

# **A66 Northern Trans-Pennine Project TR010062**

## **2.7 Environmental Management Plan**

**APFP Regulations 5(2)(a)**

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A66 Northern Trans-Pennine Project  
Development Consent Order 202x

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**2.7 ENVIRONMENTAL MANAGEMENT PLAN**

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## 1 Introduction

### 1.1 Background and purpose of the report

- 1.1.1 This document is the Development Consent Order (DCO) submission version of the Project Environmental Management Plan (EMP) for the A66 Northern Trans-Pennine Route Upgrade (the Project). It has been prepared in accordance with the *Design Manual for Roads and Bridges (DMRB) LA 120 Environmental Management Plans (DMRB LA 120)* (Highways England (now National Highways), 2020a)<sup>1</sup> and incorporates additional requirements to meet the needs of the Project.
- 1.1.2 National Highways is seeking powers to construct, operate and maintain the Project through an application for a DCO. An Environmental Impact Assessment (EIA) has been undertaken for the Project and an Environmental Statement (ES) (Application Documents 3.2, 3.3 and 3.4) has been prepared in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations). In accordance with the requirements of the EIA Regulations, the ES contains the assessment of the likely significant effects on the environment that may arise during its construction and operation and describes required mitigation measures.
- 1.1.3 National Highways recognises the environmental and social importance of completing the construction of the Project in an environmentally sustainable and responsible manner, ensuring a high level of environmental performance. National Highways is committed to achieving this through implementation and continual improvement of an International Organisation for Standardisation (ISO) 14001 accredited Environmental Management System (EMS), which will be implemented during the construction phase of the Project by the Principal Contractor(s) (PC). The EMS describes the site-specific procedures for managing the environmental aspects of construction works to comply with the requirements of the contract, legislation and industry best practice. The EMP will work within the structure of the project EMS.
- 1.1.4 The EMP provides clear and concise information which states how the mitigation and management of environmental effects will be delivered and maintained. The overall objectives of the EMP are to:
- Implement key control measures, as identified in the ES, in order to avoid or minimise impacts to nearby receptors
  - Ensure compliance with legislation
  - Identify risks, their associated control measures, compliance and corrective actions
  - Identify roles and responsibilities
  - Provide a clear audit trail outlining the modifications made from any previous iteration of the EMP

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<sup>1</sup> Highways England (now National Highways) (2020) Design Manual for Roads and Bridges LA 120 Environmental Management Plans

- Establish procedures for communication, monitoring, audit mechanisms and reporting of control measures.
- 1.1.5 The purpose of the EMP is to set out the management actions that need to be implemented to mitigate the environmental effects of the Project as identified in the ES and to demonstrate compliance with relevant environmental legislation. It sets out the measures, commitments and actions needed to manage and mitigate environmental effects identified within the ES during construction and operation of the Project. This EMP is submitted with the DCO application and is based on the design for which the DCO is sought.
- 1.1.6 If development consent is granted for the Project, this EMP will become a certified document under the DCO. National Highways would be required by the provisions of the DCO to develop the certified EMP into a further iteration (or iterations that apply to a part of the Project only) of the Environmental Management Plan (referred to as a 'Second Iteration EMP') for approval by the Secretary of State before Start of Works, and thereafter to comply with the terms of the approved EMP.
- 1.1.7 This EMP is therefore the first iteration of the EMP and the EMP will be a 'live' and iterative document that will continue to evolve and develop in detail up until and also beyond its approval prior to the Start of Works, to reflect the stage of the project and the availability of detailed information on design, construction methods and operational protocols. Any further iterations of the EMP prepared after the DCO has been made will be prepared within the confines of the certified EMP, as set out in the provisions of the DCO.
- 1.1.8 This EMP sets out the process through which the PC(s) will prepare the details of the relevant measures set out in this EMP. The process includes provision for consultation with specified statutory bodies with functions relevant to the subject matter under consideration and requires the PC(s) to demonstrate how it has taken into account the consultation feedback received on its draft submissions. This provides a clear, streamlined and transparent mechanism through which the important input of the statutory bodies can be sought and taken into account.
- 1.1.9 This EMP also provides for the process by which National Highways will determine whether or not to approve the submissions of the PCs seeking changes to a Second Iteration EMP after its approval by the Secretary of State. The provisions of the DCO permit National Highways to determine that changes to a Second Iteration EMP are substantially in accordance with the approved EMP and set out how National Highways' determinations in this regard will be consulted upon, publicised and recorded. National Highways as the strategic highway authority with responsibility for England's trunk road network and the body that sets the UK's national standards for the design of roads has the resources and expertise required to determine whether the PC(s) submissions comply with the approved EMP.
- 1.1.10 Once construction of a relevant part of the Project has been completed, the provisions of the DCO require the preparation of, and compliance with, a

Third Iteration EMP (or series of EMPs that apply to individual parts of the Project) containing the mitigation measures relevant to the operation and maintenance of that part of the Project. A Third Iteration EMP is to be prepared by the PC(s) following the consultation process set out in this EMP and the provisions of the DCO require National Highways to determine whether or not to approve a Third Iteration of the EMP.

- 1.1.11 These mechanisms ensure that the mitigation recommended through the EIA process for the construction, operation and maintenance of the Project, and set out in draft in this EMP, are consulted upon, that determinations whether or not to approve iterations of and changes to the EMP are made publicly and transparently and that the recommended mitigation is delivered.

## 1.2 The Project

### Overview

- 1.2.1 A full description of the Project is presented in ES Chapter 2: The Project (Application Document 3.2). The Project comprises the improvement of the A66 between the M6 at Penrith and the A1(M) at Scotch Corner, identified as eight individual schemes:
- M6 Junction 40 to Kemplay Bank
  - Penrith to Temple Sowerby
  - Temple Sowerby to Appleby
  - Appleby to Brough
  - Bowes Bypass
  - Cross Lanes to Rokeby
  - Stephen Bank to Carkin Moor
  - A1(M) Junction 53 Scotch Corner.
- 1.2.2 The DCO will define the boundary within which the development and construction of the Project will take place (the Order Limits). It will also set out Limits of Deviation (LoD), which provide reasonable flexibility for the final design (in order to address any issues arising from pre-construction surveys or detailed design) whilst ensuring that the Project is delivered within an approved 'envelope' and within the Order Limits.
- 1.2.3 The A66 lies within three local planning authority boundaries: Eden District, Durham County and Richmondshire District. The A66 runs through the North Pennines Area of Outstanding Natural Beauty (AONB) between Brough and Bowes. The Lake District National Park is approximately 2km south-west of Penrith and the Yorkshire Dales National Park is located about 3.5km south of the A66 directly to the east of the Lake District National Park which is designated as a World Heritage Site.
- 1.2.4 The A66 lies within an area of rolling landscape. From Penrith the road corridor generally passes through gentle valleys characterised by large regular fields and areas of deciduous woodland. The road generally follows a similar route to the River Eden as far as Appleby-in-Westmorland. Moving east the elevation rises rapidly from approximately 170m above ordnance datum (AOD) at Brough to a peak of approximately 440m AOD

as it passes over Bowes Moor before gradually descending again to an elevation of approximately 150m AOD at Scotch Corner.

- 1.2.5 The key constraints which surround the Project are illustrated in full in Annex A: Constraints Map.

### Programme

- 1.2.6 Subject to a DCO being granted by the Secretary of State for the Project, construction works are planned to commence in 2024, with all schemes targeted for completion by the end of 2028 or earlier. Enabling works may commence before 2024, subject to appropriate consent, and would be subject to the same controls and commitments as set out in this EMP, as relevant to the works being undertaken.

- 1.2.7 Plate 1-1: Proposed construction dates for each scheme details the provisional construction dates on a scheme-by-scheme basis (subject to further construction planning by the PC.).

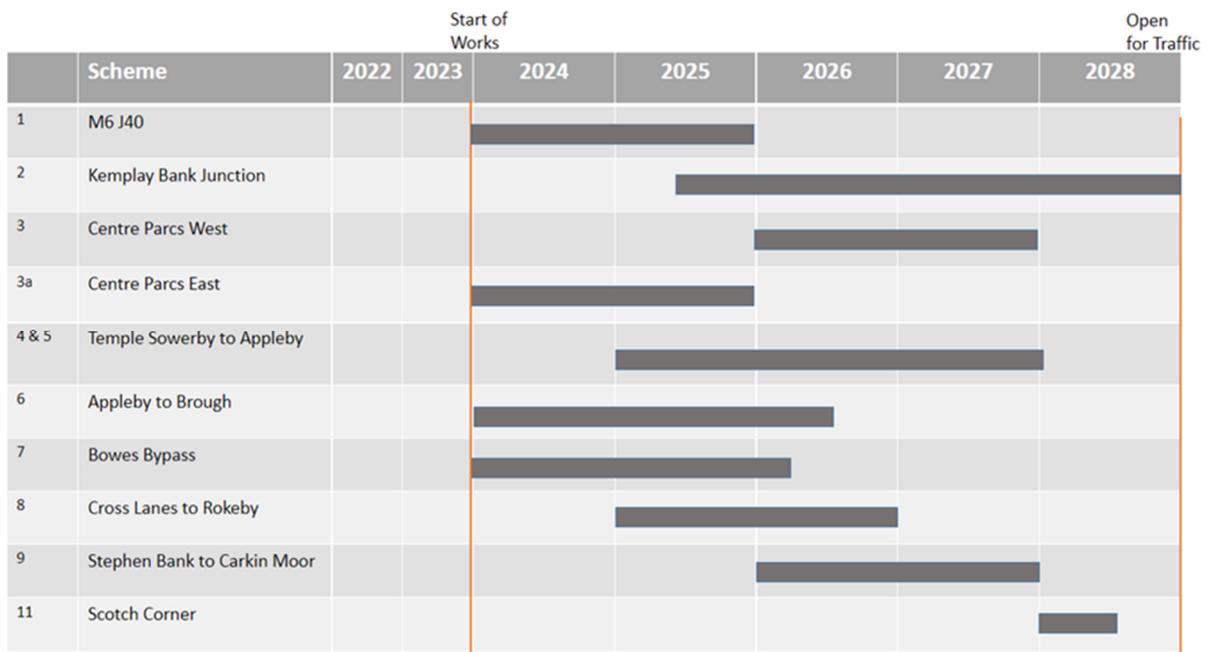


Plate 1-1: Proposed construction dates for each scheme

### Project objectives

- 1.2.8 National Highways has been appointed by the Secretary of State (SoS) to be the highway authority, traffic authority and street authority for the Strategic Road Network (SRN) (Highways England, 2017) (note Highways England are now known as National Highways). As such National Highways has set the objectives for the Project which are presented by the themes in Table 1-1: A66 project objectives

Table 1-1: A66 project objectives

Theme	Project Objectives
Economic	Regional: Support the economic growth objectives of the Northern Powerhouse agenda.

Theme	Project Objectives
	Ensure the improvement and long-term development of the SRN through providing better national connectivity including freight.
	Maintain and improve access for tourism served by the A66.
	Seek to improve access to services and jobs for local road users and the local community.
Transport	Improve road safety, during construction, operation and maintenance for all, including road users, non-motorised users (NMU), road workers and local residents.
	Improve journey time reliability for road users.
	Improve and promote the A66 as a strategic connection for all traffic.
	Improve the resilience of the route to the impact of events such as incidents, roadworks and severe weather events.
	Seek to improve NMU provision along the route.
Community	Reduce the impact of the route on severance for local communities.
Environment	Minimise adverse impacts on the environment and where possible optimise environmental improvement opportunities.

### 1.3 Structure of the EMP

#### 1.3.1 The remainder of this document is structured as follows

- Section 1.4: Overall approach to EMP and environmental commitments: Describes the overall approach that has been adopted for the EMP including a list of pre-commencement DCO commitments that sit under the EMP, the process of consultation and engagement, the determination process, the process for dealing with change and details of record keeping.
- Section 2: Roles and responsibilities: This section defines the project roles and environmental management responsibilities which the PC(s) will be required to identify within the EMP, in order to deliver the environmental commitments.
- Section 3: Record of Environmental Actions and Commitments (REAC): This section identifies the essential mitigation that must be implemented to address the likely significant and non-significant (where mitigation is appropriate) effects of the works, including pre-commencement commitments.
- Section 4: Consents and permissions: This section specifies the approach to anticipated consents and permissions that are required to deliver the environmental mitigation for the Project, as set out in the Consents and Agreements Position Statement (Document Reference 5.4) which details the relevant provisions included within the DCO related to these matters and any specified conditions of those permissions.
- Section 5: Environmental asset data and as-built drawings: This section sets out what information is to be collected during each Project phase and how it will be stored and transferred to National Highways.

- Section 6: Details of maintenance and EMP monitoring activities: This section sets out required monitoring and maintenance activities.
- Section 7: Induction, training and briefing procedures for staff: This section describes the specific induction activities, training and briefing procedures in relation to environmental management throughout the construction (and if relevant, later) phase(s).
- Annexes: includes Annex A Constraints map; Annex B Relevant management plans; Annex C Environmental method statements; Annex D Emergency procedures and records of incidents; Annex E Evaluation of change register; Annex F Final environmental investigations and monitoring reports.

1.3.2 As stated above, this is a live document that will develop and evolve with iterations through the lifetime of the Project (within the confines of the certified EMP under the DCO, once granted). In line with the requirements of DMRB this will include, as a minimum, a Second Iteration (or iterations that apply to a part of the Project only) for construction post DCO examination and a Third Iteration (or iterations that apply to a part of the Project only) at the end of construction for operation and maintenance of the Project.

#### **1.4 Overall approach to environmental management and interaction with the DCO**

##### **Interactions with the DCO: introduction and approach**

- 1.4.1 The UK Government's 'Project Speed' initiative announced as part of 'A New Deal for Britain' (Prime Minister's Office, 2020), aims to bring forward proposals to deliver public investment projects more strategically and efficiently. 'Project Speed' aims to ensure that the right things are built better, cutting construction time in half.
- 1.4.2 The A66 Project has been identified as one of the 'vital infrastructure projects' subject to Project Speed. The initiative seeks to cut down the time it takes to design, develop, and deliver the 'right things better and faster than before'.
- 1.4.3 To contribute to this objective National Highways has considered how it could streamline and improve for all participants the determinations that are required to be made after the grant of development consent before different aspects of projects proceed. Normal industry practice is for the need for these post consent determinations to be set out in a Schedule to the DCO, which are referred to as "requirements". Typically, requirements will require post consent determinations to be made on a range of topics, such as surface water drainage, landscape design, and construction traffic management. Requirements must be set out in language that is compliant with the statutory instrument drafting conventions that apply to a development consent order. Increasingly, in addition to requirements, Environmental Management Plans (often known as Construction Environmental Management Plans) are used to articulate in greater detail than is feasible within the constraints of statutory instrument drafting conventions, the vast majority of the environmental management required

to construct, operate and maintain the projects for which development consent is sought.

- 1.4.4 One consequence of this typical approach is that participants in the process, whether that is interested parties, public bodies with important statutory functions, contractors tasked with delivering the Project or National Highways itself, are required to review a range of documents, including a statutory instrument, to understand the post consent determinations that are required to be made and the process by which those post consent determinations are to be made, before important infrastructure projects can begin and their public benefits can be realised.
- 1.4.5 This EMP is National Highways' response to these challenges.
- 1.4.6 It is a single document that sets out the post consent determinations that are required to be made before the Project can proceed. It is a single repository of both the substance of the environmental management required for the Project and the process by which those determinations in relation to that environmental management are to be made. It replaces the "standard" pre-commencement requirements that are typically included in National Highways' development consent orders. In doing so, it does not abandon the substance of those provisions; instead they are provided through this EMP and compliance with the substance of this EMP and the process through which post consent determinations are to be made is secured through streamlined provisions of the DCO.
- 1.4.7 The purpose of the EMP is to set out the management actions that need to be implemented to mitigate the environmental effects of the project as identified in the Environmental Statement (ES) and to demonstrate compliance with relevant environmental legislation. It sets out the measures, commitments and actions needed to manage and mitigate environmental effects identified within the ES during construction and operation (including maintenance) of the project. This iteration of the EMP is submitted with the DCO application and is based on the design for which the DCO is sought.

#### [Post consent determinations to be made before construction of the Project can begin](#)

- 1.4.8 This section sets out the post consent determinations that must be made before the Start of Works.
- 1.4.9 In this section of the EMP:
- "authorised development" means the development and associated development authorised by the DCO as is more particularly set out in article 2(1) of the DCO;
- "Authority" means National Highways;
- "start" means beginning to carry out any material operation as defined in section 56(4) (time when development begun) of the Town and Country Planning Act 1990 that forms part of the authorised development other than archaeological investigations and mitigation works carried out in

accordance with an approved Detailed Heritage Mitigation Strategy (D-CH-01) for those works, ecological surveys and mitigation works, investigations for the purpose of assessing and monitoring ground conditions and levels, remedial work in respect of any contamination or other adverse ground conditions, erection of any temporary means of enclosure, receipt of construction plant and equipment, erection of construction plant and equipment and the temporary display of site notices or information.

1.4.10 Table 1-2 Consultation requirements for specified commitments, below lists in column:

- (1) The reference of measures that are more particularly described in Table 4.2 (REAC tables)
- (2) The title of the measure
- (3) The consultees that must be consulted in accordance with the procedures set out in section 2.3 of this EMP in relation to the measure in column (1).

1.4.11 Before the start of any part of the authorised development each of the measures listed in column (1), to the extent applicable to that part, must have been approved as part of a second iteration of this EMP that relates to the relevant part of the Project, following consultation with the bodies listed in column (3), in accordance with the process stipulated by this EMP in relation to that part of the authorised development.

