-detail/-/publication/2b6c4b16-e867-42da-b604-f67ee6fe60c3> [Accessed 19/12/2025].
- Ref. 12 Ministry of Housing, Communities & Local Government (MHCLG) and Department for Levelling Up, Housing and Communities (DLUHC) (2019) Guidance on the use of Habitats Regulations Assessment. Available at: <https://www.gov.uk/guidance/appropriate-assessment> [Accessed 19/12/2025].
- Ref. 13 Department for Environment, Food & Rural Affairs (Defra), Natural England, Welsh Government and Natural Resources Wales (2021) Habitats regulations assessments: protecting a European site. Available at: <https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site> [Accessed 19/12/2025].
- Ref. 14 Planning Inspectorate (2012) Nationally Significant Infrastructure Projects - Advice Note Ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects. Available at: <https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-ten-habitats-regulations-assessment-relevant-to-nationally-significant-infrastructure-pr> [Accessed 19/12/2025].
- Ref. 15 InfoCuria Case Law (2018) Brian Holohan and Others v An Bord Pleanála.
- Ref. 16 InfoCuria Case Law (2018) People Over Wind and Peter Sweetman v Coillte Teoranta.
- Ref. 17 The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. Available at:

- <https://www.legislation.gov.uk/ukxi/2017/407/contents> [Accessed 19/12/2025].
- Ref. 18 Planning Inspectorate (2017) Nationally Significant Infrastructure Projects - Advice Note Eighteen: the Water Framework Directive. Available at: <https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-eighteen-the-water-framework-directive> [Accessed 19/12/2025].
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