

5. Assessment methodology

5.1. Introduction

This section describes the approach to, scope and methodology of the Environmental Impact Assessment (EIA) presented in this ES. The EIA has been informed by the requirements of:

The EIA (Land Drainage, Improvement Works) Regulations

The specific characteristics and location of the proposed development

The PEIR for the Proposed Scheme (February 2020) and consultee responses

Consultee responses provided during public exhibition events undertaken in February 2020

Advice provided by internal technical staff and external other than mentioned above, including NE, HE and SWHT

5.2. Overview of the assessment approach

5.2.1. Scope of assessment

A Preliminary Environmental Information Report (PEIR) for the Proposed Scheme was produced and consulted upon in April and May 2020. Topic areas scoped into assessment within the PEIR for the Proposed Scheme and therefore included in this ES as follows.

- Water
- Flora and fauna
- Cultural heritage
- Landscape
- Population and health
- Noise

Specific aspects scoped into assessment for each of the topics identified above are detailed in the methodology sections of chapters 6-11 of this report. Each of these chapters inherently considers the risk of major accidents and disasters as relevant. Topics scoped out of further assessment within the PEIR included traffic and transport, resource and waste management, air quality and climate for which no potential for significant effects has been identified. Table 5.1 outlines the reasons for scoping out these topic areas.

Table 5.1 Topic areas scoped out of assessment in ES and justification

Topic area	Reason for scoping out
Traffic and transport	While it is recognised that the traffic and transport elements of the project have the potential to pose some localised risks on the road network, it is envisaged that any effects on access or disruption will be minor and can be safely managed using the contractor's CTMP.

Topic area	Reason for scoping out
	<p>By implementing suitable mitigation measures in agreement with the local highway authority, the transport impacts can be reduced and managed effectively. It should also be noted that any transport impacts will not be long term; they will be temporary and over a relatively short period of approximately three months</p>
Air quality	<ul style="list-style-type: none"> • Potential impacts from dust emissions during construction can be managed through implementation of standard good practice in accordance with IAQM guidance. Therefore, based on professional judgement and in the interests of proportionality, a construction dust assessment is not considered necessary. • Haulage movements during construction and vehicle movements required during the operational phase of the Proposed Scheme for maintenance activities etc. are below the screening threshold for an air quality assessment as identified in the Land Use Planning and Development Control: Planning for Air Quality guidance (IAQM/EPUK, 2017).
Resource and waste management	<ul style="list-style-type: none"> • Given the low risk, rural nature of the site, potential impacts on human health, soils, surface water and groundwater associated with construction activities, including the use of construction plant and vehicles, are therefore considered to have negligible effect (not significant) following implementation of standard good practice measures • With a SWMP and MMP in place, potential impacts associated with the management of waste and materials management are considered negligible (not significant) and are scoped out of further assessment.
Climate	<ul style="list-style-type: none"> • Given the scale of the Proposed Scheme, carbon emissions associated with the excavation and reuse of site won peat material and fuel usage during construction, are also not considered significant in the context of the UK's carbon budget. • The Proposed Scheme will not increase the vulnerability of residents, businesses or material assets to climate change.

As described in Table 5.1, the PEIR identified that impacts on these topic areas will be mitigated through standard control measures such as the implementation of CTMP, SWMP, MMP and DMP. These measures, amongst others, have been included within the EAP for the Proposed Scheme provided in Appendix K and will be developed by the contractor in consultation with the relevant authorities (e.g. our internal technical specialists, local highways authority and environmental health officers).

5.2.2. Format of the assessment

For each topic area (chapters 6 to 11), the assessment is split into the following sub-headings:

- Introduction: brief introduction to the environmental topic area, including broad types of receptors
- Regulation and policy background: topic specific legislation and policy relevant to assessment provided
- Methodology: identifies sources of information on which the assessment has been based, and describes in detail criteria for sensitivity/value of receptors and magnitude of impacts used to assess the significance of identified impacts
- Existing environment: includes the summary of the baseline review and describes the key features within the study area and their sensitivity to the project
- Likely significant effects: includes the impacts associated with the project in terms of scale (both time and effect on the receptor) following inclusion of the embedded mitigation measures described in section 3.2.4.
- Mitigation: this identifies any additional mitigation measures over and above those embedded with the design that we are proposing to take to mitigate (minimise) the negative impacts from the Proposed Scheme identified
- Residual effects: this outlines the residual effect after additional mitigation is assumed to be in place

5.2.3. Study areas

Study areas for EIA vary depending on the topic being assessed and the nature of receptor, and therefore study areas are defined within the topic area specific chapters 6 to 12 of this report.

5.2.4. Assessment approach (including definition of significance)

The EIA aims to determine the significance of potential environment effects of the proposed scheme by assessing the magnitude of a possible impact in relation to the sensitivity (or value) of relevant receptors within the defined study area, which is based upon the requirements outlined in Schedule 2 of the EIA Regulations. Quantitative methods are used wherever possible, although qualitative approaches are often employed, drawing upon available information. The steps below outline the general approach to the EIA used in all topic chapters, with further information regarding topic specific approaches outlined in the topic area specific chapters 6 to 12 of this report.