Table 1-1 Consultation requirements for specified commitments

REAC reference	Summary	Consultee(s)
Management plans, strategies and method statements		
D-BD-01	Landscape and Ecology Management Plan	Local Planning Authorities, Natural England, AONB Partnership (in relation to Temple Sowerby to Appleby and Bowes Bypass)
D-MAW-01	Site Waste Management Plan	Local Planning Authorities, Environment Agency
D-CH-01	Detailed Heritage Mitigation Strategy	Historic England, County Archaeologists, Local Planning Authorities
D-AQ-01	Air Quality and Dust Management Plan	Local Planning Authorities
D-NV-01	Noise and Vibration Management Plan	Local Planning Authorities
D-PH-01	Public Rights of Way Management Plan	Local Planning Authorities, Local Highway Authorities
D-RDWE-01	Ground and Surface Water management Plan	Environment Agency, Lead Local Flood Authorities, Local Planning Authorities
D-GS-01	Materials Management Plan	Environment Agency, Local Planning Authorities

D-GS-02	Soils Management Plan	Environment Agency, Local Planning Authorities
D-GEN-09	Construction Worker Travel and Accommodation Plan	Local Planning Authorities, Local Highways Authorities
D-PH-02	Community Engagement Plan	Local Planning Authorities
D-PH-03	Skills and Employment Strategy	Local Planning Authorities
D-GEN-10	Construction Traffic Management Plan	Local Planning Authorities, Local Highway Authorities, Appleby Horse Fair Multi-Agency Strategic Coordinating Group
D-GEN-08	Site Establishment Plan	Local Planning Authorities
D-BD-07	Invasive Non-Native Species Management Plan	Local Planning Authorities, Natural England, Environment Agency
MW-BD-15	Working in and near an SAC Method Statement	Natural England, Environment Agency, Local Planning Authorities
MW-BD-03	Working in watercourses Method Statement	Environment Agency, Lead Local Flood Agency, Local Planning Authorities
MW-CH-03	Working in and near Scheduled Monuments Method Statement	Historic England, County Archaeologists, Local Planning Authorities
MW-RDWE-04	Piling Method Statement	Environment Agency, Local Planning Authorities
Detailed Design		
D-LV-02	Landscaping scheme	Local Planning Authorities, Natural England, AONB Partnership (in relation to Temple Sowerby to Appleby and Bowes Bypass)
D-RDWE-02	Surface water drainage	Environment Agency, Lead Local Flood Authorities, Local Planning Authorities
D-BD-05 and D-BD-06	Environmental mitigation design	Local Planning Authorities, Natural England, Environment Agency
MW-GS-01 and D-GS-04	Remediation Plans	Environment Agency, Local Planning Authorities

## Single consultation procedure

### Introduction

1.4.12 Given the range of matters upon which National Highways will seek the views of stakeholders it is considered that a single consultation procedure will assist both National Highways and consultees in efficiently managing the process.

1.4.13 Where specified in Table 2-1 Consultation requirements for specified commitments, the corresponding EMP commitments in the REAC tables require consultation with the bodies specified in relation to the subject matter of those commitments. This section of the EMP sets out:

- How those bodies will be consulted;

- When those bodies will be consulted;
- How National Highways can be satisfied that the views of consultees have been considered; and
- How the consultation proceedings are recorded and made publicly available.

## Scope

1.4.14 The procedure in this section applies to the consultation that National Highways is required to carry out on a second iteration of this EMP prior to its approval by the Secretary of State, in accordance with the provisions of the DCO and as otherwise specified in article 53 (Environmental Management Plan) of the draft DCO.

1.4.15 The procedure in this section also applies to consultation that National Highways is required to carry out prior to determinations that are required to be made in accordance with the REAC tables set out in Table 3-2: Register of environmental actions and commitments of this EMP.

## EMP Interpretation

1.4.16 In this section:

- “Authority” means National Highways
- “Commitment” means the relevant commitment listed in Table 2-1 Consultation requirements for specified commitments, and which is set out in Table 3-2: Register of environmental actions and commitments
- “Consultation Material” means the materials upon which the views of the Consultees are required to be sought, which should include a draft of the Submission
- “Consultation Period” means the period of 20 Working Days starting with the day after the Authority issues the Consultation Materials to the Consultee in relation to the relevant Commitment
- “Consultation Response” means a response from a Consultee received by the Authority before the expiry of the Consultation Period
- “Consultee” means the person or persons that National Highways is required to consult in relation to the Consultation Material
- “Principal Contractor” or “PC” means a person or persons appointed by National Highways to carry out the Project or a part of the Project, in relation to the relevant Commitment
- “Revised Consultation Material” means the Consultation Materials that have been updated by the PC following consideration of the Consultation Responses
- “Revision Period” means the period of 10 Working Days starting with the day after the Revised Consultation Material is issued by the Authority
- “Submission” means the materials that must be approved to discharge the Commitment
- “Summary Report” means a report summarising consultation responses received together with the PC’s consideration of those responses

- “Working Days” means a day other than a Saturday or Sunday which is not Christmas Day, Good Friday or a bank holiday under section 1 (bank holidays) of the Banking and Financial Dealings Act 1971.

### Starting consultation

- 1.4.17 The PC must submit the Consultation Materials to the Authority.
- 1.4.18 The Authority must give each Consultee not less than 5 Working Days’ advance notice of its intention to consult on the relevant Commitment.
- 1.4.19 The Authority must provide the Consultation Material to each Consultee specified in the Commitment, together with a named contact at the Authority with whom the Consultee may discuss the Consultation Material. Where a Consultee has provided the Authority a named contact in relation to the matter in question, the Authority must instead supply the Consultation Materials and the Authority’s named contact’s details to the contact named by the Consultee in relation to that matter.

### Responding to the consultation

- 1.4.20 Each Consultee is entitled to respond to the consultation within the Consultation Period (which is 20 Working Days from the day after the Consultation Material is issued by the Authority). If any Consultee does not provide a response within the Consultation Period, that Consultee is deemed to have made no comments.
- 1.4.21 The form of each Consultee’s response must be either:
- A single marked-up copy of the Consultation Materials
  - One document containing a table of comments on the Consultation Materials, or
  - Such other form as is agreed in writing with the Authority.

### The Principal Contractor’s consideration of consultation responses

- 1.4.22 The Authority must provide the PC with the Consultation Responses.
- 1.4.23 The PC must have regard to the Consultation Responses and where it considers it appropriate to do so may reflect those comments in the Revised Consultation Materials.
- 1.4.24 The PC must provide the Revised Consultation Materials to the Authority together with a Summary Report setting out the consultation undertaken and a summary of how the PC has had regard to the Consultation Responses. The summary report must include an explanation of the reasons why any Consultation Responses have not resulted in amendments being included in the Revised Consultation Material.
- 1.4.25 The PC must also provide each Consultee with a copy of the Summary Report and Revised Consultation Material, unless that Consultee has indicated in its Consultation Response that its comments are of such a nature that it does not wish to consider the Revised Consultation Material.

### Consultee’s review of the Revised Consultation Materials

- 1.4.26 Each Consultee is entitled to provide the Authority with its comments on the Revised Consultation Material and Summary Report within the

Revision Period (10 Working Days starting on the day after the Revised Consultation Materials and Summary Report is issued by the Authority). If any Consultee does not provide the Authority with a response within the Revision Period, that Consultee is deemed to have made no comments.

1.4.27 Each Consultee's comments must relate only to:

- How its previous Consultation Response has been addressed in the Revised Consultation Materials and Summary Report; and
- Any changes to the Revised Consultation Materials since the issue of the Consultation Materials.

1.4.28 Each Consultee's comments must be in the form of either:

- A marked-up copy of the Revised Consultation Materials;
- A table of comments on the Revised Consultation Materials and Summary Report; or
- Such other form as is agreed in writing with the Authority.

#### Principal Contractor's consideration of the consultee's review comments

1.4.29 The Authority must provide the PC with the Review Comments received during the Review Period.

1.4.30 The PC must have regard to the Review Comments when finalising the Revised Consultation Materials into the Submission.

1.4.31 The PC must submit the Submission to the Authority for its, or the Secretary of State's determination (as applicable, in accordance with the provisions of the DCO), together with an updated Summary Report that explains how the PC has had regard to the Review Comments. At the same time the PC must provide the Consultees with a copy of the Submission and the updated Summary Report.

#### Procedure following the Authority's determination

1.4.32 If the Authority determines to approve the Submission, the Authority must notify each Consultee of that fact and provide each Consultee with a copy of the approved Submission.

1.4.33 As soon as is reasonably practicable after determining to approve a Submission the Authority must publish the Submission together with the Summary Report on a publicly available website maintained by the Authority.

1.4.34 If the Authority determines not to approve the Submission such that the Submission requires amendment, the procedures set out in paragraphs 1.4.22 to 1.4.34 are to be repeated in relation to the amendments made to the Submission as though the amended Submission was Revised Consultation Materials.

#### Procedure following the Secretary of State's determination

1.4.35 If the Secretary of State notifies the Authority that the Secretary of State has determined to approve the Submission, the Authority must notify each Consultee of that fact and provide each Consultee with a copy of the approved Submission.

- 1.4.36 As soon as is reasonably practicable after receiving notice that the Secretary of State has approved a Submission the Authority must publish the Submission together with the Summary Report on a publicly available website maintained by the Authority.
- 1.4.37 If the Secretary of State notifies the Authority that the Secretary of State has determined not to approve the Submission such that the Submission requires amendment, the procedures set out in paragraphs 1.4.22 to 1.4.34 are to be repeated in relation to the amendments made to the Submission as though the amended Submission was Revised Consultation Materials

### National Highways' post consent determinations

#### Introduction

- 1.4.38 The provisions of the DCO require National Highways to apply for the Secretary of State's approval of a Second Iteration EMP relating to a part of the Project before works start in relation to that part. It also makes provision for National Highways, or in some circumstances the Secretary of State, to approve amendments to a Second Iteration EMP.
- 1.4.39 National Highways is the strategic highway authority for England and the body that publishes and maintains the Design Manual for Roads and Bridges, the cornerstone of environmental assessment for highways schemes, and publishes the national (UK wide) design standards for fast moving roads and supporting advice notes. National Highways has unrivalled expertise in the assessment, design, operation and maintenance of England's strategic road network. Among other duties, the conditions of National Highways' licence require it to "minimise the environmental impacts of operating, maintaining and improving its network and seek to protect and enhance the quality of the surrounding environment".
- 1.4.40 In a similar fashion as local highway authorities promoting their own road schemes, National Highways is an appropriate person to make post consent determinations under the EMP for the Project. This section sets out the safeguards that must be followed by National Highways when making post consent determinations in accordance with the provisions of the DCO.

#### National Highways' Safety, Engineering and Standards team

- 1.4.41 National Highways Safety, Engineering and Standards team ("SES") is functionally separated from the project teams, including the project team responsible for the Project. Its existing remit is to oversee the work of the project teams, and their appointed PCs, to ensure that National Highways' standards are applied appropriately to its projects. The SES team has the expertise to play a key role in National Highways making post consent determinations.

#### Post consent determinations made by the Authority

- 1.4.42 Post consent determinations of the Authority must be made by persons that are functionally separated from the project team.

- 1.4.43 National Highways anticipates that these functionally separated persons will be drawn from the SES team but a degree of flexibility is required to account for any future changes to its organisational arrangements.
- 1.4.44 Before making any post consent determination National Highways must publish on a publicly accessible website maintained by it, the handling arrangements that will be in place to ensure the functional separation of National Highways' roles as applicant and relevant authority.
- 1.4.45 The handling arrangements must set out:
- The identity of the internal entity or persons within National Highways that are to exercise the functions of relevant authority together with a summary of the resources available to the relevant authority to act impartially and objectively
  - The measures in place to prohibit any person acting or assisting in the exercise of the functions of the relevant authority from being involved in, or assisting with, the exercise of National Highways' functions as applicant
  - The measures in place to prohibit any improper discussion or communication about the Project between those persons that are engaged in the exercise of National Highways' functions as relevant authority and those persons engaged in the exercise of National Highways' functions as applicant; and
  - The measures in place to prohibit any person involved in the exercise of National Highways' functions as applicant from giving any instructions to, or putting pressure upon, any person acting, or assisting in the exercise of, or from attempting to do so, in relation to National Highways' exercise of its functions as relevant authority in relation to the Project.
- 1.4.46 National Highways may change the handling arrangements from time to time but must first publish updated handling arrangements.

#### Dealing with change

- 1.4.47 As the detailed design of the Project develops and as the works are being carried there may be good reasons for the PC to carry out the Project in a different way or subject to changes to the management plans and other measures that are included in the approved EMP.
- 1.4.48 If changes are required to the approved EMP the PC must apply to the Authority for its approval of the change before that change is implemented. The Authority must then determine whether the change proposed can be determined by it, or by the Secretary of State, in accordance with the provisions of the DCO.
- 1.4.49 As set out in the provisions of the DCO, the procedures set out in this chapter 2 of the EMP apply to an application to amend the approved EMP.

#### Record keeping

- 1.4.50 National Highways must publish, on a publicly accessible website maintained by it, records of all determinations made in relation to the EMP.

- 1.4.51 It must also publish on that website the approved EMP (including the approved EMP as may be amended from time to time in accordance with the provisions of the DCO).

#### Non-Conformance

- 1.4.52 Non-conformance with the EMP will be dealt with in accordance with the PC's procedures. A Non-Conformance Report (NCR), will be raised to record any non-conformance that is identified through either the audits described above or through any other site inspections or reports received by the EM (e.g. work carried out that is not compliant with this EMP or commitments are not implemented correctly). Further detail on this procedure is set out in Section 6.2 of this EMP.

## 2 Roles and responsibilities

### 2.1 Overview

- 2.1.1 National Highways or the project management consultant appointed by National Highways will be responsible for overseeing management of the construction of the Project. Some of the site supervision roles such as the engineering clerk of works and procurement specialist consultants to supervise, monitor or check the PC method statements, including sensitive activities, will be delegated where required by National Highways.
- 2.1.2 The PC is the contractor with control over the construction phase of a project or package of work. They are appointed in writing by National Highways to plan, manage, monitor and coordinate health and safety during this phase. The PC will be required to delegate responsibilities to experienced onsite personnel within the key areas of the site. The delegation of responsibilities will be clearly identified within the EMP and records will be held in site files.
- 2.1.3 National Highways intends to appoint up to four PCs to deliver the Project under four packages of work, through the existing National Highways Delivery Integration Partner (DIP) framework.

### 2.2 Project roles

- 2.2.1 The key project roles envisaged at this stage for National Highways and the PC are listed in Table 2-1.
- 2.2.2 These will be reviewed and agreed in subsequent stages of the Project and any additional roles identified. Contact details for the people undertaking the roles will be provided in the table below and will be updated as required throughout the duration of the Project.
- 2.2.3 Future iterations of this section of the EMP will include individual names and contact details for specified roles prior to the start of construction. It will also include competent expert statements demonstrating that the names identified for each of the roles has the appropriate experience and expertise to undertake that role.
- 2.2.4 It is envisaged that as an EMP is developed for each subsequent stage of the Project, the roles and responsibilities will be further defined and clarified upon each iteration (within the confines of the certified EMP under the DCO once granted).

Table 2-1: Contact details for key project role and organisations involved in the delivery of the EMP

Role	Name	Email	Phone
National Highways Project Manager(s)	TBC	TBC	TBC
National Highways Programme Manager	TBC	TBC	TBC
PC Project Manager(s)	TBC	TBC	TBC
PC Environment Manager(s)	TBC	TBC	TBC
PC Ecological Clerk of Works(s)	TBC	TBC	TBC
PC Archaeological Clerk of Works(s)	TBC	TBC	TBC

Role	Name	Email	Phone
PC Landscape Specialist(s)	TBC	TBC	TBC
PC Arboricultural Specialist(s)	TBC	TBC	TBC
PC Noise and Vibration Specialist(s)	TBC	TBC	TBC
PC Traffic Control Officer(s)	TBC	TBC	TBC
PC Site Materials and Waste Manager(s)	TBC	TBC	TBC
PC Community Relations Manager (CRM)(s)	TBC	TBC	TBC
PC Agricultural Liaison Officer(s)	TBC	TBC	TBC
Other Environmental Specialist(s), if applicable	TBC	TBC	TBC

## 2.3 Environmental management responsibilities

- 2.3.1 Each of the roles in Table 2-1: Contact details for key project role and organisations involved in the delivery of the EMP also have defined environmental responsibilities for construction that the PC will establish and maintain. These are set out in Table 2-2: Roles and responsibilities during construction.
- 2.3.2 The responsibilities defined include those relating directly to the Project and the requirements of the EMP. The PC will delegate responsibilities to construction personnel and will be clearly identified within relevant documents. The PC shall also establish a management structure that includes an organisational chart encompassing all staff responsible for delivery of environmental mitigation measures and shall include this chart within the EMP.

