A46 Coventry Junctions (Walsgrave)
Scheme number: TR010066

6.1 Environmental Statement
Chapter 4 – Environmental Assessment Methodology

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ENVIRONMENTAL STATEMENT
Chapter 4 - Environmental Assessment Methodology

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4. Environmental assessment methodology

4.1. Introduction

4.1.1. Environmental Impact assessment (EIA) is a process that identifies the likely significant environmental effects (both adverse and beneficial) of a proposed development and is a legislative requirement to support the Development Consent Order (DCO) application as described in Chapter 1 (Introduction) of the Environmental Statement (ES) (**TR010066/APP/6.1**). This Chapter outlines the purpose and main stages of the EIA process and explains the methodology that has been followed for the EIA. The focus of the EIA methodology is to ensure a robust and proportionate approach, in line with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations). The EIA is reported in this ES which has been submitted to the Planning Inspectorate to support the DCO application.

4.1.2. The aim of EIA is to protect the environment by ensuring that the decision maker (the Secretary of State), when deciding whether to grant permission for a project, if the project is likely to have significant effects on the environment, does so in the full knowledge of any likely significant effects, and takes this into account in the decision-making process. The Planning Inspectorate, which is responsible for examining an application for development consent, will use this information in making a recommendation to the Secretary of State, about whether or not the Scheme should be consented. The Secretary of State will also rely upon the ES in coming to a decision on the Application.

4.2. Approach to assessment

4.2.1. The Design Manual for Roads and Bridges (DMRB) is the established standard for assessing the environmental impacts of highway schemes and has been developed by National Highways (formerly Highways England) in collaboration with relevant stakeholders.

4.2.2. The EIA and environmental reporting in this ES has been undertaken in accordance with the DMRB standards including:

- LA 101 Introduction to environmental assessment (Highways England, 2019a) (DMRB LA 101)
- LA 102 Screening projects for environmental impact assessment (Highways England, 2019b) (DMRB LA 102)
- LA 103 Scoping projects for environmental assessment (Highways England, 2020a) (DMRB LA 103)

- LA 104 Environmental assessment and monitoring (Highways England, 2020b) (DMRB LA 104)

4.2.3. As defined in DMRB LA 101 "*environmental assessment is the process by which information about environmental effects is collected, assessed, reported and used to inform decision-making. Environmental assessment includes screening, scoping, EIA, non-statutory environmental assessment and monitoring*."

4.2.4. Each technical environmental aspect has its own DMRB standard which takes precedence over the standards listed above. The relevant DMRB standards for the environmental aspects and factors are listed in Table 4-1 below. The methodologies used for the assessments for individual aspects in this ES are based on those set out in the Environmental Scoping Report (**TR010066/APP/6.8**) and informed by the DMRB standards. Where relevant, the environmental assessment also draws on relevant technical aspect guidance.

Table 4-1: Environmental aspects and factors and respective DMRB environmental topics

Environmental factors contained within Regulation 5(2) of the Infrastructure Planning (EIA) Regulations 2017	DMRB environmental standard
Population and human health	Chapter 5 Air Quality (LA 105) Chapter 11 Noise and Vibration (LA 111) Chapter 12 Population and Human Health (LA 112) Chapter 13 Road Drainage and the Water Environment (LA 113)
Biodiversity	Chapter 7 Landscape and Visual Effects (LA 107, LD 117 and LD 119) Chapter 8 Biodiversity (LA 108 and LD 118)
Land, soil, water, air and climate	Chapter 5 Air Quality (LA 105) Chapter 9 Geology and Soils (LA 109) Chapter 13 Road Drainage and the Water Environment (LA 113) Chapter 14 Climate (LA 114)
Material assets, cultural heritage, and the landscape	Chapter 6 Cultural Heritage (LA 106) Chapter 7 Landscape and Visual Effects (LA 107, LD 117 and LD 119) Chapter 10 Material Assets and Waste (LA 110)
The interaction between the factors referred to in sub-paragraphs a) to d)	Chapter 15 Combined and Cumulative Effects

Residues and emissions

4.2.5. The EIA Regulations (Schedule 4 (1)(d)) require an estimate, by type and quantity, of expected residues and emissions. This information is provided in the relevant aspect Chapters. Table 4-2 sets out the residues and emissions that must be reported on to satisfy the EIA Regulations, as well as the aspect Chapters of the ES which cover them.

4.2.6. A Statement Relating to Statutory Nuisance (**TR010066/APP/6.6**) has been produced and submitted with the DCO application. This explains the impact the Scheme would have in relation to statutory nuisance, as defined in Section 79(1) of the Environmental Protection Act 1990, and how these impacts would be mitigated. There is crossover between the Statement of Statutory Nuisance and the residues and emissions set out in Table 4-2.

Table 4-2: Residues and emissions

Residue or emission	Residue or emission reported in ES aspect Chapter
Air pollution	Chapter 5: Air Quality
Soil and subsoil pollution	Chapter 9: Geology and Soils
Loss of soil resource	Chapter 9: Geology and Soils
Noise	Chapter 11: Noise and Vibration
Vibration	Chapter 11: Noise and Vibration
Light	ES Appendix 7.5 Lighting Assessment
Heat	N/A – scoped out of assessment
Radiation	N/A – scoped out of assessment
Types and quantities of waste	Chapter 10: Materials Assets and Waste
Water pollution	Chapter 13: Road Drainage and the Water Environment

4.3. Environmental scoping

Scoping methodology

4.3.1. EIA begins with an environmental scoping process which is documented in an Environmental Scoping Report. The purpose of this scoping process is to determine which environmental aspects (and their environmental factors) are to be examined during the assessment stage and the level of detail to which they should be assessed. This assessment is then reported in the ES.

4.3.2. An Environmental Scoping Report (National Highways, 2023) was prepared in accordance with Section 10 of the EIA Regulations, DMRB LA 103 Scoping projects for environmental assessment and the Planning Inspectorate's Advice Note Seven for all environmental aspects set out in the EIA Regulations. The Environmental Scoping Report was submitted to the Planning Inspectorate on

the 30 June 2023. The Environmental Scoping Report was produced to document the proposed scope of the ES.

4.3.3. On behalf of the Secretary of State the Planning Inspectorate reviewed and consulted on the Environmental Scoping Report (**TR010066/APP/6.8**) and published a Scoping Opinion (**TR010066/APP/6.9**) on 10 August 2023 which can be viewed on the National Infrastructure Planning website.

4.3.4. Warwickshire County Council's full response was not included within the Scoping Opinion (**TR010066/APP/6.9**) published on the 10 August 2023. The comments that were received later from Warwickshire County Council were published on 16 August 2023 and 14 September 2023.