1. Identification of the environmental resources (the receptors) likely to be affected by the proposed scheme.
2. Assessment of the sensitivity or value of receptors. Criteria defining the level of sensitivity or value differ with respect to each topic area and are defined, as appropriate, in each technical chapter of the ES. The sensitivity or value of receptors is described as either negligible – low – medium – high in accordance with Figure 5.1 (p44).
3. Characterisation of effects and assessment of impact magnitude. The impact magnitude of an effect on a receptor is described as either negligible – low – medium – high in accordance with Figure 5.1 (p44). The likely effects on receptors as a result of activities or environmental changes arising due to the scheme are identified and characterised with reference to their nature (adverse or beneficial) and the type of effect (e.g. whether it is direct or indirect, secondary, cumulative, short (e.g. 0 to 5 years) or long-term (e.g. >5 years), permanent or temporary, reversible or irreversible).
4. Assessment of the significance of the impact on a receptor. By combining the sensitivity of the baseline environment with the magnitude of the impact, we can assess the significance of the impact on a receptor. The significance is based on technical judgement and guided by the matrix provided in Figure 5.1 (p44). The assessment of significance is undertaken in two stages:
 - i. Likely significant effects: a number of design decisions relating to the location and form of the bank raising and WFD enhancement works which are referred to as “embedded” mitigation as detailed in section 3.2.4. These are considered to be intrinsic aspects of the Proposed Scheme and so have been included in the initial impact assessment. At this stage, the significance of effects are described as either not-significant – minor – moderate – major – substantial in accordance with Figure 5.1 (p44).
 - ii. Residual significance: following the application of additional mitigation measures, an identification of residual effects and assessment of their significance. Residual effects are described as either significant or not significant. For the purposes of this assessment, only moderate and major residual effects are considered significant.

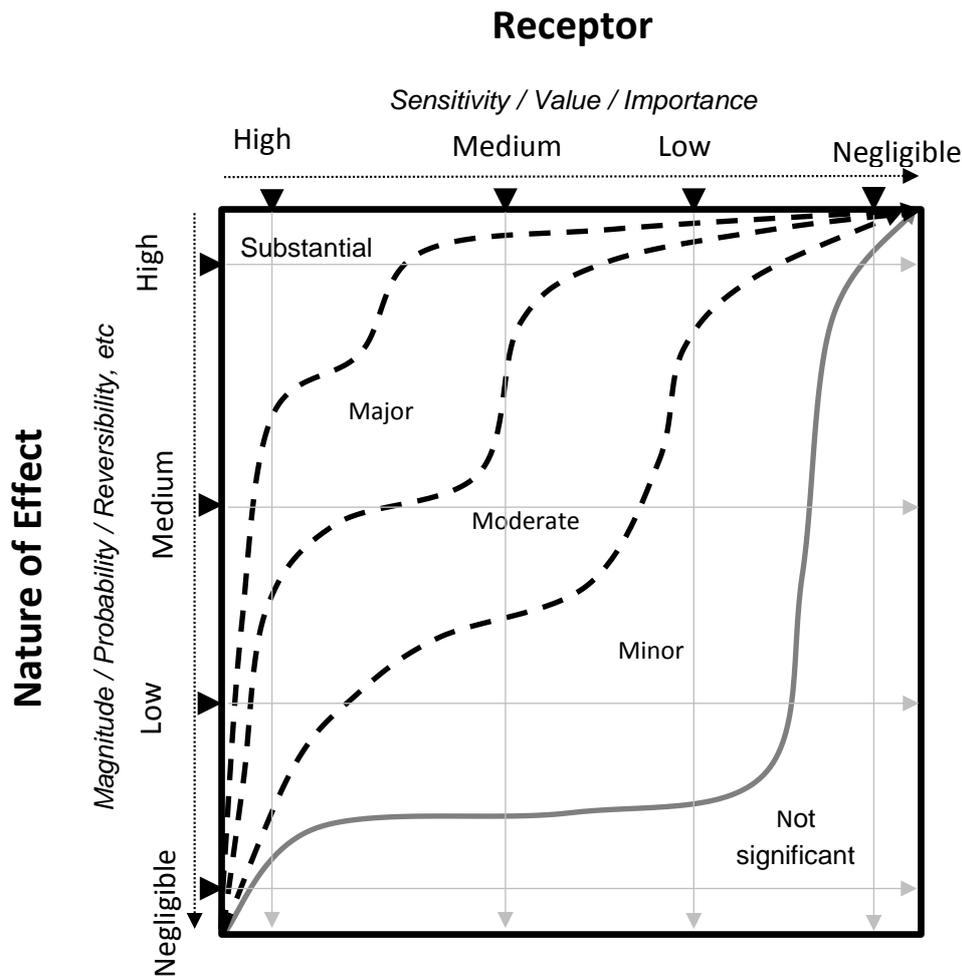


Figure 5.1 Significance matrix

5.2.5. Worst case scenarios

As the detailed design and construction approach for the Proposed Scheme is still progressing, there are a number of information gaps and uncertainties which need to be accounted for in our assessment. We have used worst-case assumptions to fill these gaps and address these uncertainties. Key limitations, gaps and uncertainties are presented in section 3.2.5, and in more detail in each topic chapter.