Table 2-2: Roles and responsibilities during construction

Role	Responsibility
National Highways Programme Manager	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>Monitor implementation of the EMP, management plans, method statements and any detailed plans required by the approved version of this EMP (for example protected species protection)</li> </ul>
National Highways Project Manager	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>Monitor whether consultation has been undertaken, where required, in accordance with the principles set out in this EMP)</li> </ul> <p>Overall responsibilities:</p> <ul style="list-style-type: none"> <li>To monitor the contractors' performance against the contract including any environmental commitments and targets agreed for the Project.</li> </ul>
PC Project Manager(s)	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>Undertake consultation, where required, in accordance with the principles set out in this EMP</li> <li>Ensure that all controls specified within the EMP are implemented by employees and sub-contractors.</li> </ul> <p>Overall environmental responsibilities:</p> <ul style="list-style-type: none"> <li>Provide information on contract requirements to the EM following contract award and prior to start of works on site.</li> <li>Ensure environmental and waste requirements are included on requisitions and in subcontracts and orders.</li> <li>Ensure that all required consents/licences are in place in line with the relevant project phase.</li> <li>Log and monitor incidents and non-compliances. Report incidents and non-compliances to National Highways and relevant external authorities at the earliest possible opportunity.</li> <li>Provide an initial point of contact for members of the public/local community who have queries regarding the works</li> <li>Ensure employees and sub-contractors receive Induction Training (including environmental) and tool box talks, as appropriate.</li> <li>Ensure actions resulting from non-compliances and observations raised during audits are completed by the deadlines set.</li> </ul>

Role	Responsibility
	<ul style="list-style-type: none"> <li>• Undertake inspections alongside the EM to ensure that the environmental controls as set out within the EMP are in place and working effectively.</li> <li>• Ensure all records are retained and readily available on site.</li> </ul>
<p>PC Environment Manager(s) (EM) and Section Environmental Lead(s)</p>	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>• Develop the EMP through its future as part of detailed design and into preconstruction works based on the requirements of this EMP.</li> <li>• Undertake site inspections to monitor compliance with the environmental licences/consents for the works and the measures within a second iteration EMP once approved.</li> <li>• Prepare any changes to the EMP in consultation with the PC Project Manager.</li> <li>• Maintaining and updating the EMP on an ongoing basis as required during the relevant project phase.</li> <li>• Review and approval of environmental elements of Risk Assessments and Method Statements.</li> <li>• Manage the delivery of the various management plans defined within the annexes of this EMP, using appropriate technical expertise as required.</li> <li>• Manage the delivery of the monitoring required under the EMP, alongside relevant specialists, and reporting to relevant stakeholders at a frequency to be defined in the EMP.</li> <li>• Prepare a Third Iteration EMP (or EMPs) on completion of construction, for handover to National Highways and/or its appointed representative (within the confines of the certified EMP under the DCO once granted).</li> </ul> <p>Overall responsibilities:</p> <p>Responsible for ensuring that the Project complies with all environmental legislation, consents, objectives, targets and other environmental commitments, including those arising from the ES Volume 1: Main Text (Application Document Number 3.2) throughout the relevant project phase. The EM will be required to:</p> <ul style="list-style-type: none"> <li>• Provide Toolbox Talks and environmental inductions to all staff involved in the Project.</li> <li>• Manage queries and correspondence on environmental issues.</li> <li>• Approve by way of sign off that the environmental commitments included in Section 4 of this EMP have been implemented in accordance with the EMP to the appropriate standard.</li> <li>• Implement follow-up corrective actions to ensure compliance with UK regulations and legislation.</li> <li>• Keep a record of all activities on site, environmental problems identified, transgressions noted, and a schedule of all remedial tasks undertaken.</li> </ul>

Role	Responsibility
	<ul style="list-style-type: none"> <li>• Provide appropriate professional and practical advice to contractors, consultants and project team members associated with environmental and ecological issues and where appropriate resolve issues in a practical and efficient way.</li> <li>• Be the main point of contact for regulatory liaison relevant to the Project.</li> </ul>
<p>PC Ecological Clerk(s) of Works (ECoW)</p>	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>• Reports to the EM</li> <li>• Review and input into the relevant section of the EMP, including ecology specific Management Plans</li> <li>• Responsible for ensuring that all ecological elements of the EMP are complied with</li> <li>• Updating Annex B1: Landscape and Ecological Management Plan and Annex B15: Invasive Non-Native Species Management Plan of the EMP together with the Landscape Specialist.</li> </ul> <p>Overall responsibilities:</p> <p>Responsible for ensuring that the Project complies with all ecological legislation and consents, including the DCO and those arising from the ES Volume 1: Main Text (Application Document Number 3.2) throughout the relevant project phase.</p> <p>The ECoW will be required to:</p> <ul style="list-style-type: none"> <li>• Ensure compliance with ecological and landscape obligations.</li> <li>• Undertake watching briefs during site clearance activities, to ensure that any unanticipated discoveries of notable flora and fauna are appropriately dealt with.</li> <li>• Approve by way of sign off, that the ecological commitments included in Section 4 of this EMP have been implemented in accordance with the EMP to the appropriate standard.</li> <li>• Monitor works during construction at sensitive sites, including but not limited to, the North Pennines AONB (including the North Pennine Moors Special Protection Area (SPA) and Special Area of Conservation (SAC)) and the River Eden SAC and SSSI and its tributaries (see Chapter 6: Biodiversity for full list of sensitive sites).</li> <li>• Monitor and provide guidance in respect of the EMP/Landscape and Ecological Management Plan (LEMP) during the creation of habitats.</li> <li>• Give Toolbox Talks, where required, to inform all site personnel of the ecological constraints on site related to both flora and fauna.</li> </ul>
<p>PC Archaeological Clerk(s) of Works (ACoW)</p>	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>• Review and input into the relevant sections of the EMP.</li> </ul>

Role	Responsibility
	<ul style="list-style-type: none"> <li>• Responsible for monitoring compliance of all archaeological elements of the EMP during construction.</li> <li>• Review and update Annex B3: Detailed Heritage Mitigation Strategy and produce detailed Written Schemes of Investigation (WSI) for the Project.</li> </ul> <p>Overall responsibilities:</p> <p>Responsible for ensuring that the Project complies with all archaeological and historic environment legislation and consents, including the DCO and those arising from the ES throughout the relevant project phase.</p> <p>The ACoW will be required to:</p> <ul style="list-style-type: none"> <li>• Monitor and ensure compliance with Annex B3: Detailed Heritage Mitigation Strategy and Overarching Written Schemes of Investigation.</li> <li>• Provide Toolbox Talks, where required, to inform all site personnel of the archaeological and historic environment constraints on site, the protection measures that are required and their obligations under this EMP and generally to ensure that these are put in place and complied with.</li> <li>• Monitor protection measures to ensure these are in place and maintained appropriately throughout the construction period in compliance with Annex B3: Detailed Heritage Mitigation Strategy and Overarching Written Schemes of Investigation.</li> <li>• Liaise and consult closely with the Authority on an ongoing basis throughout the construction works and the handover to the operation phase to ensure compliance with all measures set out in the EMP and Annex B3: Detailed Heritage Mitigation Strategy and Overarching Written Schemes of Investigation.</li> <li>• Ensure compliance with EMP obligations relevant to archaeology.</li> </ul>
PC Landscape Specialist(s)	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>• Review and input into the relevant sections of the EMP, when prepared by the EM.</li> <li>• Responsible for monitoring compliance of all landscape elements of the EMP during construction.</li> <li>• Review and updates to Annex B1: Landscape and Ecological Management Plan (LEMP) of the EMP, together with the ECoW.</li> </ul> <p>Overall responsibilities:</p> <ul style="list-style-type: none"> <li>• Monitors and provides guidance in respect of the LEMP during the creation of habitats and landscape features.</li> <li>• Approve by way of sign off, that the landscape commitments included in Section 4 of this EMP have been implemented in accordance with the EMP to the appropriate standard.</li> </ul>
PC Arboricultural Specialist(s)	<p>EMP responsibilities:</p>

Role	Responsibility
	<ul style="list-style-type: none"> <li>• Review and input to relevant sections of the EMP.</li> <li>• Responsible for ensuring that the elements of the EMP related to tree works are complied with during construction.</li> <li>• Prepares the Arboricultural Mitigation Strategy for the Project.</li> </ul> <p>Overall responsibilities:</p> <ul style="list-style-type: none"> <li>• Monitors and provides guidance in respect of the LEMP during the creation of these habitats, with specific reference to tree establishment.</li> <li>• Approves, by way of sign off, that the REAC and LEMP commitments in relation to tree and scrub planting have been implemented to the appropriate standard.</li> </ul>
PC Noise and Vibration Specialist(s)	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>• Review and input into the relevant sections of the EMP</li> <li>• Ensures elements of the EMP relating to noise and vibration design are complied with</li> <li>• Prepare the detailed Noise and Vibration Management Plan for the Project</li> </ul> <p>Overall responsibilities:</p> <ul style="list-style-type: none"> <li>• Responsible for production of applications to the Local Authorities for 'prior consent' under Section 61 of the Control of Pollution Act 1974, including liaison with the construction team and Local Authority Environmental Health Officer.</li> </ul>
PC Traffic Control Officer(s)	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>• Updating Annex B14 Construction Traffic Management Plan (CTMP) including other detailed plans as required.</li> </ul> <p>Overall responsibilities:</p> <p>The Traffic Control Officer will ensure compliance with the CTMP in accordance with the EMP. Additional responsibilities will include:</p> <ul style="list-style-type: none"> <li>• Management and implementation of traffic management measures identified within the CTMP.</li> <li>• Ensuring compliance with all relevant health and safety directives in liaison with the contractor's Health and Safety Manager relating to operations and live traffic.</li> <li>• Management of the layout of site access and egress points for all construction sites and compounds.</li> </ul>

Role	Responsibility
	<ul style="list-style-type: none"> <li>• Arranging for site inspections at regular intervals, equipment attended to and maintained, and in the case of accidents or incidents ensuring replacement signs, cones, bollards, lights and any other necessary traffic control measures without delay.</li> <li>• Maintaining a log of all complaints received in relation to traffic during project construction.</li> </ul>
<p>PC Site Materials and Waste Manager(s)</p>	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>• Review and input to relevant sections of the EMP, when prepared by the EM.</li> <li>• Responsible for ensuring that all materials and waste elements of the EMP are complied with during construction.</li> <li>• Updating the Site Waste Management Plan (SWMP) in accordance with Annex B2: Site Waste Management Plan, to this EMP.</li> <li>• Updating the Materials Management Plan (MMP) in accordance with Annex B8: Materials Management Plan, to this EMP.</li> </ul> <p>Overall responsibilities:</p> <p>The Site Materials and Waste Manager is required to have the necessary competencies as set out in the British Society of Soil Science Standards and the role will include the following responsibilities:</p> <ul style="list-style-type: none"> <li>• Updating and supervising the implementation of Annex B8: MMP throughout the construction of the Project</li> <li>• Updating and supervising the implementation of Annex B9: Soil Management Plan of the EMP</li> <li>• Updating and supervising the implementation of the SWMP throughout the construction of the Project and to ensure that waste is disposed of economically and safely.</li> </ul>
<p>PC Community Relations Manager(s) (CRM)</p>	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>• Review and input to relevant sections of the EMP.</li> </ul> <p>Overall responsibilities:</p> <p>Engagement with the public, non-agricultural landowners, stakeholders and other interested parties, outreach and education, where appropriate. The role will include the following responsibilities:</p> <ul style="list-style-type: none"> <li>• Responding to any concerns or complaints raised by the public in relation to the works.</li> <li>• Liaising with the PM and EM on community and stakeholder concerns relating to the works and act as the main interface with the community and other stakeholders, alongside any National Highways presence that is required.</li> <li>• Maintain a log of complaints relating to the environment.</li> </ul>

Role	Responsibility
	<ul style="list-style-type: none"> <li>• Ensuring that the PM and the EM are informed of any complaints relating to the environment.</li> <li>• Keeping the public informed of project progress and any construction activities that may cause inconvenience to local communities.</li> <li>• Engaging with local schools and colleges to inform pupils and students about the Project, advise on careers within the construction industry and draw attention to the dangers of trespassing on construction sites.</li> <li>• Ensuring that the needs of groups with protected characteristics, as identified within the Equality Act 2010, are considered during the construction process.</li> </ul>
<p>PC Agricultural Liaison Officer(s)</p>	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>• Review and input to relevant sections of the EMP which to apply to agricultural businesses likely to be affected by the Project</li> </ul> <p>Overall responsibilities:</p> <p>Communications with landowners and occupiers running agricultural businesses likely to be affected by the Project (owner/occupiers) and their agents. The Agricultural Liaison Officer is required to have the necessary competencies as set out in the British Society of Soil Science Standards and the role will include the following responsibilities:</p> <ul style="list-style-type: none"> <li>• Coordinating land drainage surveys and sharing pre- and post-construction land drainage schemes with owner/occupiers in advance of finalisation for their consideration.</li> <li>• Coordinating the provision of a detailed pre-construction condition survey to include soil surveys of owner/occupiers' land.</li> <li>• Advising the contractor on risks relating to the translocation of soil diseases and ensuring appropriate protective provisions are implemented.</li> <li>• Ensuring that owner/occupiers are consulted in respect of requirements relating to field entrances and accesses across the construction areas and land-locked or severed land parcels.</li> <li>• Arranging frequent meetings with agent representatives of owner/occupiers as required.</li> <li>• Undertaking pre-construction and day-to-day discussions with affected owner/occupiers to minimise disruption, where reasonably practicable to existing farming regimes and timings of activities.</li> <li>• Undertaking site inspections during construction to monitor working practices and compliance of the contractor/s with their obligations to owner/occupiers under this EMP.</li> <li>• Liaising on reinstatement measures following completion of the works.</li> </ul>

Role	Responsibility
All Site Staff (all contractors)	<p>EMP responsibilities:</p> <ul style="list-style-type: none"> <li>• Ensure all environmental policies, procedures and rules as set out in the EMP are adhered to.</li> <li>• Organise work to be carried out to the required standard with the aim of minimum risk to the environment. All site personnel to receive instruction on their responsibilities to ensure correct environmental practice in line with the EMP.</li> </ul> <p>Overall requirements/responsibilities:</p> <p>To attend general environmental awareness training and undertake work in accordance with all works Method Statements and Toolbox Talks. Only trained personnel are to manage particular tasks such as refuelling plant and equipment, managing the stores, water quality monitoring and supervising the segregation and collection of waste. The responsibilities of all staff on site throughout the construction of the works will include the following:</p> <ul style="list-style-type: none"> <li>• All staff are to be appropriately trained to carry out their respective tasks.</li> <li>• Adhere to all relevant legislation and, where appropriate, codes of practice and guidance notes relevant to their work.</li> </ul>

### 3 Register of Environmental Actions and Commitments

#### 3.1 Introduction

- 3.1.1 The Register of Environmental Actions and Commitments (REAC) identifies the environmental commitments required to address the potential environmental effects of the Project.
- 3.1.2 The REAC presented in Table 3-2: Register of environmental actions and commitments presents an initial REAC based on the information presented in the ES and sets out the specific management and control measures relied upon within the assessments utilised for the ES.
- 3.1.3 The measures set out in the REAC tables must be implemented. The tables may, however, be developed further by the relevant PC as detailed design progresses, but future iterations will be within the confines of the certified EMP. Each iteration of the EMP will be prepared in substantial accordance with the certified EMP and will be approved in accordance with the procedures defined in the DCO.
- 3.1.4 The version of the EMP at the end of the construction phase will be subject to further iteration by the PC to set out the specific requirements of handover, operation and maintenance and will be prepared in accordance with the certified EMP. Once construction is complete, an end of construction version of the EMP (or EMPs, on a part-Project basis) will be produced, which will then be the main document containing essential environmental information passed to National Highways.

#### 3.2 Guide to the REAC

- 3.2.1 The REAC does not define general legislative requirements. It is assumed that, in addition to compliance with the measures that are set out in this table, all activities will comply with all applicable legislation in force at the time.
- 3.2.2 Table 3-1: Explanatory guide to REAC provides a summary of the purpose of, and what is included in, each column within the REAC table.

Table 3-1: Explanatory guide to REAC

Column	Explanation
Ref	A unique identifier defined within the REAC to enable simple reference to individual measures. Prefix will align with design (D), main works (MW) or maintenance/monitoring (M).
Source Ref	The source of the action, including references for source documentation, for example a source such as a mitigation reference in the ES.
Objective	The objective of the action, including reference to relevant legislation requirements.
Action Required	The environmental action or commitment that is required is defined, including any assumptions on which the action is based.

Column	Explanation
	Where an action is location specific it is stated, including a reference to where the location is defined or a specific chainage. If an action is to be implemented project-wide no location is specified. Any monitoring that is required in relation to the action is defined. Monitoring required in relation to any likely significant adverse effects is included in the REAC as specific actions.
RP	Responsible Person - The person or body responsible for delivery of the action; this will often be the contractor.
Implementation	How the action is to be implemented (for example which document secures the action), including details of risk management.
Achievement Criteria	The criteria which define the successful implementation of the action, such as a document approval which confirms the action has been undertaken.
I Date	Implementation Date - Anticipated project stage, date of implementation or achievement. D - Design or C - Construction O - operation
Sign-off	Column for signature of responsible person to indicate commitment has been implemented.

3.2.3 Reference to guidance documents within the REAC is not intended to be exhaustive. In preparing the EMP and related topic-specific plans the contractor will be required to make reference to all relevant technical guidance in individual subject areas as appropriate.