4.3.5. The Applicant acknowledges the Planning Inspectorate comments presented in the Scoping Opinion (**TR010066/APP/6.9**) and notes the detailed comments provided by the statutory consultees to the Planning Inspectorate in Appendix 2 to the Scoping Opinion (**TR010066/APP/6.9**). Collectively these comments (EIA Scoping comments) have been considered in undertaking the EIA and in preparing this ES (**TR010066/APP/6.1**).

4.3.6. Responses to comments raised in the Scoping Opinion (**TR010066/APP/6.9**), including details of changes to scope and methodology, are presented in tabular format in ES Appendix 4.1 (Scoping Opinion Response) (**TR010066/APP/6.3**). The ES (**TR010066/APP/6.1**) has been undertaken in accordance with the Scoping Opinion (**TR010066/APP/6.9**).

4.3.7. The Applicant has maintained ongoing dialogue with the Planning Inspectorate and other relevant statutory consultees to ensure that the scope of the EIA is proportionate and meets the requirements of the EIA Regulations.

4.3.8. In accordance with Planning Inspectorate Advice Note 7 the scoping process allows for refinement to consider additional data and survey information that becomes available, or to address comments raised by stakeholders during the statutory consultation.

Aspects and matters scoped out of the assessment

Decommissioning

4.3.9. The Planning Inspectorate agreed that impacts from decommissioning are scoped out on the basis that the Scheme will be in use beyond the design life of the road infrastructure, and that any future decommissioning is unlikely and would require an additional planning submission. As such, decommissioning has not been considered and is scoped out of the ES (**TR010066/APP/6.1**).

Heat and radiation

4.3.10. The EIA Regulations Schedule 1(4)(d) introduced a requirement to consider the likely significant effects of residues and emissions during construction and operation, such as from heat and radiation. Due to the nature of the Scheme as a road alteration scheme, it is considered unlikely that heat and radiation effects associated with the proposals are likely to arise. The Planning Inspectorate is in agreement that an assessment of heat and radiation can be scoped out of the ES (ID 2.2.4. of the Scoping Opinion (**TR010066/APP/6.9**).

Environmental matters

4.3.11. Certain matters of environmental aspects have been scoped out of the assessment, in line with the Scoping Opinion (**TR010066/APP/6.9**) and in agreement with the Planning Inspectorate. In summary, these are as follows:

- Air quality during construction - changes in vehicle emissions and local air quality associated with traffic flow impacts and use of construction equipment is scoped out on the basis that the construction phase is likely to be less than two years, which according to DMRB LA 105, would not constitute any significant effects. On this basis, the Planning Inspectorate is content to scope this matter out of the ES. However, should the construction phase take longer than two years, an assessment of construction activities (changes in vehicle emissions and local air quality) should be undertaken within the ES (ID 3.1.1. of the Scoping Opinion (**TR010066/APP/6.9**)).
- Visual impacts to receptors at the University Hospital Coventry - the only views of the Scheme available would be from the upper stories and hospital users have a low sensitivity as an indoor place of work or short-term patient stays. The Planning Inspectorate agreed that significant visual impacts are unlikely to occur on receptors within the hospital, and that this matter can be scoped out of the ES (ID 3.3.1 of the Scoping Opinion (**TR010066/APP/6.9**)).
- Visual change as a result of night works - due to the urban edge location of the Scheme and existence of the current night-time uses of the A46, the Planning Inspectorate is in agreement that an assessment of night-time viewpoints can be scoped out of the ES (ID 3.3.2. of the Scoping Opinion (**TR010066/APP/6.9**)).
- Habitats supporting protected species - the Environmental Scoping Report states that specific habitats have been scoped out of surveys for species such as great crested newts (paragraph 9.3.19), bats (paragraph 9.3.30) and otter (paragraph 9.3.31). The Scoping Opinion states that based on the absence of survey data provided to date, a justification for this should also be provided (including any agreement on the survey methodology with the

relevant consultees), in particular where the habitats have the potential to be of variable suitability based on seasonal changes such as water level or other ephemeral changes. This information is detailed in ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**) (ID 3.4.9. of the Scoping Opinion (**TR010066/APP/6.9**)).

- Designated geological sites - on the basis that there are no statutory or non-statutory designated geological sites within or near the Order Limits, the Planning Inspectorate is in agreement that an assessment of these can be scoped out of the ES (ID 3.5.4. of the Scoping Opinion (**TR010066/APP/6.9**)).
- Contamination - on the basis that there is unlikely to be introduction of significant sources of contamination, the Planning Inspectorate is in agreement that an assessment of these can be scoped out of the ES. The ES should however detail the measures taken to ensure that any potentially contaminative materials or working practices are to be controlled to prevent pollution incidents (ID 3.5.5. of the Scoping Opinion (**TR010066/APP/6.9**)). This information is detailed in ES Chapter 9 (Geology and Soils) (**TR010066/APP/6.1**) and ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**).
- Mineral Safeguarding Areas (MSA) - based on the information provided in the Scoping Report in relation to the absence of any specific allocations for extraction within the area, and the geographic context of the Proposed Development, the Inspectorate is in agreement that an assessment of impacts to the MSA can be scoped out of further assessment (ID 3.6.1. of the Scoping Opinion (**TR010066/APP/6.9**)).
- Sterilisation of peat resources – construction and operation - Based on the absence of any mapped peat deposits or geological strata which are known to contain peat, the Inspectorate is in agreement that an assessment of the sterilisation of peat resources can be scoped out of further assessment (ID 3.6.2. of the Scoping Opinion (**TR010066/APP/6.9**)).
- Operational waste generation - based on the statement in the Scoping Report that operational and maintenance activities will generate limited amounts of waste, the Inspectorate is in agreement that an assessment of waste generation during operation can be scoped out of the assessment (ID 3.6.6. of the Scoping Opinion (**TR010066/APP/6.9**)).
- Operational phase vibration - on the basis that DMRB LA 111 states “operational vibration is scoped out of the assessment methodology as a maintained road surface will be free of irregularities as part of project design and under general maintenance, so operational vibration will not have the potential to lead to significant adverse effects”, the Planning Inspectorate is

content to agree that this matter can be scoped out of the ES (ID 3.7.2. of the Scoping Opinion (**TR010066/APP/6.9)**).