### 3.3 Register of Environmental Actions and Commitments

3.3.1 The REAC is presented in Table 3-2: Register of environmental actions and commitments.

Table 3-2: Register of environmental actions and commitments

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
D- GEN-01	N/A	To ensure appropriate control measures and monitoring systems are employed during the planning and construction of relevant works.	The PC shall have an EMS certified to BS EN ISO 14001. The PC's EMS will define appropriate control measures and monitoring systems to be employed during the planning and construction of the works for all relevant topic areas. The PC's EMS shall cover the activities of all their sub-contractors. The PC will also be required to coordinate with other contractors and relevant parties that may affect the works of the PC. This will be documented in their EMS, as appropriate. As part of their EMS, the PC shall commit to planning works in advance to ensure that, in so far as is reasonably practicable, measures to reduce environmental effects are integrated into the construction methods. For each part of the Project, the Project must be carried out in accordance with the approved EMS for that part.	PC	EMP	Project EMS certification to ISO 140001, maintained for duration of construction. Determination of the EMS by the Authority.	D	
D-GEN-02	N/A	To ensure works are planned and undertaken in accordance with current legislation, environmental best practice, National Highways environmental policies and project objectives.	The PC shall develop a scheme specific environmental policy, prior to the EMS, and to be included as part of the EMS. This policy will be developed in line with National Highways' environmental policies and the Project objectives and will set out how the contractor will: <ul style="list-style-type: none"> <li>• adhere to the requirements of environmental legislation during the works</li> <li>• commit to implementing the mitigation specified in the ES to manage the impacts associated with the works</li> <li>• commit to good practice in environmental performance throughout the phase of works</li> <li>• identify opportunities to improve the Project's whole life performance in terms of environmental and social implications</li> </ul>	PC	EMP	Production of the policy. Determination of the EMS by the Authority.	D	
D-GEN-03	EMP	To ensure works are undertaken in accordance with the Project environmental actions and commitments.	The PC's EMS and future iterations of this EMP shall include procedures to monitor compliance with the Project's environmental actions and requirements (as set out in this REAC), together with provisions for any corrective actions required.	PC	EMP	Approval of the EMS and EMP (construction).	D	
D-GEN-04	EMP	To ensure works are undertaken in accordance with the Project environmental actions and commitments.	No part of the Project can start until this EMP has been reviewed and updated in substantial accordance with the certified iteration of this EMP, has been subject to stakeholder consultation as described in Chapter 1 and has been approved by the Authority in relation to that part.	PC	EMP	Approval of an EMP (second iteration) following stakeholder consultation (as set out in Chapter 1)	D	
D-GEN-05	EMP	To ensure works are undertaken in accordance with the Project environmental actions and commitments.	No part of the Project can be opened for public use until this EMP has been updated in respect of that part to reflect the latest information regarding the stage of the Project, the project team, known environmental constraints (as described in Table A.3 in DMRB LA120) for operation and maintenance and has been approved in relation to that part. The EMP at this stage will set out post construction maintenance and monitoring requirements, incorporate the latest evaluation of change register and all other sections refined as required in relation to that part. The EMP will be updated in substantial accordance with the certified iteration of this EMP in relation to that part.	PC	EMP	Approval of an EMP (third iteration)	C	
D-GEN-06	Environmental Statement	To manage construction (and	No part of the Project can start until the following Management Plans, to the extent applicable to that part, are developed in detail, in substantial accordance with the	PC	EMP	Approval of the EMP (construction) following	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
	(Application Document 3.2)	where applicable, operational maintenance) activities so as to minimise impacts to the environment	<p>outline plans included at Annex B, have been subject to stakeholder consultation as described in Chapter 1 and have been approved in relation to that part of the Project, as part of a second iteration of this EMP that relates to the relevant part of the Project:</p> <ul style="list-style-type: none"> <li>• Landscape and Ecological Management Plan (LEMP) (Ref: D-BD-01)</li> <li>• Site Waste Management Plan (SWMP) (Ref: D-MAW-01)</li> <li>• Materials Management Plan (MMP) (Ref: D-GS-01)</li> <li>• Soil Management Plan (SMP) (Ref: D-GS-02)</li> <li>• Detailed Heritage Mitigation Strategy (HMS) (Ref: D-CH-01)</li> <li>• Air Quality and Dust Management Plan (Ref: D-AQ-01)</li> <li>• Noise and Vibration Management Plan (Ref: D-NV-01)</li> <li>• Public Rights of Way Management Plan (Ref: D-PH-01)</li> <li>• Ground and Surface Water Management Plan (Ref: D-RDWE-01)</li> <li>• Construction Worker Travel and Accommodation Plan (Ref: D-GEN-09)</li> <li>• Community Engagement Plan (Ref: D-PH-02)</li> <li>• Skills and Employment Strategy (Ref: D-PH-013)</li> <li>• Construction Traffic Management Plan (Ref: D-GEN-10)</li> <li>• Site Establishment Plan (Ref: D-GEN-08)</li> <li>• Invasive Non-Native Species Management Plan (Ref: D-BD-07)</li> </ul> <p>Further detail is provided in the topic specific sections below (at the commitment Ref in brackets after each plan)</p> <p>The relevant part of the Project must be carried out in accordance with the approved Management Plans for that part.</p>			stakeholder consultation (as set out in Chapter 1)		
D-GEN-07	Environmental Statement (Application Document 3.2)	To manage construction (and where applicable, operational maintenance) activities so as to minimise impacts to the environment	<p>No part of the Project can start until the following Method Statements are developed in detail, to the extent applicable to that part, in substantial accordance with the essay plans included at Annex C, have been subject to stakeholder consultation as described in Chapter 1 and have been approved in relation to that part of the Project, as part of a second iteration of this EMP relevant to that part:</p> <ul style="list-style-type: none"> <li>• Working in or near a Special Area of Conservation (SAC) (Ref: MW-BD-18)</li> <li>• Working in or near watercourses (Ref: MW-BD-03)</li> <li>• Working in or near a Scheduled Monument (Ref: MW-CH-04)</li> <li>• Piling (Ref: MW-RDWE-07)</li> </ul> <p>Further detail is provided in the topic specific sections below (at the commitment Ref in brackets after each plan).</p> <p>The relevant part of the Project must be carried out in accordance with the approved Method Statements for that part.</p>	PC	EMP	Approval of the EMP (construction) following stakeholder consultation (as set out in Chapter 1)	D	
D-GEN-08	Environmental Statement (Application Document 3.2)	To ensure appropriate measures are implemented during site establishment so as to minimise impacts to the environment.	<p>No part of the Project can start until a Site Establishment Plan (SEP) is developed in detail in substantial accordance with the essay plan included at Annex B 14 of this EMP, been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.</p> <p>The SEP will set out (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Details of locations and routes for site access</li> <li>• Facilities to be included at each compound location</li> <li>• Actions to be taken and facilities to be provided to protect the public road network (e.g. wheel wash facilities, roadsweepers)</li> </ul>	PC	EMP SEP	Approval of the Site Establishment Plan following stakeholder consultation (as set out in Chapter 1)	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<ul style="list-style-type: none"> <li>• Drainage design (whether temporary or permanent) for site compound and storage areas, including pollution prevention measures</li> <li>• Lighting requirements</li> <li>• Utilities provision for each compound location</li> <li>• Boundary fencing</li> <li>• Proposed re-instatement measures</li> </ul> <p>The SEP will include (to the extent applicable to the relevant part of the Project), as a minimum, the following commitments during construction of the Project:</p> <ul style="list-style-type: none"> <li>• Where reasonably practicable, the PC will seek to avoid Best and Most Versatile agricultural land (informed by the soil survey) when finalising land required temporarily to facilitate construction.</li> <li>• Compound locations, haul routes and storage areas will be selected to avoid designated sites, and be as far away from sensitive receptors as reasonably practicable (for example local residential properties, priority habitats and known locations of protected species)</li> <li>• First stage of construction for compound sites shall be to construct a boundary fence which surrounds the compound site to prevent unwanted access and assist with noise attenuation and visual screening</li> <li>• Siting to minimise severance for landowners and Public Rights of Way where reasonably practicable</li> <li>• Suitable buffer zones shall be created between compounds and existing retained vegetation through construction exclusion zones and suitable perimeter fencing. The extent of these buffer zones will be confirmed having regard to the nature of the retained vegetation</li> <li>• All fences, bunds and buildings within compounds shall be restricted to no more than 4m in height (unless otherwise agreed with the relevant Local Planning Authority)</li> <li>• All buildings within compounds shall, wherever reasonably practicable, be finished in a suitable colour to aid in their integration within the landscape</li> <li>• Maintenance of adequate hoardings to an acceptable condition to prevent unwanted access to the construction compounds</li> <li>• The PC shall use reasonable endeavours to keep hoardings and compound fencing free of graffiti or posters and well maintained throughout construction. Where the hoardings or fencing becomes subject to graffiti, posters or another maintenance issue, the PC will seek to rectify this as soon as reasonably practicable on becoming aware.</li> <li>• Site information boards shall be provided at compound locations and other suitable locations as confirmed by the PC.</li> <li>• Notices shall be displayed on site boundaries to warn of health and safety hazards on site</li> <li>• Existing walls, fences, hedges and earth banks shall be retained as far as reasonably practicable for the purposes of screening. Fencing and hoarding shall be located such that it does not damage designated or high value heritage sites, priority habitats or trees or hedgerows that are being retained;</li> <li>• Hoarding and fencing in areas at risk of flooding (those in Flood Zone 3) will be permeable to floodwater, unless otherwise agreed with the Environment Agency, to ensure that the fluvial floodplain and areas liable to other</li> </ul>					

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>sources of flooding continue to function effectively for storage and conveyance of floodwater.</p> <p>The relevant part of the Project) must be carried out in accordance with the approved Site Establishment Plan for that part.</p>					
D-GEN-09	Environmental Statement (Application Document 3.2) and Transport Assessment (Application Document 3.7)	To ensure appropriate measures are implemented during construction so as to minimise impacts to the environment and local communities from the temporary increase in local workforce and to maximise economic benefits.	<p>No part of the Project can start until a Construction Worker Travel and Accommodation Plan, to the extent applicable to that part, is developed in detail in substantial accordance with the essay plan included at Annex B 10 of this EMP, been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.</p> <p>The Construction Worker Travel Plan will set out (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Details of the anticipated number of workers required in each month across the construction phase by skill level.</li> <li>• Objectives for accommodation and travel plans for the workforce, considering sustainability, proximity, quality, standard and impacts on local community and tourism industry.</li> <li>• Procedures and actions to be implemented in order to maximise the potential sustainability of travel and accommodation for the workforce and maximise the benefits to the local economy whilst minimising impacts on local communities.</li> <li>• Proposed monitoring and reporting arrangements.</li> <li>• Details of stakeholder and community liaison to be carried out.</li> </ul> <p>The relevant part of the Project) must be implemented in accordance with the approved plan for that part.</p>	PC	EMP	Approval of the Construction Worker Travel and Accommodation Plan following stakeholder consultation (as set out in Chapter 1)	D	
D-GEN-10	Environmental Statement (Application Document 3.2) and Transport Assessment (Application Document 3.7)	To ensure appropriate measures are implemented during construction so as to minimise impacts to the environment or local communities, businesses and road users from construction traffic.	<p>No part of the Project can start until a Construction Traffic Management Plan, to the extent applicable to that part, is developed in detail in substantial accordance with the essay plan included at Annex B 13 of this EMP, been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.</p> <p>The Construction Traffic Management Plan will set out (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Requirements for temporary alternative access to residential areas, community facilities and businesses</li> <li>• Details of proposed traffic management measures, including phasing plans, route restrictions and speed limits.</li> <li>• Details of planned carriageway and local road closures, including proposed stakeholder and community engagement protocols in advance of closures.</li> <li>• Details of proposed diversion routes, durations of use and proposals for encouraging compliance with designated diversion routes (with consideration for potential noise impacts).</li> <li>• Details of significant events and seasonal traffic and proposals for how these will be managed during the works.</li> <li>• A plan identifying the roads to be used for all deliveries of construction materials to site</li> <li>• Plan of the haul routes to be used.</li> <li>• Incident management details.</li> <li>• Proposals for capacity management.</li> </ul>	PC	EMP	Approval of the Construction Traffic Management Plan following stakeholder consultation (as set out in Chapter 1)	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<ul style="list-style-type: none"> <li>Details of proposed engagement with stakeholders, community groups and individual properties, facilities and businesses affected by the proposed traffic management and advice for the public regarding ways to raise complaints or request information.</li> <li>An organogram identifying the named Traffic Control Officer and their lines of reporting.</li> <li>Proposed monitoring and reporting arrangements.</li> </ul> <p>The CTMP will include (to the extent applicable to the relevant part of the Project), as a minimum, the following commitments during construction of the Project:</p> <ul style="list-style-type: none"> <li>Prior to any closure of the A66 the diversion routes shall be developed in consultation with the Local Highway Authority</li> <li>Specific mitigation measures to be developed for diversion routes, such as monitoring of usage of diversion routes, use of multiple diversion routes for different closures to reduce exposure of individual receptors.</li> <li>Traffic management measures shall be implemented during construction of the Project on all public roads and walking, cycling and horseriding paths materially affected by the works in the DCO.</li> <li>Temporary signs erected during the works will be consistent with the Traffic Signs Manual: Chapter 8. Traffic signs for roadworks and other temporary situations shall comply with the Traffic Signs Regulations and General Directions and will be located where they are clearly visible to road users and cause minimum disruption.</li> <li>Access to site by construction traffic (both deliveries, movements of materials around the site and staff accessing site) along residential roads will be prohibited unless there are clear reasons for their use. Where residential roads are to be utilised, the residents of properties directly adjacent to those roads shall be kept informed in advance of the timing of the works.</li> <li>Where deemed necessary, following consultation with the local highways authorities and the emergency services, speed detection cameras shall be provided at temporary traffic management schemes.</li> <li>Where deemed necessary, following consultation with the local highways authorities and the emergency services road safety audits in accordance with DMRB shall be carried out, and CCTV cameras shall be installed at agreed locations to monitor the traffic management schemes.</li> <li>Where traffic management is in place on the existing A66 for the purposes of construction of the Project, a vehicle recovery system shall be operated to minimise the impact of breakdowns or collisions on the flow of traffic.</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the approved plan for that part.</p>					
D-GEN-11	Chapter 2: The Project Chapter 12: Noise and Vibration (Application Document 3.2)	To minimise disturbance to neighbouring receptors	<p>The PC shall adhere to the following core working hours for the Project, except in case of emergency or in respect of 'additional working hours' (see below in respect of each).</p> <p>07:30 – 18:00 Monday to Friday 07:30 - 13:00 Saturday</p> <p>A period of one hour before and up to one hour after these core working hours may be used for start-up and close down of activities. This will include, but not be limited to, deliveries, movement to place of work, unloading, maintenance and general</p>	PC	EMP NVMP	Adherence to site hours	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>preparation works. These periods will not be considered an extension of core working hours.</p> <p>Except in the case of an emergency, for any work required to be undertaken outside of core working hours set out above (not including repairs or maintenance) an application under Section 61 of the Control of Pollution Act 1974 will be made to the relevant Local Authority prior to undertaking the works (unless otherwise agreed with the relevant Local Authority).</p> <p><u>Additional working hours</u></p> <p>The PC is able to undertake work within the existing highway boundary outside of the core working hours for reasons of safety or operational necessity. Activities outside core working hours that could give rise to disturbance will be kept to a reasonably practicable minimum.</p> <p>Repairs or maintenance of construction equipment that is required to be carried out outside of core working hours will normally be carried out on Saturday afternoons or Sundays between 09:00 and 17:00.</p> <p>In the case of work required in response to an emergency or which if not completed would be unsafe or harmful to the works, staff, public or local environment, the relevant Local Planning Authority will be informed as soon as reasonably practicable of the reasons for, and likely duration of, the works. This information will also be made available to the Project helpline and could include incidents such as where pouring concrete takes longer than planned due to equipment failure or where unexpectedly poor ground conditions, encountered whilst excavating, require immediate stabilisation.</p>					
D-GEN-12	n/a	To minimise disturbance to the school and ensure safety	All works to be undertaken within the grounds of Kirkby Thore School (specifically associated with the diversion of overhead power lines) shall be undertaken outside of school opening hours. The contractor shall liaise closely with the school regarding any required works.	PC	EMP	Implementation of the specified actions	C	
D-GEN-13	n/a	To minimise disturbance from the construction	The PC shall sign up to and adhere to the Considerate Constructors Scheme (CCS).	PC	CCS	Certification to CCS standard	C	
D-GEN-14	n/a	To minimise disruption of the local road network	National Highways (with respect to the Strategic Road Network) and the appropriate local highway authority (all other roads) shall be notified and engaged with regarding delivery of abnormal loads or those that require a police escort if these are to be delivered outside core working hours. The police, highway authorities, bridge and structure owners shall be notified in advance of abnormal loads as appropriate, and all required permissions obtained from the relevant authorities. The procedures for the movement of abnormal loads shall be set out in the CTMP.	PC	EMP CTMP	Approval from The Authority and/or local highway authorities as relevant to the roads in question	C	
D-GEN-15	n/a	To ensure appropriately qualified personnel	Suitably qualified and experienced personnel shall be appointed to supervise the main construction works. These will include professionally qualified environmental management staff, with relevant experience in the environmental disciplines included in this EMP. The roles (minimum requirements) are defined in Table 2-2 of this EMP.	PC	EMP	n/a	C	
D-GEN-16	n/a	To ensure access is available for emergency services	The requirements of the relevant fire authority shall be followed for the provision of all site access points. The accesses may vary over time and shall also be suitable for use by ambulances.	PC	EMP	Agreement with relevant fire authority	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
D-GEN-17	n/a	To prevent fire	All construction sites and associated accommodation and welfare facilities shall have in place appropriate plans and management controls to prevent fires.	PC	EMP	Agreement with relevant fire authority	C	
D-GEN-18	n/a	To ensure the construction works are resilient to extreme weather events	Appropriate measures shall be implemented to ensure the resilience of the proposed construction mitigation measures during extreme weather events, so far as reasonably practicable. A second iteration of this EMP developed in relation to a part of the Project shall identify all measures deemed necessary and appropriate to manage extreme weather events and would specifically cover training of personnel and prevention and monitoring arrangements. Method statements required in the REAC should also consider extreme weather events where risks have been identified.	PC	EMP	Approval of EMP	C	
D-GEN-19	n/a	To ensure worksite security	The second iteration EMP shall define the proposed approach to worksite security and trespass risk at each site and implement appropriate control measures in accordance with the approved EMP.	PC	EMP	Approval of EMP	C	
D-GEN-20	n/a	To ensure consistent approach to community liaison and implementation of EMP	The PC(s) shall (collectively) develop and implement a co-ordination plan, to ensure that the implementation of measures set out in this EMP is, where relevant, undertaken consistently across all construction locations and all schemes within the Project. This shall in particular, cover community liaison, emergency response, traffic management, site access, construction workforce, communication with other construction projects in the vicinity of the Project and liaison between adjacent construction areas.	PC	EMP	The Authority determination of the approach	C	
D-GEN-21	n/a	To establish the phasing of works	No part of the Project can start until a phasing plan has been developed, setting out the phasing of construction works across the Project, and specifying the timing of commencement of works for each scheme and expected duration.	PC	EMP	The Authority determination of the phasing plan	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
Air Quality								
D-AQ-01	Chapter 5: Air Quality (Application Document 3.2) Chapter 6: Biodiversity (Application Document 3.2) EMP Annex B4: Air Quality and Dust Management Plan (Application Document 2.7)	To manage dust, air pollution and exhaust emission during the construction works.	No part of the Project can start until an Air Quality and Dust Management Plan (AQDMP), to the extent applicable to that part, is developed in detail in substantial accordance with the essay plan included at Annex B4 of this EMP, has been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.  The AQDMP (to the extent applicable to the relevant part of the Project) will include details on the following in relation to construction of the Project: <ul style="list-style-type: none"> <li>• Methods complying with the principles of Best Practicable Means (BPM), as defined by Section 79 (9) of the Environmental Protection Act 1990 to be used to mitigate against dust nuisance caused by construction works.</li> <li>• Specific mitigation measures for construction activities which have the potential to cause emissions to the air including demolition, use of diesel-powered plant and equipment, earthworks and materials storage and vehicle movements.</li> <li>• Such measures shall be based upon industry good practice, including the measures listed in the Institute of Air Quality Management's (IAQM) Guidance on the Assessment of Dust from Demolition and Construction.</li> <li>• Details of monitoring and reporting to be undertaken (including regular visual inspections for dust generation).</li> </ul>	PC	EMP AQDMP	Approval of the AQDMP following stakeholder consultation (as set out in Chapter 1)	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>The AQDMP will include (to the extent applicable to the relevant part of the Project), as a minimum, the following commitments during construction of the Project:</p> <ul style="list-style-type: none"> <li>Ensuring vehicles entering and leaving sites are covered to prevent escape of materials during transport.</li> <li>Dampening down of dust generating activities and materials, including site roads, during dry weather or covering loads transported offsite.</li> <li>Road sweeping to be carried out on access roads and local roads to remove any material tracked out of the site.</li> <li>Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph on un-surfaced haul roads and work areas. These speed limits may be increased provided suitable additional control measures are identified in the AQDMP and implemented.</li> <li>All construction plant to use fuel equivalent to ultra-low sulphur diesel (ULSD).</li> </ul> <p>The AQDMP will set out further good practice standard mitigation measures that shall be employed at sensitive locations during construction (including designated sites and ancient woodland, to be agreed with the Local Authority in the AQDMP), which could include:</p> <ul style="list-style-type: none"> <li>Display the name and contact details of person(s) accountable for air quality and dust issues on the construction site boundaries.</li> <li>Record any exceptional incidents that cause dust and/ or air emissions, either onsite or offsite, and the action taken to resolve the situation in the log book.</li> <li>Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the approved AQDMP plan for that part.</p>					
D-AQ-02	Chapter 5: Air Quality (Application Document 3.2)	To limit the mobilisation of dust by construction vehicles.	Where reasonably practicable, temporary haul roads implemented during construction of the Project shall be hard surfaced to reduce dust generation. When the temporary haul roads are finalised in detailed design, proximity to sensitive receptors as defined in the approved AQDMP will be considered. Should there be a high risk of dust, as determined in the AQDMP, affecting these receptors, the road shall be hard surfaced.	PC	EMP AQDMP	Detailed design assessment results and risk assessment	D	
MW-AQ-01	Chapter 5: Air Quality (Application Document 3.2)  EMP Annex B4: AQDMP (Application Document 2.7)	To manage dust, air pollution and exhaust emission during the construction works.	Relevant information from the approved AQDMP must be clearly displayed on site.	PC	EMP AQDMP	Site inspection log book completed	C	
MW-AQ-02	Chapter 5: Air Quality (Application Document 3.2)	To reduce total surface area of exposed earth and material that could be mobilised to dust by weather and	Where it is reasonably necessary for areas of land within the Order limits to be temporarily stripped of vegetation for the purposes of construction of the Project, those areas shall be re-surfaced or re-planted as soon as reasonably practicable after the completion of the vegetation stripping to minimise dust generation.	PC	EMP AQDMP Soil Management Plan	Site inspections undertaken Site inspection log book completed	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
		construction movements.						
MW-AQ-03	Chapter 5: Air Quality (Application Document 3.2)	To reduce the total surface area of exposed earth and material that could be mobilised to dust by weather and construction movements.	Stockpiled materials across the Project with the potential to generate dust will be managed during construction of the Project by rolling, covering and/or revegetating as appropriate, in accordance with the approved Soil Management Plan (Ref D-GS-02).	PC	EMP AQDMP Soil Management Plan	No open stockpiles of potentially dust generating material.		
MW-AQ-04	Chapter 6: Biodiversity (Application Document 3.2) Chapter 5: Air Quality (Application Document 3.2)	To minimise impacts on receptors identified within 200m of the Order Limits.	Daily on-site visual inspections (within the Order Limits) shall be undertaken during construction of the Project (with an increased frequency during dry weather), where receptors (ecological or human) are within 200 metres of the Order limits, to monitor dust and where appropriate, implement measures to reduce soiling from dust as set out in the approved AQDMP. Inspections will be undertaken by the relevant person with correct competencies as defined in the approved Soil Management Plan (Ref D-GS-02). Inspection results must be recorded in an inspection log, and the log made available to the relevant planning authority if requested.	PC	EMP AQDMP Soil Management Plan	Site inspections undertaken Site inspection log book	C	
MW-AQ-05	Chapter 5: Air Quality (Application Document 3.2)	To manage dust, air pollution and exhaust emission during the construction works. To track which activities and events are generating the most dust and actively manage the implementation of any additional mitigation requirements.	At sensitive locations (to be determined, following consultation with the Local Authority, in the AQDMP), monitoring will be carried out to assess the effectiveness of measures to prevent dust and air pollutant emissions during construction of the Project. Monitoring should be continued until the site is deemed to be low risk (i.e. higher risk activities have ceased for example, demolition activities, earthworks, construction of structures, storage of stockpiles, use of unpaved haul roads etc).	PC	EMP AQDMP	Site inspections undertaken Site inspection log book	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
Biodiversity								
D-BD-01	EMP Annex B1: Outline Landscape and Ecological Management Plan (Application Document 2.7) Chapter 6: Biodiversity (Application Document 3.2)	To manage and deliver the design and mitigation objectives specified in the ES (Application Document 3.2)	<p>No part of the Project can start until a Landscape and Ecological Management Plan (LEMP), to the extent applicable to that part, is developed in detail in substantial accordance with the outline plan included at Annex B1 of this EMP, has been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.</p> <p>The Landscape and Ecological Management Plan (LEMP) will provide a framework for achieving the design objectives and mitigation measures specified in the ES and illustrated in the Environmental Mitigation Maps (Application Document 2.8).</p> <p>The LEMP shall identify what the landscape and ecology mitigation measures are, how they will be implemented, monitored, maintained and managed; and who will be responsible for ensuring they achieve their stated functions. This shall be informed by information contained within the ES Chapter 6: Biodiversity and</p>	PC	LEMP	Approval of the LEMP following stakeholder consultation (as set out in Chapter 1)	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
	Chapter 10: Landscape and Visual (Application Document 3.2)		<p>subsequent assessment undertaken through detailed design as set out in REAC D-BD-02.</p> <p>Monitoring requirements are set out in REAC M-BD-01 and M-BD-03.</p> <p>As a minimum the LEMP (to the extent applicable to the relevant part of the Project) will include the following measures to be implemented:</p> <ul style="list-style-type: none"> <li>Planting shall be native and locally sourced.</li> <li>Specifications shall be provided for long term management and monitoring to ensure the proposed habitats achieve their intended objective, including corrective actions to be taken if monitoring identifies failures. This includes a monitoring programme for habitats for up to a 30 year period and for species for up to a 5 year period post construction.</li> <li>Losses of connective habitat (i.e. linear features such as hedgerows, highway verges and watercourses) along verges shall be mitigated by early planting of vegetative strips adjacent to the verges (where land is not required for construction and habitats can be established without risk of damage or contamination from construction works) to maintain vegetative community presence of semi-natural habitats.</li> <li>Use of green hay or heather brush from existing roadside verges of value, or adjacent local nature sites may also be employed when creating new habitats in order to ensure plants of local provenance and seeds adapted to local conditions are used.</li> <li>A requirement to monitor and adapt measures included within the LEMP that could be vulnerable to climate change (e.g. changes to timing of breeding seasons as a result of climate change)</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the approved LEMP for that part.</p>					
D-BD-02	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on designated sites, and protected species	<p>No part of the Project can start until a further set of surveys for that part, to the extent applicable to that part, has been undertaken to update the environmental baseline, inform requirements for European Protected Species Licences (EPSL) and inform the appropriate method statements for that part of the Project. As a minimum this should include (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>Schedule 9 (to the Wildlife and Countryside Act 1981) listed invasive plant species surveys, both terrestrial and aquatic, undertaken at the appropriate time of year to inform any requirement to avoid or remove invasive species.</li> <li>Badger activity and badger sett surveys within the Order Limits of the Project, to be undertaken at an optimal time of year (in the early part of the year before vegetation growth obscures signs of activity)</li> <li>Reptile surveys prior to construction commencing to confirm presence/absence within the habitats identified as potentially supporting reptile species, to inform mitigation required to prevent injury or harm</li> <li>For both shingle banks and riparian sand, it should be noted that these can move significantly during high water flow events and therefore surveys will be undertaken to ensure none are present when construction is due to begin. In the unlikely event that shingle banks are identified during pre-construction surveys and potential impacts are considered likely (i.e. where in-channel works are required), further surveys would be required to</li> </ul>	PC	EMP	Implementation of the LEMP	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			establish the presence of invertebrates of importance using the shingle. Subsequently.					
D-BD-03	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on designated sites, and protected species	Temporary haul roads and site compound/material storage areas required during construction of the Project will be located outside of ecologically sensitive sites as shown on ES Figure 6.1 Statutory and Non-Statutory Designated Sites (Application Document 3.3), areas of Priority habitats as identified in Chapter 6: Biodiversity (Application Document 3.2) and as shown on ES Figure 6.3 Phase 1 Habitat and Terrestrial Invertebrate Survey (Application Document 3.3), and any specific habitats and trees identified as being retained in the Project Design Principles (Application Document 5.11).	PC	EMP Project Design Principles	Construction layout design Implementation of approved second iteration EMP	D	
D-BD-04	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on riparian habitats and aquatic species through detailed design	New watercourse crossings of the SAC (Trout Beck) shall be open span and the length of the crossing minimised to reduced impacts on the aquatic environment and allow natural river processes to continue, unless otherwise agreed with Natural England and the Environment Agency. In addition to the Trout Beck viaduct, the majority (five out of six) of new watercourse crossings of functionally linked watercourses in the Appleby to Brough scheme shall also be open span, unless otherwise agreed with Natural England and the Environment Agency. These are specified in the ES Chapter 6: Biodiversity.  Abutments must be set well back from the river's edge and wherever reasonably practicable a 5 metre undisturbed buffer zone between the river's edge and the abutment shall be maintained. In watercourses that are functionally linked (for fish qualifying fish species) to the SAC, this will be extended to a minimum of 8 metres. Where culverts are used, they shall be bottomless (or sunk/inverted 30cm below natural bed level to allow natural substrate to be deposited) and aim to maintain natural bank features.	PC	Detailed design	The Authority determination of detailed design	D	
D-BD-05	Chapter 6: Biodiversity (Application Document 3.2)	To ensure there is no net loss of habitats and to minimise the impact on protected species.	No part of the Project can start until an Environmental Mitigation Scheme (to the extent applicable to that part) is developed in detail, in substantial accordance with the objectives set out in Chapter 6: Biodiversity (Application Document 3.2), has been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.  The Environmental Mitigation Scheme shall incorporate (to the extent applicable to the relevant part of the Project), as a minimum, the following measures, as well as conforming to all measures set out in the Project Design Principles document (Application Document 5.11): <ul style="list-style-type: none"> <li>• Use of mitigation hierarchy (avoid impacts in the first instance, mitigate impacts that are unavoidable, compensate for impacts that cannot be mitigated) to minimise impacts to habitats of value, as shown on ES Figure 6.1: Statutory and Non-Statutory Designated Sites and ES Figure 6.2: Ancient Woodland, Ancient Tree Inventory and Habitats of Priority Importance (Application Document 3.3).</li> <li>• Consideration of the requirements set out in D-LV-01</li> <li>• Replanting of lost habitats to ensure, that where not replaced directly, the type and quality of the habitats replaced is greater than that lost in terms of no net loss and positive gains.</li> <li>• Habitats shall be replaced on at least a like for like basis with some habitats including waterbodies and watercourses replaced with two for each one lost. The ratios required for all habitats in order to attain no net loss are provided in Table 6.20 of Chapter 6: Biodiversity (Application Document 3.2).</li> </ul>	PC	Detailed design LEMP Project Design Principles	The Authority determination of detailed environmental mitigation design following stakeholder consultation (as set out in Chapter 1)	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<ul style="list-style-type: none"> <li>• Integrated landscape design will incorporate necessary replacement habitats as defined above and for protected species mitigation (as specified in Chapter 6: Biodiversity (Application Document 3.2)).</li> <li>• Both temporary and permanent suitable habitat loss for protected/notable species shall be mitigated by habitat replacement and enhancement measures as identified as being required in the ES Chapter 6: Biodiversity (Application Document 3.2) and outlined in the Environmental Mitigation Maps (Application Document 2.7). These measures include the bird mitigation areas and the reptile receptor sites as illustrated in the Environmental Mitigation Maps (Application Document 2.7).</li> <li>• Habitat fragmentation will also be mitigated by compensational replanting schemes along the route which will ensure suitable commuting and foraging habitats for protected and notable species remain connected to one another throughout the route as identified in the ES Chapter 6: Biodiversity (Application Document 3.2) and outlined in the Environmental Mitigation Maps (Application Document 2.7). This includes all woodland connective planting required for red squirrel, bats, barn owls and other mammal crossing.</li> <li>• Badger fencing shall be used around sections of new and existing carriageways where high badger activity has been identified and/or badger territories are likely to be significantly impacted and severed as a result of new road alignments to prevent road mortality as identified as part of the assessment completed to inform the ES.</li> <li>• Otter ledges to allow for continued passage of otter alongside watercourses shall be accompanied by otter-proof fencing to ensure animals are funnelled into safe crossing points and reduce the risk of mortality on the carriageway.</li> <li>• Planting design shall consider the locations of key foraging habitats, any retained bat roosts, established flight lines and any roost structures/bat boxes that are provided as mitigation for roost loss. Habitats will be replaced and improved for bats.</li> <li>• Established bat flight lines will be retained in their original location where reasonably practicable through design, in conjunction with planting schemes to direct and encourage bats to maintain the crossing location. Where replacement of established flight paths is required this will be via either greening of over bridges or installation of wildlife underpasses/culverts. The locations of the required greening of bridges include Cross Street overbridge, Fell Lane overbridge, Sleastonhow Lane overbridge, Rogerhead Farm overbridge, Warcop overbridge, East Bowes accommodation access bridge, Cross Lanes junction overbridge and Collier Lane, West Layton. The green bridges will incorporate a minimum 1m wide strip of wooded scrub along one road verge with connective planting to the north and south approaches of the bridge (as outlined in ES Chapter 6: Biodiversity (Application Document 3.2) with detail to be confirmed in consultation with relevant local authorities where the structure is to be adopted by local highways authority. Additionally, wattle screening will be provided as a temporary measure whilst new planting matures.</li> <li>• Suitable barn owl foraging habitat and any loss of confirmed nest sites shall be mitigated for through the provision of nest boxes and habitat creation in areas which have been identified as being suitable through survey work.</li> </ul>					