- Surface water features - Avon – Claycoton Yelvertoft Bk to conf R Sowe - on the basis that this waterbody is not hydraulically linked to an area which may be impacted by the Scheme, the Planning Inspectorate is in agreement that an assessment of this can be scoped out of the ES (ID 3.9.1. of the Scoping Opinion (**TR010066/APP/6.9**)).
- Tidal Flooding - River Sowe - based on the information provided indicating that the River Sowe is not tidal, the Planning Inspectorate is in agreement that an assessment of tidal flooding can be scoped out of the ES (ID 3.9.2. of the Scoping Opinion (**TR010066/APP/6.9**)).
- Greenhouse Gas (GHG) assessment and Climate Change Resilience Assessment - Decommissioning impacts The Scoping Report states that impacts from decommissioning are proposed to be scoped out on the basis that the scheme will be in use beyond the design life of the road infrastructure, and that any future. (ID 3.10.1. of the Scoping Opinion (**TR010066/APP/6.9**)).
- Climate change resilience during construction - the construction phase is over a relatively short period of time and the effects of climate change occur over greater periods. On the basis that the construction phase is likely to be less than two years, the Planning Inspectorate is in agreement that an assessment of climate change resilience during the construction period can be scoped out of the ES (ID 3.10.2. of the Scoping Opinion (**TR010066/APP/6.9**)).
- Greenhouse gas emissions - it is proposed that some of the lifecycle stages of the Scheme can be scoped out due to the emissions being negligible in comparison to other lifecycle stages. The Planning Inspectorate agreed with this approach provided that a justification is given, and the ES assesses overall greenhouse gas emissions. The Scoping Opinion states that the ES should present assessments of this matter based on reasonable estimates (any estimates and assumptions should be identified in the ES) and referring to the worst-case scenario defined for the Scheme (ID 3.10.3. of the Scoping Opinion (**TR010066/APP/6.9**)). This information is detailed in Chapter 14 (Climate) of this ES (**TR010066/APP/6.1**).

4.3.12. Although the Scheme's construction activities are programmed for a total period of less than two years there is a risk that the construction phase could be extended such that the two-year DMRB screening criterion for an air quality construction assessment is exceeded and therefore a screening assessment has been undertaken to identify the potential requirement for a detailed assessment. This is discussed further in section 5.5 of ES Chapter 5 (Air

Quality) (**TR010066/APP/6.1**) and has concluded that further assessment is not required.

Major accidents and disasters

4.3.13. Regulation 5(4) of the EIA Regulations require that an assessment of *'the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to that development*. A two-stage qualitative assessment has been undertaken using technical judgement to identify whether the Scheme is vulnerable from major accidents and disasters (ES Appendix 4.2 (Major Accidents and Disasters) (**TR010066/APP/6.3**).

4.3.14. Firstly, a screening matrix was completed detailing a long list of major accidents and disasters that could occur. Accidents and disasters requiring further consideration were subject to a second, more detailed risk assessment.

4.3.15. In accordance with DMRB LA 104, the more detailed assessment considered the following:

- The vulnerability of the Scheme to events related to major accidents or disasters
- Any consequential changes in the predicted effects of that Scheme on environmental topics as a result of major accidents and/or disasters

4.3.16. The vulnerability assessment concluded that there is one residual event remaining that would need to be addressed through the design of the Scheme, relating to inland floods.

4.3.17. Inland floods are partly covered under Chapter 14 (Climate) of this ES (**TR010066/APP/6.1**), on climate change adaptation, and partly through ES Chapter 13 (Road Drainage and the water environment) (**TR010066/APP/6.1**), in terms of reducing future flood risk. Impacts and mitigation associated with these are covered in the respective Chapters of this ES (**TR010066/APP/6.1**).

4.3.18. Vulnerability relating to ground hazards, extreme weather, transport accidents, and critical infrastructure or industrial accidents could result in environmental impacts if the hazard were to occur. However, vulnerability to these events are mitigated either through designing to industry or regulatory requirements, or by existing emergency procedures; or are unlikely to result in an event that could reasonably be classed as a 'major' accident or disaster. With mitigation measures detailed in ES Appendix 4.3 (Major Accidents and Disasters) (**TR010066/APP/6.3**), these are not anticipated to result in significant effects for any environmental factor, and the Scheme would not increase the chances of such events occurring.

Transboundary effects

4.3.19. Regulation 32 of the EIA Regulations requires the consideration of any likely significant effects on the environment of another European Economic Area State. The Planning Inspectorate on behalf of the Secretary of State considered the proposed development and concluded in the Scoping Opinion, (ID 2.2.7) (**TR010066/APP/6.9**):

"*that the proposed development is unlikely to have a significant effect either alone or cumulatively on the environment in a European Economic Area State. In reaching this conclusion the Inspectorate has identified and considered the proposed development's likely impacts including consideration of potential pathways and the extent, magnitude, probability, duration, frequency and reversibility of the impacts. The Inspectorate considers that the likelihood of transboundary effects resulting from the proposed development is so low that it does not warrant the issue of a detailed transboundary screening*."

Preliminary Environmental Information Report

4.3.20. A Preliminary Environmental Information Report (PEIR) was produced and made available to the public, landowners, prescribed bodies and other stakeholders as part of the statutory consultation (see Section 1.5 of ES Chapter 1 (Introduction) and Section 3.4 of ES Chapter 3 (Assessment of alternatives) (**TR010066/APP/6.1**) for further details). The PEIR included preliminary environmental information to enable consultees to understand the likely significant environmental effects of the Scheme, and measures identified to mitigate such effects, to help inform their consultation responses.

4.3.21. Consultation responses have been received in response to the PEIR (Annex M of the Consultation Report Annexes (**TR010066/APP/5.2**)). Where these affect a particular aspect, they are discussed in the aspect Chapters of this ES (**TR010066/APP/6.1**). Further details on the consultation and responses are included in the Consultation Report (**TR010066/APP/5.1**) and Consultation Report Annexes (**TR010066/APP/5.2**).

Technical engagement

4.3.22. In addition to the scoping consultation and statutory consultation described earlier in this section, ongoing engagement with stakeholders has continued during the assessment process, in particular with the following:

- Environment Agency
- Natural England
- Historic England

- Warwickshire County Council
- Rugby Borough Council
- Coventry City Council

4.3.23. This ongoing technical engagement included discussion of assessment methodology and scope, potential effects, and mitigation. This engagement took the form of email exchanges, telephone calls, and virtual meetings.

4.3.24. Relevant feedback from this ongoing engagement to the assessment scope and methodology is provided in the aspect Chapters (Chapters 5-15) of this ES (**TR010066/APP/6.1**), where appropriate.

4.4. Surveys and predictive techniques and methods

Design Manual for Roads and Bridges

4.4.1. The environmental assessments have been undertaken in line with the general standards set out within DMRB LA 104 Environmental assessment and monitoring (Highways England, 2020), as well as the aspect specific DMRB standards (as contained within DMRB LA 105 to 115 and 120). DMRB is the established standard for assessing the environmental impacts of highway schemes and has been developed by National Highways (formerly Highways England) in collaboration with relevant stakeholders.

4.4.2. Where relevant, the environmental assessments have drawn on relevant topic guidance and best practice. More details on the methods used are provided in each of the aspect Chapters within the ES (**TR010066/APP/6.1**).