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<ul style="list-style-type: none"> <li>All balancing ponds will be surrounded by either wetland planting, species-rich grassland or a scrub/grassland mosaic to maximise opportunities for a range of species.</li> <li>Mitigation for barn owl shall include construction of cuttings or mounds to increase the flight height of barn owls at areas identified as likely crossing points. These measures will minimise the risk of barn owl mortality through collisions with vehicles.</li> <li>Existing fallen or standing deadwood will be retained where reasonably practicable and where this is not the case, it will be translocated to a suitable location within the Order Limits (where it will not be further disturbed by the works) where reasonably practicable for the purpose of enhancing the existing habitat for invertebrates.</li> <li>Translocation of hedgerow habitats will be employed alongside planting schemes, to retain local diversity and to provide early establishment of vegetation to promote connectivity of habitats.</li> <li>Translocation of macrophyte beds of conservation value that will be lost shall be investigated and assessed on a case-by-case basis, as will the potential to reduce riparian shading (where appropriate) to promote natural macrophyte growth to mitigate for the loss of macrophytes at new watercourse crossings.</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the approved scheme for that part.</p>					
D-BD-06	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species and maximise opportunities for a range of species To minimise impacts on watercourses and water dependant habitats	<p>The detailed design shall incorporate the following commitments (as specified in Chapter 6: Biodiversity (Application Document 3.2) and illustrated on the Environmental Mitigation Maps (Application Document 2.8)):</p> <ul style="list-style-type: none"> <li>Where reasonably practicable, and not in conflict with the functional design, balancing ponds will be designed as a biodiversity resource with draw-down zones, shallow sides and shelving to maximise opportunities for aquatic wildlife.</li> <li>Underpasses and crossing point installations for a range of mammal species shall be incorporated into the design at appropriate locations, taking into consideration their indicative locations as illustrated on the Environmental Mitigation Maps (Application Document 2.8).</li> <li>Inclusion of crossing points suitable for badger along new road alignments along with appropriate badger fencing at appropriate locations. These crossing points may include culverts with terrestrial mammal ledges, badger underpasses, overpasses and tunnels.</li> <li>Drainage design will ensure road run-off is channelled into a suitable system to protect retained and newly created habitats.</li> <li>Any works that disturb drainage features shall include necessary mitigation or reinstatement to ensure the features retain their correct working function.</li> </ul>	PC	Detailed Design Project Design Principles	The Authority determination of detailed design	D	
D-BD-07	Chapter 6: Biodiversity (Application Document 3.2)	To avoid and minimise the spread of invasive species	<p>No part of the Project can start until an Invasive Non-Native Species Management Plan (INNS MP) (to the extent applicable to that part), is developed in detail in substantial accordance with the essay plan included at Annex B15 of this EMP and has been approved in relation to that part.</p> <p>The INNS MP will include details on the measures to be implemented during the works to prevent the spread of INNS. The plan will include (to the extent applicable to the relevant part of the Project), as a minimum, the following measures:</p>	PC ECoW	INNS MP	Approval of INNS MP following stakeholder consultation (as set out in Chapter 1)	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<ul style="list-style-type: none"> <li>Surveys to identify invasive and non-native species will be undertaken to confirm specific locations where INNS are present</li> <li>Measures shall be specified to avoid the spread of invasive and non-native plants, such as Himalayan balsam and of species, such as Signal crayfish</li> <li>Strict biosecurity protocols shall be followed during construction and maintenance of assets to mitigate the risks of introducing signal crayfish and other aquatic Invasive Non-native Species and pathogens to watercourses.</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the approved Plan for that part.</p>					
D-BD-08	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	<p>Where part of the Project has been identified as potentially impacting on Protected Species, either in the ES Chapter 6: Biodiversity or any assessment undertaken as part of D-BD-02 the relevant Natural England Protected Species Licence shall be obtained prior to any works commencing on that part of the Project. These species shall include at minimum (subject to the results of the pre-construction surveys):</p> <ul style="list-style-type: none"> <li>Badger</li> <li>Otter</li> <li>Bats</li> <li>Barn owl</li> </ul> <p>That part of the Project shall be undertaken following the requirements set out in the obtained relevant Natural England Protected Species Licence) for that part.</p>	PC	EMP	Obtaining of relevant Natural England Protected Species Licence	D C	
MW-BD-01	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	<p>No part of the Project is to start until for that part, final preconstruction survey work (to the extent applicable to that part) has been carried out to establish whether European or nationally protected species are present on any of the land affected or likely to be affected by any part of the Project (as set out in B-DB-02).</p> <p>In the event that a European or other protected species or nesting birds not previously identified in the environmental statement, or through pre-construction surveys, are found at any time when carrying out a part of the Project, the PC must cease construction of any works reasonably near to their location (distance to be advised by the ECoW), or any works within 10m of nesting birds, and report it as soon as practicable to the Ecological Clerk of Works.</p> <p>The works that were required to cease in accordance with the above must not resume until either— (a) the nesting birds, if relevant, have fledged and the nest is no longer in use; or (b) a suitably qualified and experienced ecologist, holding the relevant and appropriate licence for the species in question, determines that the relevant works do not require a protected species licence, or (c) any necessary licences for the protection and mitigation of the species have been obtained from Natural England</p>	PC ECoW	EMP	Survey reports Detailed construction mitigation plans Licence applications	C	
MW-BD-02	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on aquatic species	<p>Dewatering of the entire channel of any watercourse will be avoided where reasonably practicable.</p> <p>If dewatering cannot be avoided:</p> <ul style="list-style-type: none"> <li>All fish (including juvenile lamprey that live in marginal sediments) will be translocated prior to dewatering works.</li> <li>Prior to dewatering or intrusive in-channel works, all crayfish present shall be translocated by a suitably licenced white-clawed crayfish surveyor.</li> </ul> <p>Methods and translocation sites shall be confirmed following consultation with Natural England and the Environment Agency.</p>	PC ECoW	EMP	Construction layout design Approved EMP Translocation plans	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
MW-BD-03	Chapter 6: Biodiversity (Application Document 3.2))	To minimise impacts on riparian habitats and aquatic species	<p>No works comprised in the Project located in or near a watercourse can start until a Method Statement for working in and near watercourses, is developed in detail in substantial accordance with the essay plan included at Annex C2 of this EMP and has been approved in relation to that part.</p> <p>The Method Statement shall include (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Details of the watercourses present and key sensitivities associated with those watercourses</li> <li>• Construction methodology for all works proposed in, over, adjacent to or in the floodplain of the watercourses</li> <li>• Control measures to be implemented to ensure protection of watercourses</li> </ul> <p>The Method Statement shall include, as a minimum, the following commitments:</p> <ul style="list-style-type: none"> <li>• Avoidance of the use of plant in-channel where reasonably practicable, creation of dry working areas and the control of sediment (for example through the use of silt fencing, filtration systems and settling ponds).</li> <li>• Compaction (or other activities resulting in Peak Particle Velocity of greater than 13mm/s within river substrates) within 5m of watercourses supporting gravel spawning species (salmon, trout, lamprey sp., bullhead) shall not take place until consultation on the proposed activities has taken place with the Environment Agency and Natural England</li> <li>• Impacts on fish shall be minimised through sensitive timing of works that give rise to significant noise and vibration, and best practice construction practices (such as low impact piling methodologies and fish translocation prior to works. This is of particular relevance to migratory aquatic species (Atlantic salmon, sea lamprey and river lamprey).</li> <li>• Night time working in close proximity to watercourses shall be avoided where reasonably practicable. Where it cannot be avoided, measures to ensure protection of key species such as white clawed crayfish (e.g. use of coffer dams, translocation and sensitive site lighting) shall be developed prior to any works commencing and incorporated to the applicable method statement for that part of the Project.</li> </ul> <p>The relevant works must be carried out in accordance with the approved Method Statement.</p>	PC ECoW	EMP	Approval of method statement following stakeholder consultation (as set out in Chapter 1)	C	
MW-BD-04	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on biodiversity	All trenches and work excavations shall either be backfilled, covered or fenced off overnight, to prevent animals falling in, or earth ramp(s)/egress points shall be included overnight in respect of those trenches or work excavations to allow a means of escape for any animals that have fallen in.	PC ECoW	EMP	Daily site audits	C	
MW-BD-05	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	The presence of important ecological features has implications for the timing of construction activities. The avoidance of periods of particular sensitivity for protected species such as nesting birds, fish, reptiles and amphibians as specified in Chapter 6: Biodiversity (Application Document 3.2) shall be applied where reasonably practicable.	PC ECoW	LEMP	Approval of the EMP	C	
MW-BD-06	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	Where the Project results in losses of identified bat roosts (as shown on ES Figure 6.8 Preliminary Bat Roost Assessment – Structures and Trees, Application Document 3.3), these shall be compensated for in a form appropriate to the species of bat and type of roost in accordance with the Bat Mitigation Guidelines <sup>2</sup> and as part of the mitigation scheme approved by Natural England through the EPSL	PC ECoW	EMP	Licence conditions The Authority determination of detailed design	C	

<sup>2</sup> Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines* English Nature, Peterborough.

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>process. Replacement roosts will be installed/constructed in advance of the roost destruction/damage occurring.</p> <p>All tree bat roosts confirmed as being lost will be replaced with either bat boxes (at a minimum ratio of 2:1) or by retention of the tree roost cavity on adjacent trees within similar habitats.</p>					
MW-BD-07	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	<p>In areas of proposed vegetation clearance, any trees containing cavities/Potential Roosting Features (as shown on ES Figure 6.8 Preliminary Bat Roost Assessment – Structures and Trees, Application Document 3.3 in combination with any subsequent survey data obtained through survey undertaken as part of D-BD-02) that have no evidence of use by bats (and therefore do not fall within the requirements of mitigation through the EPSL process), shall be retained and attached to nearby trees and/or artificial structures to provide a ‘temporal bridging’ of tree roost opportunities (i.e. the roost feature in the lost tree will be retained close to the area of its location to allow its continued use).</p>	PC ECoW	EMP	Daily site audits	C	
MW-BD-08	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	<p>Assessment of impact on Core Sustenance Zones (CSZ) for bats in relation to a part of the Project will be undertaken based on the detailed design prior to start of works on that part of the Project.</p> <p>Where the design is assessed as resulting in the loss of key foraging habitats affecting a significant proportion (as assessed by appropriate specialists) of the habitat type within the CSZ, as shown on ES Figure 6.10 Core Sustenance Zones of Roosts Identified from Survey, Application Document 3.3), measures to minimise impacts on bats will be implemented.</p> <p>Measures to be implemented will be directed by the ECoW and shall include:</p> <ul style="list-style-type: none"> <li>• Phased habitat removal to maintain habitat connectivity shall be implemented where reasonably practical</li> <li>• Minimising the length of physical break and duration of the flight path severance.</li> <li>• Minimising light and noise pollution.</li> <li>• Erecting temporary alternative flight routes (wattle screens and/or pot grown plants to create temporary hedgerows within severed flight routes).</li> </ul>	PC ECoW	EMP	Implementation of EMP measures	C	
MW-BD-09	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on biodiversity	<p>During construction of a part of the Project, any habitat removal for that part will be undertaken on a staged basis, where reasonably practicable, to ensure local habitat resources are not substantially reduced concurrently.</p>	PC ECoW	EMP	Approved EMP Site clearance plans	C	
MW-BD-10	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	<p>The temporary or permanent removal of known otter holts and resting sites, if required, (as shown on Figure 6.16: Otter and Water Vole Field Survey, Application Document 3.3) shall be undertaken sensitively in accordance with the method statements approved under the EPSL process and supervised by suitability qualified ecologist to reduce the risk of injury or mortality.</p> <p>Installation of two artificial holts, located within the Appleby to Brough scheme, shall be managed as part of the EPSL process if required or through the implementation of essential mitigation where an EPSL is not required.</p>	PC ECoW	EMP	Licence requirements Implementation of mitigation	C	
MW-BD-11	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	<p>Where temporary or permanent closure of badger setts is required as a result of the construction of the Project, such works will be carried out under a strict method statement. Where the Project results in the loss or disturbance to a main sett or annexe sett, replacement setts will be provided (for each sett impacted) and the</p>	PC ECoW	EMP LEMP	Licence requirements Implementation of mitigation	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			existing sett closed. A licence will be obtained from Natural England to facilitate these works.					
MW-BD-12	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	Noise barriers and visual screens shall be used where reasonably practicable during construction to limit disturbance to wintering and breeding birds at locations to be advised by the ECoW (based on the findings of the ES Appendix 6.13 Breeding Birds and ES Appendix 6.14 Wintering Bird in combination with survey data from surveys undertaken as part of D-BD-02).	PC ECoW EM	EMP	Implementation of mitigation	C	
MW-BD-13	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	Where reasonably practicable construction activities near to known barn owl breeding sites shall be avoided between March and August (as shown on ES Figure 6.15 Barn Owl Territory). Where structural demolition and tree clearance of known barn owl roosts will be undertaken, a method statement shall be produced by the PC through consultation with a suitably licenced ecologist and agreed with Natural England prior to works commencing specifying the timing of the works, specific methods to be used and mitigation requirements. Closure of Occupied Breeding Sites for barn owl must be done by a suitably licenced ecologist.	PC ECoW	EMP	Construction programme, site audits Approved method statement	C	
MW-BD-14	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	No part of the Project can start until a Reptile Mitigation Strategy (to the extent applicable to that part) has been prepared, informed by pre-construction reptile surveys as set out in D-BD-02, taking into consideration locations for further surveys required as shown on Figure 6.5: Reptile Habitat Suitability Survey (Application Document 3.3) along with all habitats that have been identified as suitable for reptiles. Habitat connectivity features for reptiles and amphibians shall be provided throughout construction, in accordance with the Reptile Mitigation Strategy. Where islanded populations are likely (as confirmed by pre-construction surveys), reptile translocation may be required and shall be undertaken under the instruction of the ECoW. The relevant part of the Project must be carried out in accordance with the strategy for that part.	PC ECoW	LEMP	The Authority determination of Environmental Masterplan Reptile Mitigation Strategy	C	
MW-BD-15	Chapter 6: Biodiversity (Application Document 3.2) Statement to Inform Appropriate Assessment (Application Document 3.6)	To avoid impacts on the River Eden SAC and functionally linked habitats	No part of the Project that involves works in or near a Special Area of Conservation can start until a Method Statement for working in and near Special Areas of Conservation, (to the extent applicable to that part), is developed in detail in substantial accordance with the essay plan included at Annex C1 of this EMP and has been approved in relation to that part. The Method Statement shall include (to the extent applicable to the relevant part of the Project): <ul style="list-style-type: none"> <li>• Details of the SAC and key sensitivities associated with it</li> <li>• Construction methodology for all works proposed in, over, adjacent to or in the floodplain of the SAC (and functionally linked habitats)</li> <li>• Control measures to be implemented to ensure protection of the SAC</li> </ul> The relevant part of the Project must be carried out in accordance with the approved Method Statement for that part.	PC ECoW	EMP	Approval of method statement following stakeholder consultation (as set out in Chapter 1)	C	
MW-BD-16	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on habitats	Prior to the start of any works within 5 metres (unless otherwise specified) of any retained habitats within the Order limits fencing and signage shall be installed in order to ensure no accidental encroachment by works personnel or equipment on those habitats. Habitat protection fencing and signage shall be inspected on a six-monthly basis throughout the construction phase. The visits will monitor the application of appropriate protective measures for areas of retained habitat, and off-site habitat, throughout the duration of the construction phase. Where appropriate measures are not being taken, corrective action will be taken. Where construction	PC ECoW	EMP	Approved EMP Site inspections	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			works are adjacent to any designated site (including SACs, SSSIs, and county level designations) inspections shall be carried out more frequently.					
MW-BD-17	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on biodiversity	<p>No part of the Project can start until the construction lighting strategy (to the extent applicable to that part) has been developed and approved by the EcoW for the relevant part of the Project. This strategy shall set out ecologically sensitive lighting regimes including the requirement to ensure all artificial light is directed down and away from vegetation where reasonably practicable, and shall include restrictions on artificial lighting over the following (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Main badger setts and well used paths leading from it (determined in pre-construction survey)</li> <li>• On watercourses and associated riparian corridors</li> <li>• Barn owl foraging habitat</li> <li>• Bat commuting corridors and foraging habitats</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the strategy for that part.</p>	PC ECoW	EMP	Approved EMP Construction lighting design Site inspections	C	
MW-BD-18	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	Excavation works or movement of heavy machinery must not be carried out, or done within 30m of active badger setts as determined following the pre-construction survey set out in D-BD-02. Where this is not possible, consultation with Natural England is required to determine whether suitable measures can be included in a Method Statement and overseen by the EcoW to avoid potential disturbance impacts to an active badger sett (e.g. use of handheld tools etc). Where potential disturbance on an active badger sett cannot be avoided, works can only be undertaken under a Natural England mitigation licence obtained by the Principal Contractor and overseen by the EcoW.	PC ECoW	EMP	Approved EMP Site inspections	C	
MW-BD-19	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	<p>Protection zones within which construction activities cannot be carried out around identified bat roosts that are to be retained within the Order limits (as identified in ES Figures 6.7 to 6.9, Application Document 3.3) will be implemented on the following basis as instructed by the EcoW or a suitably qualified ecologist:</p> <ul style="list-style-type: none"> <li>• For light works using handheld tools, 10m.</li> <li>• For works considered to generate significant noise and vibration, 30 metres.</li> <li>• During the maternity period, between May and August inclusive - 30 metres in relation to any construction activity.</li> </ul> <p>No construction works to structures such as buildings or bridges with hibernation potential, can be carried out within the hibernation period from November to the end of February inclusive, as these times of year are particularly sensitive times for bats, where they may be at an increased risk of suffering adverse effects from disturbance.</p> <p>Where monitoring (defined in M-BD-01) highlights an issue with abandonment of a roost potentially due to disturbance, the mitigation in place shall be reviewed with the EcoW and strengthened where practicable to prevent further disturbance (e.g. through greater protection zones or controls on working hours).</p>	PC ECoW	EMP	Approved EMP Construction programme	C	
MW-BD-20	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	Any water storage areas used for the purposes of the construction of the Project, for example, water butts, troughs, tanks, shall, where reasonably practicable, be covered when not in use (and especially overnight) to prevent wildlife from drowning	PC ECoW	EMP	Approved EMP Site inspections	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
MW-BD-21	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	Any use of rodenticide shall be minimised so as to prevent deaths of barn owls through eating poisoned rodents, in accordance with Barn Owl Trust guidance <sup>3</sup> in relation to the safe use of rodenticides.	PC ECoW	EMP	Approved EMP Site inspections	C	
MW-BD-22	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	The PC and relevant responsible person(s) such as the ECoW shall give training and Toolbox Talks (regular short training sessions for all site staff as part of inductions and an ongoing programme), to inform all site personnel of the ecological constraints on site related to both flora and fauna. This will be specific to the protected species of flora and fauna present at the area of works and will outline: <ul style="list-style-type: none"> <li>The status of protected flora and fauna on site (such as population, density, locations)</li> <li>The appropriate methods for working, such as timing of works and any management actions prior to works vegetation clearance or stripping</li> </ul>	PC ECoW	EMP	Approved EMP Training plan and records	C	
MW-BD-23	Chapter 6: Biodiversity (Application Document 3.2)	To avoid impact on ancient and veteran woodland	Any construction activities must be at least 15m away from the boundary of the ancient woodland habitat at Rokeby (as shown on ES Figure 6.2 Ancient Woodland and Ancient Tree Inventory and Habitats of Priority Importance), avoiding the potential for impacts to trees within the ancient woodland habitat, or for loss of, or damage to ground flora. Should any post and wire permanent fencing be required for the purposes of demarking permanent boundaries, fence posts are to be hand dug to avoid heavy machinery being used.  If machinery is required within 15m of the boundary of the ancient woodland habitat at Rokeby, low pressure vehicles and vehicle mats/pads are to be used to avoid ground compaction	PC	EMP	Approved EMP Daily site audits	C	
M-BD-01	Chapter 6: Biodiversity (Application Document 3.2)	To identify effects of disturbance and inform mitigation actions to be implemented	During construction of the Project, monitoring shall be carried out by the ECoW to monitor effects of disturbance at identified key locations for protected species: <ul style="list-style-type: none"> <li>Reptile surveys and ongoing monitoring during construction to facilitate translocation as confirmed by pre-construction surveys. The locations for further surveys required are shown on Figure 6.5: Reptile Habitat Suitability Survey (Application Document 3.3) along with all habitats that have been identified as suitable for reptiles.</li> <li>Roost activity surveys of maternity roosts at Eden View Cottages (Roost 11), Old Stone Barn (Roost 23), Streetside Farm (Roost 29) and Rokeby Grove (Roosts 30 to 32) (see ES Figure 6.11: Bat Roost Survey Map), comprising 2 roost activity surveys (emergence) per roost at least 4 weeks apart during the maternity period, mid-May to mid-August with an emphasis towards June and July. Minimum of three years post-construction. Where activity surveys show a lack/reduction in anticipated activity, survey effort should be increased to further understand the potential impacts of the construction works may be having on the roost structures.</li> <li>A monitoring programme will be developed to record evidence of regular use of the two newly created artificial otter holts and abandonment of the existing natal holt, located within the Appleby to Brough scheme. This natal holt will, depending on the specific impacts of the Project, need to be closed under licence by an ECoW. Surveys will include the use of a camera-trap and recording field signs. Monitoring shall be carried out three weeks a year for the first five years post-installation, deploying the camera traps for a week in spring, summer and autumn. With regards to the artificial otter</li> </ul>	PC	LEMP EMP	Monitoring reports Achievement of BNG targets Approved LEMP Approved EMP (third iteration)	O	

<sup>3</sup> Barn Owl Trust (2021) Barn Owl Hazards: rat poison

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>holts, these timings should be reviewed, should otter's be found to occupy either of the holts, in order to determine if monitoring should continue. Natural England should also be consulted.</p> <ul style="list-style-type: none"> <li>Construction works carried out in proximity to the River Eamont will be monitored by the ECoW for toad activity, especially during warm spring evenings. Mitigations such as cessation of works and deployment of temporary amphibian fencing and toad tunnels will be used to facilitate movement of toads across the site.</li> <li>During construction, monitoring of abandonment of closed setts and of badger activity around artificial setts will be carried out. The specific methods and requirements of such monitoring will be detailed within the relevant Natural England protected species licence, if required</li> <li>Further monitoring requirements may be defined by Natural England Protected Species Licences if obtained.</li> </ul>					
M-BD-02	Chapter 6: Biodiversity (Application Document 3.2)	To identify effectiveness of the habitat creation, early warnings of failure or deterioration, and any remedial actions that may be required.	<p>Botanical survey and / or invertebrate sampling shall be implemented to monitor extent and quality of habitats across the Project post construction and gauge successful establishment and ongoing management requirements of habitats. Monitoring shall be undertaken between April and September by an appropriately qualified ecologist. As a minimum, monitoring visits will be carried out in years 1, 2, 3, 5, 10, 15, 20, 25 and 30 following completion of the construction phase. These prescriptions are adaptive and, in the event remedial action is required to address habitat creation failures, additional visits may be required.</p> <p>Failure of the habitats to fulfil the appropriate criteria, or failure to show natural succession towards the targeted habitat type and condition (in the earlier years of establishment) will trigger remedial action to be taken.</p> <p>Specific monitoring requirements shall be specified in the LEMP and the EMP.</p>	PC National Highways	LEMP EMP	Monitoring reports Achievement of BNG targets Approved LEMP Approved EMP (third iteration)	O	
M-BD-03	Chapter 6: Biodiversity (Application Document 3.2)	To assess how successful mitigation measures are and maintain their integrity.	<p>Following construction monitoring shall be carried out by a suitably qualified ecologist to monitor effectiveness of mitigation for protected species:</p> <ul style="list-style-type: none"> <li>The use of underpasses and crossing points by the intended species is to be monitored annually for five years after construction has ceased, in case adaptations are required to encourage their use. Camera traps shall be to be deployed to assess the use of the crossing points for badger, otter, red squirrel and other terrestrial mammals, reptiles and amphibians, along with standard surveys to identify signs of these species/groups.</li> <li>Regular checks of fencing associated with crossing points shall be made every six months during the first two years to ensure it remains intact and effective.</li> <li>A monitoring programme for reptiles shall be developed and included within the Reptile Mitigation Strategy to be produced prior to site clearance and construction works commencing, to monitor reptile populations post-construction within the receptor sites used for reptile translocations.</li> <li>Bat activity will be monitored, post-construction, by undertaking the following surveys:</li> <li>Bat activity surveys of features of District importance or greater, to include surveys at the crossing points identified during the radiotracking studies (notably RTCP4 and RTCP5) (ES Figure 6.9: Bat Trapping and Radio Tracking Map (Application Document 3.3).</li> <li>Roost monitoring surveys of any replacement roosts created.</li> </ul>	PC National Highways	LEMP EMP	Monitoring reports Approved LEMP Approved EMP (third iteration)	O	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<ul style="list-style-type: none"> <li>Roost activity surveys for the maternity roosts at Eden View Cottages (Roost 11), Old Stone Barn (Roost 23), Streetside Farm (Roost 29) and Rokeby Grove (Roosts 30 to 32).</li> <li>A minimum of 2 roost activity surveys (emergence) per roost at least 4 weeks apart during the maternity period, mid-May to mid-August with an emphasis towards June and July for a minimum of three years. Where activity surveys show a lack/reduction in anticipated activity, survey effort will be increased to further understand the potential impacts of the construction works may be having on the roost structures.</li> <li>Barn owl nest boxes and screening planting shall be monitored. Evidence of barn owls killed on the road should also be recorded during these monitoring visits. Annual monitoring visits undertaken in July and August, for at least 5 years post construction/installation.</li> </ul>					
M-BD-04	Chapter 6: Biodiversity (Application Document 3.2)	To enhance National Highways records and aid maintenance and operation planning to minimise impacts on protected species	During monitoring of created and enhanced habitats, any incidental sightings of amphibians, red squirrels, other terrestrial mammals (brown hare, hedgehog and polecat) or terrestrial invertebrates, shall be recorded and submitted to National Highways for inclusion on EnvIS and to Local Records Centre.	PC National Highways	LEMP EMP	Monitoring reports Approved LEMP Approved EMP (third iteration)	O	
M-BD-05	Chapter 6: Biodiversity (Application Document 3.2)	To minimise impacts on protected species	Where protected species licences are required, there will be a legal requirement to carry out specific monitoring to understand whether mitigation was successful and/or whether remedial action is required.	PC National Highways	LEMP EMP	Monitoring reports Approved LEMP Approved EMP (third iteration) Licence conditions	O	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
Climate								
D-CL-01	Chapter 7: Climate (Application Document 3.2) Appendix 7.1: Greenhouse Gas (GHG) Assessment (Application Document 3.3)	Minimising GHG emissions through the design	<p>The detailed design shall seek to minimise GHG emissions during construction and operation using, at minimum, existing National Highways Frameworks for managing emissions. Measures to be implemented include:</p> <ul style="list-style-type: none"> <li>Maximising the potential for re-using and/or refurbishing existing assets and infrastructure to reduce the extent of new construction required (e.g. reuse and repurposing of signage or other street furniture)</li> <li>The design of the new vertical and horizontal geometry shall, where practicable (and in accordance with the Works Plans, Limits of Deviation and other constraints set out in the DCO) maximise the potential for reuse of material recovered from site</li> <li>Identifying low carbon and/or reduced resource consumption solutions (including technologies, materials and products) to minimise resource consumption during the construction, operation and at end of life.</li> <li>Where appropriate, identify, assess and integrate measures to further reduce carbon through on or off-site sequestration.</li> </ul>	PC	Detailed Design EMP	The Authority determination of detailed design	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
D-CL-02	Chapter 7: Climate (Application Document 3.2)	Increase climate resilience through the design and construction	Pavement design, material specification and maintenance regime shall be designed to mitigate against surface deterioration and impacts of hot weather.	PC	Detailed design	The Authority determination of detailed design	D	
MW-CL-01	Chapter 7: Climate (Application Document 3.2)	Minimising GHG emissions through the construction	<p>No part of the Project can start until a Carbon Strategy is developed in detail, has been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.</p> <p>Measures to minimise GHG emissions will be identified and implemented and will include (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Use of materials with the highest recycled content</li> <li>• Material recovered from the site shall be used to profile the new vertical and horizontal geometry. Alternatively near-site sources of material will be identified to minimise transportation and ground treatment emissions.</li> <li>• Efforts will also be made to reduce the off-site haul distance of excess material, by prioritising its use on neighbouring schemes.</li> <li>• Whole lifecycle assessments shall be undertaken to consider the impact of transportation as well as embodied GHG emissions for material used.</li> <li>• Careful construction management to avoid over-ordering of materials, to reduce transportation emissions.</li> <li>• Setting of targets to minimise GHG emissions and reduce GHG emissions during construction in line with the principles of PAS2080.</li> <li>• Appropriate traffic management measures shall be put in place (in accordance with the CTMP) to ensure that traffic flows on the existing A66 are maintained where reasonably practicable with limited disruption caused. Works shall be phased to minimise disruption to traffic, with more complex interface areas likely being undertaken during the night.</li> <li>• Any diversions required shall be the shortest acceptable route, to minimise GHG emissions.</li> <li>• Training of construction staff in actions to be taken to reduce emissions</li> <li>• Implementation of travel planning for construction staff (in accordance with the CTWAP)</li> <li>• Monitoring of energy use, water use, waste, material use and transportation</li> <li>• Powering down of equipment/plant during periods of non-utilisation</li> <li>• Optimising vehicle utilisation</li> <li>• Use of energy efficient lighting</li> <li>• Implementation of energy saving measures (e.g. minimising the use of diesel or petrol-powered generators and instead using mains electricity or battery powered equipment)</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the strategy for that part.</p>	PC	EMP Carbon Strategy	Approved EMP The Authority determination of Carbon Strategy Site inspection records Quarterly GHG emissions returns (Ref MW-CL-02)	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
MW-CL-02	Chapter 7: Climate (Application Document 3.2)	Minimising GHG emissions through the design and construction	Quarterly GHG emission returns during construction shall be reported in accordance with National Highways' requirements. Data provided for the GHG returns shall be evaluated to inform any ongoing monitoring of GHG emissions and feed back into future assessment of other projects during design development and planning approval.	PC	EMP Carbon Strategy	National Highways Carbon Tool	C	
M-CL-01	Chapter 7: Climate (Application Document 3.2)	Increase climate resilience on the project	Maintenance regimes developed for the new road shall include the requirement to monitor sediment build up in drainage systems and remove debris causing blockages.	National Highways	Monitoring and maintenance strategy	National Highways monitoring and maintenance strategy	O	
M-CL-02	Chapter 7: Climate (Application Document 3.2)	Increase climate resilience on the project	Material specification for pavements and ongoing maintenance regime during operation shall mitigate against surface deterioration and associated risks to road users.	PC National Highways	Monitoring and maintenance strategy	National Highways monitoring and maintenance strategy	O	
M-CL-03	Chapter 7: Climate (Application Document 3.2)	Increase climate resilience on the project	Embankments and cuttings will be monitored, as part of routine maintenance, to identify any areas that are vulnerable to scouring or erosion from surface run off. Where required, additional surface run-off defences will be implemented.	National Highways	Monitoring and maintenance strategy	National Highways monitoring and maintenance strategy	O	
M-CL-04	Chapter 7: Climate (Application Document 3.2)	Increase climate resilience on the project	<p>Prior to the start of any part of the Project, an assessment of the risk of high winds shall be undertaken for that part of the Project. Where assessment confirms risk of high winds, mitigation shall be implemented into the detailed design for the relevant part of the Project where reasonably practicable. This shall include, where reasonably practicable:</p> <ul style="list-style-type: none"> <li>• wind baffles</li> <li>• signage in high-risk locations warning road users of the potential risks</li> <li>• monitoring of observed and forecast wind speeds to allow for dynamic communications of the potential risks to road users (for example via social media channels)</li> <li>• Ultimately, in extreme circumstances, sections of the road could be temporarily closed to vehicles where there may be a risk of overturning</li> </ul>	PC	Detailed design Monitoring and maintenance strategy	The Authority determination of detailed design	O	
M-CL-05	Chapter 7: Climate (Application Document 3.2)	Increase climate resilience on the project	Maintenance delivery regimes will incorporate the potential impacts of high temperatures on maintenance workers through risk assessments. These will be reviewed regularly to ensure health and safety requirements within National Highways are met. Workers will be provided with appropriate equipment, including personal protective equipment where required and will be briefed on working in high temperatures.	National Highways	Monitoring and maintenance strategy	National Highways monitoring and maintenance strategy	O	
M-CL-06	Chapter 7: Climate (Application Document 3.2)	Increase climate resilience on the project	<p>The occurrence of wildfires in the vicinity of the route will be monitored. If the frequency of wildfire events is assessed as increasing over time NH will engage landowners/land managers to discuss adaptive management techniques to reduce wildfire risk.</p> <p>Emergency procedures will be developed as part of National Highways Emergency Response Planning to manage the impacts of smoke and fire risk on the carriageway in the event of a wildfire.</p>	National Highways	Emergency response plan	National Highways Emergency Response Planning	O	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
Cultural Heritage								
D-CH-01	Chapter 8: Cultural Heritage (Application Document 3.2)	To manage and minimise impacts on the historic environment	<p>No part of the Project can start until the Detailed Heritage Mitigation Strategy (HMS) is further developed (to the extent applicable to that part), in substantial accordance with the HMS included at Annex B3 of this EMP, has been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.</p> <p>The HMS shall be developed by the PC and shall include (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• The strategy for the archaeological works, summarising the work undertaken to date, the research agenda and the approach to mitigation proposed</li> <li>• The Overarching Written Scheme of Investigation (OWSI) which will set out the framework for the archaeological works and will be used as a reference for the Site-Specific Written Schemes of Investigation (SSWSI) which will be produced in advance of the commencement of the work</li> <li>• Requirements for SSWSI to be prepared, detailing type and location of mitigation required</li> <li>• Standards and guidance</li> <li>• Details of the proposed mitigation across each of the schemes, showing the specific mitigation proposed and the justification for the work – including the requirement for 'Preservation by record'.</li> <li>• Requirements for post excavation assessment reports to be produced once site (archaeology) works are completed.</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the approved HMS for that part.</p>	PC	Annex B3: HMS EMP	Approval of the HMS, following stakeholder consultation (as set out in Chapter 1) Technical and non-technical reports published	D	
D-CH-02	Chapter 8: Cultural Heritage (Application Document 3.2)	Maintain historic form fabric significance and qualifying features of listed buildings/structures	Where the project will result in effects to the fabric of listed buildings/structures, the design must be such that the minimum of historic fabric is removed to maintain historic form, fabric, significance and the qualifying features of the structure. Where fabric is affected or has to be removed but can be practicably reinstated, this must be done in a manner sensitive and appropriate to the historic fabric as agreed with the relevant local planning authority.	PC	EMP	Submission of detailed design information to Historic England	D	
D-CH-03	Chapter 8: Cultural Heritage (Application Document 3.2)	To consult with the relevant authority on the detailed design of the Project to ensure it meets Cultural Heritage objectives	<p>Historic England must be consulted with regard to the detailed design of Project elements which have been assessed in the ES as affecting designated heritage assets and their settings (Scheduled Monuments, Listed Buildings and Registered Parks and Gardens). For design of project elements which affect locally designated heritage assets and their settings, consultation must be undertaken with the relevant local planning authority.</p> <p>Design and technical information provided must provide details on the nature and level of impact to the asset in question, the design approach pursued and rationale, options considered and the approach to the mitigation of effects through design. Where consultation is carried out, it shall be in accordance with the detail set out in Section 1.4 of this EMP.</p>	PC	EMP	Consultation on detailed design information with Historic England and County Archaeologists, in accordance with Chapter 1 of this EMP. The Authority determination of detailed design	D	
MW-CH-01	Chapter 8: Cultural	To ensure that a record is made of historic buildings	Prior to demolition of the remains of Bowes Station or the relocation of listed milestones, recording will be carried out to comply with the	Archaeological Contractor	EMP	Records published	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
	Heritage (Application Document 3.2)	or structures prior to demolition or relocation, to develop a better understanding of the structures in question and create a lasting record	Chartered Institute for Archaeologists standard and the level of detail outlined in Historic England's guide Understanding Historic Buildings.		Annex B3: HMS			
MW-CH-02	Chapter 8: Cultural Heritage (Application Document 3.2)	To ensure that post-medieval milestones, boundary stones and the Countess Pillar and adjoining alms table will be relocated or protected in situ from accidental damage or loss during construction, in accordance with NPSNN 5.120	<p>Within the Order Limits there are four listed milestones, one boundary listed boundary stone and the listed Countess's Pillar and Alms table beside the Countess's Pillar.</p> <p>The milestones and boundary stones shall be relocated, being removed under archaeological supervision, stored, and replaced as close as possible to their original location at the end of the construction phase of the relevant part of the Project.</p> <p>The Countess Pillar and adjoining Alms table shall be protected in situ. No works will take place within the boundary railings of the Countess Pillar and Alms Table. This area, and the existing railings which surrounds it, is to be signposted and protected throughout construction of the Project. Protective fencing will be erected around the railings to provide an offset and protect the Scheduled Monument.</p>	PC	EMP Annex B3: HMS	Listed structures detailed are protected from harm during construction or reinstated. Site inspections of protective measures	C	
MW-CH-03	Chapter 8: Cultural Heritage (Application Document 3.2)	To protect archaeology of Scheduled Monuments	<p>No part of the Project assessed as potentially impacting on a Scheduled Monument can start until a Method Statement for working in and near scheduled monuments is developed in detail in substantial accordance with the essay plan included at Annex C3 of this EMP, has been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.</p> <p>The Method Statement shall include (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Details of the scheduled monument(s) present and key sensitivities associated with it</li> <li>• Construction methodology for all works proposed in or adjacent to scheduled monuments</li> <li>• Control measures to be implemented to ensure protection of scheduled monuments</li> </ul> <p>The Method Statement shall include, as a minimum, the following commitments (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Any works within the vicinity of the Brougham Castle Scheduled Monument shall be constructed with as minimal as reasonably practicable excavation for footings and foundations in order to protect any archaeology.</li> <li>• Works within Redlands Bank Cycle path provision shall be constructed using methods that reduce the excavation of topsoil as far as reasonably practicable within the Roman camp Scheduled Monument.</li> <li>• Works associated with tie-in to the existing A66 within the Scheduled Monument at Greta Bridge shall be restricted to within the existing highway boundary.</li> <li>• Carkin Moor Roman Fort Scheduled Monument must be protected and demarcated by a protective fence. Where topsoil is stripped along the length of the monument, a membrane or compact hardcore is to be placed in order to protect exposed</li> </ul>	PC	EMP	<p>Approval of the Method Statement, following stakeholder consultation (as set out in Chapter 1)</p> <p>Scheduled Monuments detailed are protected as far as reasonably practicable from harm during construction or reinstated.</p>	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>archaeology below where it is recorded (if not being removed as a result of the works). Any works shall be undertaken from the road, where reasonably practicable, rather than working from the Scheduled Monument.</p> <p>The relevant part of the Project assessed as potentially impacting on a Scheduled Monument must be carried out in accordance with the approved method statement for that part</p>					
MW-CH-04	Chapter 8: Cultural Heritage (Application Document 3.2) Chapter 10: Landscape and Visual (Application Document 3.2)	To protect historic landscape features	Within the Order Limits (where not directly affected by the construction works), the existing ridge and furrow field systems and earthworks in the vicinity of Bowes Bypass shall be protected during construction via measures including, but not limited to, signage and exclusion zones.	PC	EMP	Implementation of the stated measures	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
Geology and Soils								
D-GS-01	Chapter 9: Geology and Soils (Application Document 3.2) Chapter 11: Materials and Waste (Application Document 3.2) EMP Annex B8 (Document Application 2.7)	To manage material resources during the construction of the Project in accordance with best practice	<p>No part of the Project can start until a Materials Management Plan (MMP) (to the extent applicable to that part), is developed in detail in substantial accordance with the essay plan included at Annex B8 of this EMP has been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.</p> <p>The purpose of the MMP is to:</p> <ul style="list-style-type: none"> <li>Outline procedures to be followed to manage material resources during construction of the Project, including to ensure that re-use and handling of site won materials are managed in accordance with Contaminated Land: Applications in Real Environments (CL:AIRE) code of practice.</li> <li>Ensure the Project adheres to regulation, reduces waste management costs, records design and construction decisions that demonstrate good and best practice in material resource use and waste minimisation and management.</li> </ul> <p>The MMP will include details on the following (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>The roles and responsibilities required for its implementation</li> <li>The estimated quantities of earthworks and material assets required for construction</li> <li>The process for assessing materials to confirm they are suitable for use in the Project</li> <li>Location and details of known constraints (as identified in ES figures, ES Volume 2, Application Document 3.3)</li> <li>Procedures for managing and tracking materials</li> </ul>	PC	MMP	Approval of the MMP following stakeholder consultation (as set out in Chapter 1)	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<ul style="list-style-type: none"> <li>Plans showing material storage locations, demonstrating they are located away from known constraints highlighted for protection within the ES (Application Document 3.2), the EMP (Application Document 2.7) and the Project Design Principles (Application Document 5.11)</li> <li>Process for advertising the scheme as a donor site through CL:AIRE DOW COP scheme in the event that excess materials are present to be exported from the Project</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the approved MMP for that part</p>					
D-GS-02	Chapter 9: Geology and Soils (Application Document 3.2) Chapter 11: Materials and Waste (Application Document 3.2) EMP Annex B9 (Document Application 2.7)	<p>To manage disturbance to all soil resources during construction of the Project in accordance with best practice.</p> <p>To promote efficient use of and minimise impacts on soil receptors</p> <p>To demonstrate that restored soils are suitable for their intended purpose</p>	<p>No part of the Project can start until a Soil Management Plan (SMP) (to the extent applicable to that part), is developed in detail in substantial accordance with the essay plan included at Annex B9 of this EMP and has been approved in relation to that part.</p> <p>The purpose of the SMP is to:</p> <ul style="list-style-type: none"> <li>Outline the handling, storage and reinstatement procedures to be followed to manage the disturbance to all soil resources, both permanent and temporary, during the construction of the Project</li> <li>To identify the nature and types of soils affected and methods to be employed for stripping soil</li> <li>To set out requirements for reinstatement and restoration of agricultural land</li> <li>Specify roles and responsibilities required for its implementation</li> </ul> <p>The SMP will include, as a minimum, the following commitments (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>The guidance set out in the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Department for Environment, Food and Rural Affairs, 2011) and BS 3882:2015 BSI (British Standards Institution) Standards Publication Specification for topsoil (British Standards Institution, 2015) shall be followed when handling agricultural soils and, in particular, any land to be reprofiled.</li> <li>The SMP shall detail the procedures and measures that will be taken to classify, track, store, reuse and dispose of all excavated materials encountered during the construction works.</li> <li>Topsoil stripped during the construction of the Project shall be re-used as soon as is practicable and stored in such a way as to minimise structural damage from weathering, construction traffic movements, and multiple handling.</li> <li>The PC shall endeavour to return topsoil stripped during the construction of the Project as close to its source of origin as possible during restoration.</li> <li>Locations of potentially valuable natural seed bank (as identified in ES Chapter 6: Biodiversity (Application Document 3.2) or the Annex B2 LEMP) shall be clearly identified and soils</li> </ul>	PC	SMP	Approval of the SMP following stakeholder consultation (as set out in Chapter 1)	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>isolated for reuse as part of the environmental mitigation scheme.</p> <ul style="list-style-type: none"> <li>High standards of soil handling and management will be employed during construction (for example avoiding the creation of bare areas of exposed soil that would be vulnerable to erosion processes.)</li> </ul> <p>Restored agricultural soils will require monitoring following their reinstatement to confirm they are suitable for their intended use and function, as restored agricultural land or a basis for habitat creation or landscape planting. Key soil indicators, such as organic carbon and soil biology, will be measured and monitored.</p> <p>The relevant part of the Project must be carried out in accordance with the approved SMP for that part</p>					
D-GS-03	Chapter 9: Geology and Soils (Application Document 3.2)	To minimise impacts on geological, geomorphological designated areas	During the construction of the Project, excavations within the North Pennines AONB United Nations Educational, Scientific and Cultural Organization (UNESCO) Global Geopark shall be limited to the minimum reasonably required (as far as reasonably practicable) to deliver the Project to minimise disturbance.	PC	PDP EMP	The Authority determination of detailed design	D	
D-GS-04	Chapter 9: Geology and Soils (Application Document 3.2)	To limit the possibility for dispersal and accidental releases of potential contaminants, soil derived dusts and uncontrolled run-off to occur during construction	<p>No part of the Project involving intrusive ground works is to start until for that part a phase 2 targeted ground investigation and risk assessment has been completed following consultation with the Environment Agency and the relevant planning authority.</p> <p>Any such investigation and assessment required must be carried out in accordance with the Environment Agency's 'Land contamination: Risk Management (LC:RM)', and must include (a) details of any existing sources of contamination within the Order limits that may be affected by the carrying out of the authorised development; (b) any reasonably required protective measures to ensure that the carrying out of the authorised development does not make worse any adverse conditions or risks associated with such existing sources of contamination; and appropriate remediation strategies and mitigation measures to address any historic contamination within the Order limits which is shown to be having significant unacceptable effects on the environment within the context of the proposed works.</p> <p>Where the PC determines that remediation is necessary, a written scheme and programme for the remedial measures to be undertaken must be prepared and determined in accordance with the certified EMP, following consultation with the Environment Agency and the relevant planning authority.</p> <p>The steps and measures identified as necessary for the purposes of carrying out the authorised development must be implemented.</p>	PC	EMP	Production of Phase 2 GI report and (where necessary) determination of remediation plans, following stakeholder consultation (as set out in Chapter 1) Implementation of approved remediation measures	C	
MW-GS-01	Chapter 9: Geology and Soils (Application Document 3.2)	To ensure there are procedures such as a contamination watching brief for dealing with unexpected soil or groundwater contamination that may be encountered.	If contamination not identified within the Environmental Statement or subsequent Ground Investigation is encountered during works, it must be reported as soon as practicable to the planning authority and Environment Agency, and the PC must complete a risk assessment of the contamination.	PC	EMP MMP	The Authority determination of method statement Completion of appropriate GI works and approval of remediation plans, following stakeholder consultation (as set out in Chapter 1)	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>The PC shall prepare a method statement to ensure there are procedures for identifying and dealing with any unexpected contamination encountered during redevelopment works.</p> <p>Where the PC determines that remediation of the contaminated land is necessary, they must prepare a written scheme and programme for the remedial measures to be taken to render the land fit for its intended purpose, including a verification plan. That remediation scheme must be approved in consultation with the planning authority and the Environment Agency. A verification report shall be prepared to detail the as built remedial works.</p>			Implementation of approved remediation measures		
MW-GS-02	Chapter 9: Geology and Soils (Application Document 3.2)	To minimise impacts on construction workers during site preparation and construction	<p>Contractors shall work in accordance with Construction Industry Research and Information Association (CIRIA) C741 4th Edition <i>Environmental Good Practice on Site</i> (Construction Industry Research and Information Association, 2015) which includes:</p> <ul style="list-style-type: none"> <li>• Measures to minimise dust generation</li> <li>• Provision of PPE, such as gloves, barrier cream, overalls etc. to minimise direct contact with soils</li> <li>• Provision of adequate hygiene facilities and clean welfare facilities for all construction site workers</li> <li>• Provision of occupational health care</li> </ul> <p>Monitoring of confined spaces for possible ground gas accumulations, restricting access to confined spaces, i.e. to suitably trained personnel only, and use of specialist Personal Protective Equipment (PPE), where necessary Preparation and adoption of site and task specific health and safety plans as is required under Health and Safety legislation</p>	PC	Health and Safety Plan, Method statements	The Authority determination of method statements, health and safety plan, ground gas inspection logs or reports	C	
MW-GS-03	Chapter 9: Geology and Soils (Application Document 3.2)	To reduce the risk of dissolution from gypsum beds/karst	<p>Where reasonably practicable, no cuttings are to be excavated into the gypsum beds (karst) of the Eden Shales Formation.</p> <p>In the event that gypsum beds are encountered at any time when carrying out the Project, which was not previously assessed in the environmental statement, or a risk assessment the PC must cease construction in the vicinity of that gypsum bed and undertake a geotechnical risk assessment in consultation with the Environment Agency and relevant planning authority.</p> <p>Where the PC determines that remedial action is necessary, a written scheme and programme for the remedial measures to be undertaken must be produced, following consultation with the Environment Agency and the relevant planning authority.</p> <p>Remedial measures must be carried out in accordance with the scheme.</p>	PC	EMP	Implementation of specified actions	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
Landscape and Visual								
D-LV-01	Chapter 10: Landscape	Protection of existing trees and hedgerows	No part of the Project can start until an Arboricultural Impact Assessment (to the extent applicable to that part) has been undertaken	PC	LEMP, Project Design Principles	The Authority determination of Tree Protection Plans	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
	and Visual (Application Document 3.2)		<p>and Tree Protection Plans prepared for the protection of trees retained within and immediately adjacent to the order limits in relation to the relevant part of the Project. This shall consider the following standards:</p> <ul style="list-style-type: none"> <li>• BS 3936-1: Nursery stock. Specification for trees and shrubs</li> <li>• BS 3936-4: Nursery stock. Specification for forest trees, poplars and willows</li> <li>• BS 3882: Specification for topsoil and requirements for use</li> <li>• BS 3998: Tree Work. Recommendations</li> <li>• BS 4428: Code of practice for general landscape operations (excluding hard surfaces)</li> <li>• BS8545 Trees from nursery to independence in the landscape</li> <li>• BS 5837: Trees in relation to design, demolition and construction</li> <li>• BS 6031: Code of practice for earthworks.</li> </ul> <p>Alternatively, where a British Standard does not exist, works will follow industry good practice, e.g. Natural England's Advice on managing, restoring, and creating grassland.</p> <p>Measures shall be included in the Tree Protection Plans to be implemented during construction to ensure the protection of retained trees and hedgerows within and immediately adjacent to the Order Limits.</p> <p>Measures to be implemented include (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Fencing of the root protection area (RPA) or defined construction exclusion zone of retained trees and hedgerows to prevent accidental damage during construction</li> <li>• Specification of the methods to be employed when working within RPAs, if this cannot be reasonably be avoided</li> <li>• Inspection, maintenance and management of trees and scrub to be retained</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the plans developed for that part.</p>		(Application Document 5.11)	and Arboricultural Impact Assessment		
D-LV-02	Chapter 10: Landscape and Visual (Application Document 3.2)	<p>Soft landscape designs to provide required visual screening, landscape integration and visual amenity</p> <p>To consult with the relevant authority on certain aspects of detailed landscape design to ensure it appropriately reflects the mitigation commitments made in the Environmental Statement with regard to the AONB and its Special Qualities</p>	<p>No part of the Project can start until a landscaping scheme (to the extent applicable to that part) has been developed in detail in substantial accordance with the Project Design Principles (Application Document 5.11), has been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.</p> <p>Each landscaping scheme must include (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Location, number, species, size and planting density of any proposed aquatic or terrestrial planting</li> <li>• Landscaping works associated with any fences and walls (as appropriate)</li> <li>• Cultivation, importing of materials and other operations to ensure plant establishment</li> <li>• Proposed finished ground levels</li> <li>• Hard surfacing materials</li> <li>• Details of existing trees to be retained, with measures for their protection during the construction period</li> </ul>	PC	LEMP PDP	The Authority determination of the detailed landscaping design, following stakeholder consultation (as set out in Chapter 1)	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<ul style="list-style-type: none"> <li>Implementation timetable for the landscaping works</li> <li>Measures for the replacement, in the first available planting season, of any tree or shrub planted as part of the landscaping scheme that, within a period of 5 years after the completion of the part of the authorised development to which the relevant landscaping scheme relates, dies, becomes seriously diseased or is seriously damaged in the construction of the authorised development</li> <li>Retained historic landscape features and proposals for restoration, where relevant</li> </ul> <p>The PC must consult the relevant local planning authorities on the landscaping scheme, and with Natural England and the AONB Partnership with particular reference to the landscape design at the interface with the North Pennines AONB and its setting, prior to the submission of the landscaping scheme for approval.</p> <p>The relevant part of the Project must be landscaped in accordance with the approved landscaping scheme for that part</p>					
D-LV-03	Chapter 10: Landscape and Visual (Application Document 3.2)	To ensure an appropriate landscape scheme for the local environment	<p>Planting must be drawn from a native palette of suitable species, locally indigenous, and from local provenance where reasonably practicable, reflecting the variations in planting character across the Project, and respecting local/site conditions<sup>4</sup>.</p> <p>Planting must be drawn from appropriate grades of nursery stock to promote optimal establishment after implementation, balanced with landscape integration and effective screening requirements.</p>	PC	EMP LEMP	The Authority determination of the Landscape scheme	D	
D-LV-04	Chapter 10: Landscape and Visual (Application Document 3.2)	To minimise impacts to existing parkland style landscape and mature trees	Tree removal must be kept to a minimum as far as reasonably practicable. Where trees are required to be removed for the purposes of the Project, the trees removed must be replaced, at an appropriate location within the Order limits as close to the original position as is reasonably practicable with the same species (or a species of the same association where climate resilience and/or biosecurity are an issue) in the largest available stock size. Replacement trees shall be in a minimum planting ratio of at least two trees planted for every one tree removed.	PC	EMP	Implementation of the measure	D C	
MW-LV-01	Chapter 10: Landscape and Visual (Application Document 3.2) Chapter 6: Biodiversity (Application Document 3.2)	Protection of existing and proposed trees and hedgerows	Where any tree works including lopping, topping, crown lifting or pruning is necessary, this shall be undertaken in accordance with British Standard (BS) 3998:2010 Tree Work Recommendations (BS 3889:2010) (British Standard, 2010) and Arboricultural Association advice notes identified in the Arboricultural Impact Assessments	PC	2nd iteration LEMP PDP Works Contract Documents	Completion of Works Contract and The Authority determination of of 3rd iteration of LEMP	C	
M-LV-01	Chapter 10: Landscape and Visual (Application Document 3.2)	Establishment and maintenance monitoring (Years 0-5) to ensure landscape and visual functions are achieved	Monitoring of landscape elements in accordance with measures set out in the LEMP (REAC Ref D-BD-01) to ensure the new planting establishes and provides the landscape and visual mitigation required.	PC	2nd iteration LEMP National Highways DMRB Series 3000 and appendices	Completion of Works Contract and The Authority determination of of 3rd iteration of LEMP	O	