Study areas

4.4.3. Various study areas have been used to assess the impact on environmental receptors based on DMRB standards and aspect-specific guidance. Specific study areas are outlined in the individual aspect Chapters within the ES (**TR010066/APP/6.1**).

Temporal scope

4.4.4. For the purpose of the EIA, it has been assumed that:

- The construction start of works is summer 2026 (including mobilisation and pre-commencement works)
- The opening year is summer 2028
- The design year is 2043 (15 years after opening to traffic).

Survey, modelling and assessment

4.4.5. Extensive surveys have been undertaken to inform the aspect-specific environmental assessments, including:

- Agricultural land classification (ALC) surveys
- Arboriculture surveys
- Badger surveys
- Bat (activity, hibernation and roost) surveys
- Cultural heritage site walkover survey
- Geophysical surveys for below ground archaeology
- Great crested newt surveys (including Habitat Suitability Index assessment, and environmental deoxyribonucleic acid surveys (eDNA)
- Ground investigation surveys, including groundwater monitoring and testing for contaminated soils
- Hydromorphology survey
- Landscape winter and summer photography surveys
- Noise monitoring surveys
- Otter and water vole surveys
- Reptile surveys
- River condition assessment of waterbodies
- Trial trenching surveys for below ground archaeology
- UK Habitat Classification System surveys, including invasive species and habitat condition assessment including hedgerows
- Vibration monitoring survey
- Water features survey including Groundwater dependent terrestrial ecosystem
- Wintering birds, breeding birds, and barn owl surveys

4.4.6. The above surveys were generally undertaken between 2022 and 2024. More information on surveys and their timeframes is provided in the aspect Chapters (Chapters 5 to 15) of the ES (**TR010066/APP/6.1**).

4.4.7. In addition to surveys, other predictive techniques have been used to inform the ES, such as air quality, noise and flood risk modelling. Further information on these is also provided in the individual aspect Chapters (Chapters 5 to 15) of the ES (**TR010066/APP/6.1**) and supporting technical appendices.

Traffic modelling

4.4.8. Air quality, noise, climate and water quality impact assessments are dependent upon traffic modelling outputs. A traffic model provides predictions of future traffic levels both with and without the Scheme.

4.4.9. A traffic model was built at options selection stage which was used to understand the likely impacts on the road network (including on air quality and noise) and to inform the options appraisal. This has been updated for assessment of the preferred option using the latest available data and guidance from the Department for Transport.

4.4.10. Predictions of future traffic levels both with and without the Scheme have been produced using the traffic model. The traffic model covers the whole of the UK at a high level with an area of detailed modelling centred on the A46 Walsgrave Junction and bounded by the M6 and M69 between Birmingham and Leicester to the north, the M42 and M40 to the west and south and M1 to the east. It includes the urban areas of Warwick, Rugby and Bedworth.

4.4.11. The hours modelled in the traffic model are an average hour from 07:00–09:00 in the morning (the morning peak) and 16:00–18:00 in the evening (the evening peak), as these are the busiest times of day on the A46 in this area, confirmed by 2018 traffic count data. A typical hour in the middle of the day was also modelled (the inter-peak) between 09:00 and 16:00. A traffic model known as the ‘base year model’ was developed to represent existing traffic conditions as they were in 2018. The information on where people are travelling to and from has been taken from the National Highways Regional Transport Model for the Midlands. This information was then scaled to match traffic counts and merged with other data sources to provide the travel patterns of cars, vans and heavy goods vehicles across the country.

4.4.12. A 2018 base year has been used in the traffic model as this represents the most up to date information available on travel patterns and traffic volumes pre-COVID. Travel behaviour post-COVID has not yet stabilised, making more recent data collection difficult, and as such would not provide a reliable base for traffic forecasts. The impacts of COVID on travel behaviour have been incorporated into the forecasting process. Further, traffic conditions in the local area between 2019 and 2023 were affected by the traffic management in place for the construction of the A46 Binley scheme. As such, 2018 was the latest available unaffected period that could be used to represent typical local conditions.

4.4.13. The traffic model was then used to predict how traffic conditions will change in the future. Information on proposed infrastructure improvements in the wider

area, planned future housing and job developments were taken into account, as well as information on predicted growth in population, jobs and traffic provided by the Department for Transport.

4.4.14. Traffic models were created for two main future scenarios: the Do-Minimum (i.e., without the Scheme) and the Do-Something (i.e., with the Scheme). Traffic models were developed for 2028 (the expected year of Scheme opening) and 2043 (15 years after opening). Traffic flows and speeds on each road in the study area have been provided to inform the environmental assessment.

4.4.15. Full details of how the traffic model was developed are provided in the Transport Assessment (**TR010066/APP/7.3**) A summary of the output of the traffic model (i.e., the key changes in traffic flow as a result of the Scheme) is provided in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**).

4.5. Defining key parameters for the EIA

Order Limits

4.5.1. The outer boundary of the land required temporarily and/or permanently for the construction, operation and maintenance of the Scheme is referred to as the Order Limits. The land plans submitted as part of the DCO application (**TR010066/APP/3.1**) illustrate the land and/or rights required to deliver the Scheme.

4.5.2. The design of the Scheme has evolved in response to emerging information and to take account of statutory consultation feedback and ongoing engagement with stakeholders. Land and rights likely to be required for the Scheme have been discussed directly with landowners and relevant stakeholders, where appropriate.

4.5.3. There have been changes to the Scheme description and Order Limits since the Environmental Scoping Report (**TR010066/APP/6.8**) was submitted to the Planning Inspectorate. The Scheme remains materially the same as the Scheme which was subject to the Scoping Opinion (**TR010066/APP/6.9**). The changes to the design, are described in detail in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**).

4.5.4. The changes to the Order Limits from those set out in the Environmental Scoping Report (**TR010066/APP/6.8)** are described in detail in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**).

Identification of baseline and future baseline

4.5.5. In order to identify the effects of the Scheme on the environment, it is important to understand the environment that would be affected by the Scheme (the

'baseline conditions'). Understanding the baseline conditions allows measurements of changes that would be caused by the Scheme.

4.5.6. The baseline conditions are not necessarily the same as those that exist at the current time; they are the conditions that would exist in the absence of the Scheme either at:

- the time construction is expected to start, for impacts arising from construction; or
- the time the Scheme is expected to open to traffic, for impacts arising from the operation.

4.5.7. Therefore, the identification of the baseline and future conditions involves predicting changes that are likely to happen in the intervening period, for reasons unrelated to the Scheme. This entails taking current conditions and committed development into consideration and using experience and professional judgement to predict what the baseline and future conditions might look like prior to start of construction and operation. This includes taking account of natural changes, as far as this can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.

4.5.8. It is essential for an EIA that sufficient data is obtained to form the basis of the assessment. Each Chapter explains the data that has been gathered and used to inform the assessment and how it was gathered and includes a description of the current (baseline) environmental conditions and future baseline scenario based on the study area defined for that environmental factor.

4.5.9. The ES presents baseline information representing the conditions of the environment foreseeable at the time of writing. When describing the future baseline scenario for each environmental factor within the respective topic Chapters, readily available information such as local plans and climate change scenario data has been utilised to provide a description of the changes, both natural and human-influenced, in the local environment over an appropriate timescale that the datasets support. ES Chapter 15 (Combined and Cumulative Effects) (**TR010066/APP/6.1**) identifies potential future development from local authority data sets – including planning policy documents and planning application registers – to identify potential future receptors in relevant Chapters of this ES.

Limits of deviation

4.5.10. Limits of Deviation (LoD) are the geographical limits within which the DCO will authorise the Scheme to be constructed, both horizontally and vertically. Changes to the design may occur through the detailed design process, typically

as a result of issues that are identified through preconstruction surveys, for example ground conditions, or through ongoing construction planning. The LoD allows for a tolerance with respect to any distances and points shown on the plans that accompany the DCO application.

4.5.11. The DCO, if granted, will allow for the Scheme to be constructed anywhere within the maximum extent of the defined LoD. This includes a vertical deviation and a lateral deviation. As a result, there is some necessary flexibility as to the exact details of the Scheme taken through consenting to construction. A series of maximum and (where relevant) minimum LoD have been established and are defined in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**).

4.5.12. The LoD are contained in the DCO and are not considered to change the conclusions of the assessments presented in the aspect specific Chapters of the ES.

Dealing with uncertainty

4.5.13. In assessing the effects of the Scheme from an environmental perspective, the principle of the 'Rochdale Envelope' has been applied, in accordance with the Planning Inspectorate Advice Note Nine: Rochdale Environment (Planning Inspectorate, 2018a). Advice Note 9 states:

"The 'Rochdale Envelope' approach is employed where the nature of the Proposed Development means that some details of the whole project have not been confirmed (for instance the precise dimensions of structures) when the application is submitted, and flexibility is sought to address uncertainty. Such an approach has been used under other consenting *regimes (the Town and Country Planning Act 1990 and the Electricity Act 1989) where an application has been made at a time when the details of a project have not been resolved."*

4.5.14. Where there is uncertainty about the final design and/or location of part of the Scheme due to the necessary flexibility within the DCO (for example, relating to LoD as described above), each environmental aspect within the ES defines the worst-case scenario that would reasonably apply to that aspect. This allows the assessment set out in the ES to identify all likely significant effects that could arise, and to set out mitigation accordingly. Where this is the case, as far as possible mitigation is framed within the context of the objective that it needs to achieve rather than being tied to the specific action or set of actions, therefore if a change occurs within the envelope the mitigation can be adjusted to ensure it still delivers the required outcome.

4.5.15. The application process for development consent recognises that not all aspects of a proposal may be finalised by the time it is to be submitted, as stated in

Paragraph 4.13 of the National Networks National Policy Statement (NPS NN) (Department for Transport, 2024):

'In some instances, it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in their application which elements of the proposal have yet to be finalised, and the reasons why this is the case. Where some details are still to be finalised, applicants should set out, to the best of their knowledge, what the worst case scenario of the proposed development may be (for example in terms of site area) and assess the potential adverse effects which the project could have to ensure that the impacts of the project as it may be constructed have been properly assessed.'

4.5.16. The Scheme Design Report (**TR010066/APP/7.4**) provides information on those areas of the preliminary design for which there remains an element of uncertainty that will be developed and established at the detailed design stage.

4.6. General assessment assumptions and limitations

4.6.1. Aspect-specific assumptions and limitations are included within each aspect Chapter of the ES (**TR010066/APP/6.1**). This includes information on any data gaps for establishing baseline conditions, and limitations associated with surveys, modelling, and assessment techniques.

4.6.2. In addition to aspect-specific assumptions, a number of general assumptions and limitations were encountered when preparing the ES, as follows:

- The ES and DCO application are based on a preliminary design. The design would be refined before construction starts through a process of detailed design. As such, the design assessed includes a degree of flexibility, as represented by the LoD as described in section 4.5 and in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**). The ES has taken into account the LoD shown on the Works Plans (**TR010066/APP/2.3**). and the potential impacts of a deviation within the permitted limits have therefore been assessed. National Highways would only be permitted to exceed the limits of deviation if it can be demonstrated that no materially new or materially different environmental effects from those reported in the ES would arise.
- The construction methodology could change before construction starts, particularly for elements of construction that are dependent on the supply chain (e.g., source of materials, plant, equipment, and the construction workforce), or for elements that are dependent on the detailed design. The description of the Scheme, including the Order Limits and the parameters used in the ES assessments, is sufficiently wide to ensure that any design

within the parameters and description assessed would not give rise to any materially new or materially different environmental effects than those assessed. The construction methodology assessed in the ES therefore represents a reasonable worst-case.

- It is assumed that the information provided by third-party sources is accurate at the time of preparing this report. Data sources have been verified and updated throughout the EIA process to date. References are included to provide details of relevant sources.
- Limitations and assumptions associated with the traffic modelling and outputs used in the assessments are detailed in the Transport Assessment (**TR010066/APP/7.3**).
- At the present time no utility diversions are anticipated to be required.
- Coventry City Council will take on the operation and maintenance of the new link road (B4082) once constructed as described in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**). Discussions are currently ongoing with Coventry City Council regarding the detailed design and maintenance requirements of the Scheme. It has been assumed that Coventry City Council will accept the design of the Scheme as presented on the General Arrangement (**TR010066/APP/2.6**). It is also assumed that the mitigation incorporated into the Scheme for the link road will be maintained as described in the DCO application by Coventry City Council and that this will form part of the legal agreements between the Applicant and Coventry City Council. Should the detailed design of the B4082 differ from the preliminary design presented in the DCO, the Applicant will consult with Coventry City Council.
- It has been assumed that the area for environmental mitigation to the north of Coombe Abbey Park will be adequate to provide the mitigation required for the Scheme. Initial calculations have been based upon the preliminary design however due to areas of uncertainty in the design and construction methods there could be changes at detailed design.
- As a result of consultation with Coventry City Council and other stakeholders the Applicant is aware that there are long-term aspirations by Coventry City Council for the provision of a new road providing a blue light route from the western dumbbell roundabout of the Scheme westwards across the River Sowe to University Hospital Coventry. At the time of the preliminary design allowances have been made to ensure the future provision of this route is not hindered by the Scheme. This is described further in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**). If the provision of a blue light route were to be taken forward at some point in the future it is likely that some mitigation incorporated as part of the Scheme, such as landscape planting, is likely to

be removed. Given any future blue light route is likely to be subject to its own EIA and own mitigation requirements it has been assumed that any mitigation included as part of the Scheme or future removal thereof would be assessed as part of this process and mitigated. It is not considered within the remit of this Scheme to provide any alternative mitigation considering the potential future blue-light route nor to make allowances for mitigation that may be removed in future.

- The use of the Brinklow Road compound which was established for the Binley Junction Scheme (secured under an extension to the existing planning permission (Rugby Borough Council planning reference: R24/0164), will continue to be used for the Scheme as the main site compound. A section 73 application to vary condition 3 (the time limit) of the existing planning permission for the compound to extend the time limit to mid-2029 was granted by Rugby Borough Council in May 2024 (planning application R20/0462).
- As the Brinklow Road site compound exists prior to the construction of the Scheme and the activities within the site remain unchanged from that which was granted planning permission for the Binley Junction Scheme it has been considered to form part of the existing baseline conditions and thus has not been included within the Order Limits and is not part of this consent. Given there will be no change to the use of this area as a site compound it has not been considered within the assessments in this ES (**TR010066/APP/6.1**). As different construction traffic routes will be used for the Scheme to those used on the Binley Junction Scheme this represents a change and thus construction routes from the Brinklow Road compound have been considered in the assessments.
- Any reinstatement of the Brinklow Road compound following the Scheme will be in accordance with the original planning permission conditions associated with the site and this has not been considered in this ES (**TR010066/APP/6.1**).

4.7. Significance criteria

4.7.1. The output of the environmental assessment is to report the likely significance of effects using established significance criteria, as presented within DMRB LA 104. DMRB states that the approach to assigning significance of effect relies on reasoned argument, professional judgement and taking on board the advice and views of appropriate organisations.

4.7.2. Environmental assessment requires the identification of receptors. A receptor or resource's environmental value (or sensitivity) is then determined. The magnitude of a project's impacts (i.e., its change upon the receptor) is then

established. The significance of an environmental effect is typically a function of the 'value' or 'sensitivity' of the receptor and the 'magnitude' of the impact.

4.7.3. For some environmental aspects and factors, predicted effects may be compared with quantitative thresholds and scales in determining significance. Each environmental assessment Chapter within this ES describes the specific thresholds / criteria used to determine value and magnitude and will align within the general methodology described within this Chapter.

4.7.4. The value of receptors is determined based upon Table 3.2N in DMRB LA 104 which is reproduced below in Table 4-4. The greater the value of a receptor the greater the significance of the effect.

4.7.5. Assigning values to the relevant receptors for each discipline enables different environmental receptors to be placed upon the same scale and can assist with the process of assigning significance.

4.7.6. For the majority of environmental aspects assessed within this ES, where appropriate and evidence allows, the value or sensitivity of identified receptors has been provided. The value of receptors along with the magnitude of impact is reported in this ES (**TR010066/APP/6.1**).

Table 4-3: Description of environmental value (sensitivity) (taken from DMRB LA 104 Table 3.2N)

Value (sensitivity) of receptor / resource	Typical description
Very High	Very high importance and rarity, international scale and very limited potential for substitution.
High	High importance and rarity, national scale, and limited potential for substitution.
Medium	Medium or high importance and rarity, regional scale, limited potential for substitution.
Low	Low or medium importance and rarity, local scale
Negligible	Very low importance and rarity, local scale.

4.7.7. The criteria for identifying the magnitude of an impact is based upon Table 3.4N in DMRB LA 104 which has been reproduced below as Table 4-4. Potential impacts are identified that might occur due to the construction and operation of the Scheme. Impacts may be adverse or beneficial, direct, indirect, secondary or cumulative, temporary or permanent, short, medium or long term.

Table 4-4: Magnitude of impact and typical descriptors (taken from DMRB LA 104 Table 3.4N)

Magnitude of impact (change)		Typical description
Major	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
	Beneficial	Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality.
Moderate	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Beneficial	Benefit to, or addition of, key characteristics, features or elements. improvement of attribute quality.
Minor	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Negligible	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.
No change		No loss or alteration of characteristics, features or elements; no observable impact in either direction.

4.7.8. The greater the magnitude of impact, the more significant the effect. For example, the consequences of a highly valued environmental resource experiencing a major adverse impact would be a significant adverse effect.

Table 4-5: Significance matrix (taken from DMRB LA 104 Table 3.8.1)

	Magnitude of Impact (Degree of Change)					
Environmental Value (Sensitivity)		**No change**	**Negligible**	**Minor**	**Moderate**	**Major**
	Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
	High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

4.7.9. For noise, air quality and flood risk, a matrix-based approach is not used as calculations are used to assess the effects in numerical terms.

4.7.10. The significance of an effect is reported after an assessment of the effectiveness of the design and mitigation measures (the residual effect). Where the significance matrix indicated in Table 4-5 includes two significance categories, evidence should be provided to support the reporting of a single significance category.

4.7.11. Assigning each effect to one of the five significance categories enables different environmental issues to be placed upon the same scale, to assist the decision-making process at whatever stage the Scheme is at within that process. Typical descriptors for the five significance categories are set out in Table 4-6.

4.7.12. As stated in DMRB LA 104 and Table 4-6 effects with a very large or a large significance are considered as being 'material' and 'likely to be material' in the decision-making process respectively. Therefore, large and very large effects are considered 'significant' for the purposes of the EIA Regulations. Moderate effects are described as potentially being material in the decision-making process. Moderate residual effects are therefore also typically considered as 'significant'.

Table 4-6: Descriptions of the significance of effect categories (taken from DMRB LA 104 Table 3.7)

Significance category	Typical descriptors of effects
Very Large	Effects at this level are material in the decision-making process
Large	These beneficial or adverse effects are very important considerations and are likely to be material in the decision-making process.
Moderate	Effects at this level can be considered to be material decision-making factors.
Slight	Effects at this level are not material in the decision-making process.
Neutral	No effects or those that are beneath levels of perception, within normal bounds or variation or within the margin of forecasting error.

4.8. Design, mitigation and enhancement measures

4.8.1. The mitigation hierarchy from DMRB LA 104 (paragraph 3.23) will be considered for all environmental features throughout the Scheme's lifecycle. The mitigation hierarchy is based on a series of sequential steps undertaken to limit any adverse impacts on the environment and has the following steps in order of priority:

1. Avoidance and prevention: design and mitigation measures to prevent the effect (e.g., alternative design options or avoidance of environmentally sensitive sites)

2. Reduction: where avoidance is not possible, then mitigation is used to lessen the magnitude or significance of effects

3. Remediation: where it is not possible to avoid or reduce a significant adverse effect, these are measures to offset the effect

4.8.2. The mitigation hierarchy has been used in the identification and design of mitigation. Aspect specific mitigation, where identified at this stage in the design process has been outlined in each of the individual environmental aspect Chapters. This ES (**TR010066/APP/6.1**) reflects an ongoing EIA process and further mitigation will be identified and mitigation refined as the detailed design stage progresses.

4.8.3. It is important to note that proposed mitigation measures can only be taken into account when determining significance if the success of the measures delivering the desired outcome is supported by evidence and the Scheme has an identified legal mechanism for implementing the measures.

4.8.4. If effects cannot be mitigated, compensatory measures would be considered, for example, to provide replacement habitat.

4.8.5. The environmental assessment will report on the following categories of mitigation described below as per DMRB LA 104 (paragraph 3.24).

Embedded mitigation

4.8.6. Embedded mitigation is an intrinsic part of design evolution (e.g., reducing the height of an embankment to reduce visual impact), taking into account guidance provided in DMRB standards: GG 103 Introduction and general requirements for sustainable development and design (Highways England 2019c), LD 117 Landscape design (Highways England 2020c), LD 118 Biodiversity design (Highways England 2020d) and LD 119 Roadside environmental mitigation and enhancement (Highways England 2020e). Embedded mitigation forms part of the Scheme description in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**).

4.8.7. The first preference in mitigating any impact is to seek engineering and design measures to entirely avoid or eliminate the impact. Where this is not possible, the design should seek to reduce the magnitude of the impact. Impacts can be avoided or reduced, for instance, through changes to the horizontal or vertical alignment of the Scheme, junction strategy or other aspects of the Scheme layout; or through changes in the methods and/or materials to be used in construction.

4.8.8. The Scheme design evolved through an iterative process between the engineering and environmental design and assessment teams, and through

active engagement with statutory consultees, key stakeholders and the wider public. Throughout the iterative design process, design changes were integrated into the Scheme with the primary purpose of avoiding or reducing adverse effects at source and making the Scheme fit better into its landscape setting. These measures are integral to the Scheme and are termed 'embedded mitigation'.

4.8.9. Scheme design principles adopted to avoid or prevent adverse environmental effects are set out within the Scheme Design Report (**TR010066/APP/7.4**). This includes general principles and specific commitments that will inform the detailed design of the scheme.

4.8.10. It is also assumed, as embedded mitigation, that all standard construction best practice measures to mitigate the environmental effects of construction will be implemented in line with the First Iteration Environmental Management Plan (EMP) (**TR010066/APP/6.5**) and the Pre-Commencement Plan (**TR010066/APP/6.7**).

4.8.11. The First Iteration EMP (**TR010066/APP/6.5**) has been produced in line with DMRB LA 120: environmental management plans (Highways England, 2020) and has been submitted as part of the DCO application. The First Iteration of the EMP (**TR010066/APP/6.5**) contains measures, including the Register of Environmental Actions and Commitments (REAC) (Appendix A of the First Iteration EMP Plan (**TR010066/APP/6.5**)), to manage environmental effects in construction and operation. This First Iteration EMP (**TR010066/APP/6.5**) will provide the framework for the future production of the more detailed Second Iteration EMP. The second iteration of the EMP will be produced during the detailed design stage in preparation for the construction stage. A Third Iteration EMP would be produced after construction for the handover stage.

4.8.12. The First Iteration EMP (**TR010066/APP/6.5**) is secured through Requirement 1 of the draft DCO and will become a certified document for the purposes of the DCO, and compliance with it will be the subject of a DCO requirement. This means compliance with its terms will be a legal requirement. The EMP is seen as a "live" document which will continue to evolve into subsequent iterations of the EMP and the Principal Contractor will develop this to set out exactly how each of the actions and commitments will be delivered.

4.8.13. A separate Outline Traffic Management Plan (OTMP) (**TR010066/APP/7.5**). has also been included in the DCO application. The OTMP describes the traffic management processes that would be followed to ensure the construction phases of the Scheme are completed safely and efficiently, while minimising the impact on customers and stakeholders.

4.8.14. These specific management plans will be updated and developed into the final management plans prior to construction, in accordance with Requirement 4 of the draft DCO (**TR010066/APP/3.1**).

Essential mitigation

4.8.15. Where avoidance of an impact through embedded mitigation is not possible, or is only partly effective, further mitigation measures are required, referred to as 'essential mitigation'. Essential mitigation are measures identified to reduce and if possible offset likely significant adverse environmental effects, in support of the reported significance of effects in the environmental assessment.

4.8.16. Mitigation measures can produce adverse as well as beneficial effects e.g. an environmental noise barrier can increase visual intrusion.

4.8.17. Mitigation identified during the EIA process that is required to further prevent, reduce and, where possible, offset any adverse effects on the environment are described in the relevant aspect Chapters. A design to show how the required environmental outcomes and objectives of that mitigation could be met based upon the preliminary design is shown on ES Figure 2.4 (Environmental Masterplan) (**TR010066/APP/6.2**), however the exact detail of mitigation locations and designs will be determined through the detailed design process and a final environmental mitigation design will be developed as part of the pre-commencement process and secured through the First Iteration EMP. It is important to note that the precise content of the Environmental Masterplan is not intended to be ‘secured’ by way of the DCO – instead, the Environmental Masterplan presents indicative layouts to show how the relevant mitigation measures could be implemented so as to be effective in terms of mitigating effects. However, as detailed design progresses, it may be the case that the layout indicated on the General Arrangement (**TR010066/APP/2.6**) needs to be altered – importantly, this could only be done insofar as the layout complies with the requirements of the EMP.

4.8.18. The essential mitigation measures identified in the aspect Chapters of the ES (**TR010066/APP/6.1**) are included in the construction best practice measures summarised in the REAC, contained within the First Iteration EMP (**TR010066/APP/6.5**) as part of the DCO application. Where the Scheme design and the parameters included in the DCO allow for some flexibility in design or how aspects of the Scheme are constructed, the Project Design Principles and/or EMP specifies the mitigation objective to be achieved and any specific constraints on the design, construction or operation that need to be implemented, but include adaptive mitigation to ensure that the mitigation as implemented achieves its desired outcome.

4.8.19. The likely significant effects of the Scheme are identified taking into account the embedded mitigation. The significance of an effect is then reported after an assessment of the effectiveness of any essential mitigation that has been identified specifically to address an effect (the residual effect). This approach allows for all deliverable and committed mitigation to be taken into account in determining the significance of effects reported in this ES (**TR010066/APP/6.1**).

Construction mitigation

4.8.20. There are potential impacts to the environment that could occur as a result of the construction process, including incidents during construction. The timing and location of these impacts cannot be accurately predicted at this stage. An example would include spillages of fuels, oils or other chemicals.

4.8.21. The assessment considers reasonably foreseeable construction impacts, taking into account the use of best practice construction management as embedded mitigation. The likelihood of occurrence and the severity of any such incidents can be reduced through good construction site management practices. To help ensure adequate consideration of risks identified during the EIA that would relate to the construction period, the First Iteration EMP (**TR010066/APP/6.5**) incorporates construction phase management, setting out how construction stage mitigation measures would be implemented to manage risks and certain requirements for the contractors.

4.8.22. The First Iteration EMP (**TR010066/APP/6.5**) sets out the roles and responsibilities, control measures, training and briefing procedures, risk assessments and monitoring systems to be employed during planning and construction for all relevant environmental aspect areas.

4.8.23. Each environmental aspect Chapter describes the measures that must be adopted during construction to avoid and reduce environmental effects, such as pollution control measures, secured in the REAC and the First Iteration EMP (**TR010066/APP/6.5**).

4.8.24. Mitigation measures will be developed further in the detailed design stage and in consultation with statutory consultees, where appropriate. The exact detail of mitigation locations and designs will be determined through the detailed design process and a final environmental mitigation design will be developed as part of the pre-commencement process and secured through the Second Iteration EMP.

Enhancements

4.8.25. Enhancement measures have also been considered. An enhancement is defined as a measure that is over and above what is required to mitigate the adverse effects of the Scheme. Unlike mitigation and compensation measures,

enhancements are not factored into the determination of significance; however, the potential benefits of these measures are presented within the relevant aspect Chapters, in accordance with the NPS NN.

Monitoring of mitigation for significant adverse effects

4.8.26. Where significant adverse effects on the environment are predicted, consideration has been given to the appropriateness of monitoring measures. The purpose of monitoring measures is to ensure the mitigation measures required to avoid, reduce and offset significant adverse effects are delivered and perform as intended. Any monitoring would be in accordance with DMRB LA 104, as well as the specific DMRB standards (as contained within DMRB LA 105 to 115) and the EIA Regulations.

4.8.27. Monitoring proposals for mitigation in respect of likely significant adverse effects are detailed in the aspect Chapters (ES Chapters 5 to 15) (**TR010066/APP/6.1**) and the First Iteration of the EMP (**TR010066/APP/6.5**).

4.9. Cumulative and in combination effects

4.9.1. The ES considers the interrelationships between environmental effects (intra-project effects). This is defined as the effects of multiple residual effects from the Scheme on a receptor (i.e., 'within Scheme' effects associated with combined impacts across more than one environmental aspect).

4.9.2. These interrelationships can generally be grouped into four broad categories: the effects on residential receptors and communities; effects on the historic environment; effects on biodiversity; and effects on the water environment. The interrelationships of effects on these receptors are covered in the relevant aspect Chapter:

- Effects on residents and communities (e.g., the combined effects from air quality, noise, severance and setting) are covered under ES Chapter 12 (Population and Human Health) (**TR010066/APP/6.1**).
- Effects on the historic environment (e.g., from noise, vibration, land use change, and changes in setting) are covered under ES Chapter 6 (Cultural Heritage) (**TR010066/APP/6.1**).
- Effects on biodiversity (e.g., from noise, light, habitat loss and fragmentation) are covered under ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**).
- Effects on water quality (e.g., from physical works, road runoff, accidental spillage and contaminated land) are covered under ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**).

4.9.3. The four Chapters above represent the aspects with receptors likely to experience combined effects. Impacts from other aspects, such as air quality,

landscape, geology and soils, and noise and vibration, have the potential to interact with other impacts to result in combined effects. However, using a receptor-based approach, these effects are best reported in the four aspect Chapters above.

4.9.4. The NPS NN (paragraph 4.12 states that the ES should provide information on how the effects of the Scheme would combine and interact with the effects of other development (inter-project cumulative effects). ES Chapter 15 (Combined and Cumulative Effects) (**TR010066/APP/6.1**) sets out the approach to the cumulative effects assessment and is based on the guidance provided in the Planning Inspectorate's (2019) Advice Note Seventeen.

4.10. Duplication of assessment

4.10.1. The ES has been prepared taking into account other relevant environmental assessments with a view to avoiding duplication of assessment. The other assessments are described below.

Habitats Regulation Assessment

4.10.2. A Stage 1 Habitats Regulations Assessment (HRA) screening exercise has been undertaken for the Scheme in accordance with the Conservation of Habitats and Species Regulations 2017 and the Birds Directive 2009/147/EC. The Stage 1 HRA concluded that no likely significant effects on any European sites are anticipated, when considered alone or in combination with other plans and projects. The HRA is included in the DCO application as ES Appendix 8.12 (Habitats Regulations Assessment Report) (**TR010066/APP/6.3**).

Water Environment Regulations

4.10.3. The impact of the Scheme on the Water Framework Directive (WFD) objectives has been assessed in line with the Planning Inspectorate's Advice Note Eighteen: The Water Framework Directive (2017).

4.10.4. A WFD compliance assessment is included in ES Appendix 13.2 (WFD Assessment) (**TR010066/APP/6.3**). with the conclusions summarised in ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**).

4.10.5. A preliminary WFD compliance assessment was submitted to the Environment Agency during the preparation of the ES (**TR010066/APP/6.1**). The WFD compliance assessment included in ES Appendix 13.2 (Water Framework Directive Compliance Assessment) (**TR010066/APP/6.3**) has considered feedback from this consultee.

Flood Risk Assessment

4.10.6. A Flood Risk Assessment (FRA) has been undertaken and reported within ES Appendix 13.1 (**TR010066/APP/6.3**). ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**) summarises the key findings from the FRA where appropriate.

4.10.7. A preliminary FRA was submitted to the Environment Agency, Warwickshire County Council and Coventry City Council during the preparation of the ES. The FRA included in ES Appendix 13.1 (Flood Risk Assessment) (**TR010066/APP/6.3**) has considered feedback from these consultees.

Health Impact Assessment

4.10.8. The impact of the Scheme on health is assessed in ES Chapter 12 (Population and Human Health) (**TR010066/APP/6.1**). A standalone Health Impact Assessment (separate from the EIA) has therefore not been undertaken as health is covered within the ES (**TR010066/APP/6.1**).

Acronyms

Acronym or initialism	Term
ALC	Agricultural land classification
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
eDNA	environmental deoxyribonucleic acid
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ES	Environmental Statement
FRA	Flood Risk Assessment
GHG	Greenhouse Gas
HRA	Habitat Regulations Assessment
LoD	Limits of Deviation
MSA	Mineral Safeguarding Area
NPS NN	National Networks National Policy Statement
OTMP	Outline Traffic Management Plan
PEIR	Preliminary Environmental Information Report
REAC	Register of Environmental Actions and Commitments
WFD	Water Framework Directive

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