<sup>4</sup> DMRB LD 117, section A4

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
Material assets and waste								
D-MAW-01	EMP Annex B2 Outline Site Waste Management Plan (Application Document 2.7)	Manage key waste streams from the Project, minimise use of materials and maximise compliance with the waste hierarchy	<p>No part of the Project can start until a Site Waste Management Plan (SWMP) (to the extent applicable to the relevant part of the Project), is developed in detail in substantial accordance with the outline plan included at Annex B2 of this EMP, has been subject to stakeholder consultation as described in Chapter 1 and has been approved as part of a second iteration EMP in relation that part of the Project.</p> <p>The purpose of the SWMP is to:</p> <ul style="list-style-type: none"> <li>Identify the key waste streams that are likely to be produced from the Project and appropriate waste management and minimisation options, with an aim to encourage resource efficiency and sustainable waste management</li> <li>Ensure the Project adheres to regulation and reduces waste management costs</li> <li>To record design and construction decisions that demonstrate good and best practice in material resource use and waste minimisation and management</li> <li>Record how waste is prevented, minimised, re-used, recycled and disposed of on a construction site.</li> </ul> <p>The SWMP will include, as a minimum, the following commitments (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>When managing waste on site the PC shall apply the waste hierarchy, measures shall be implemented to encourage the options that maximise reduction of waste, reuse or recycling (in that priority order) over disposal of waste.</li> <li>The PC shall comply with all aspects of waste regulations and Environmental Permitting Regulations where applicable and shall use duty of care waste transfer notes to ensure traceability of waste and legal disposal</li> <li>Materials shall be reused onsite where reasonably practicable.</li> <li>Materials that cannot be reused shall be recycled onsite if reasonably practicable, and if not opportunity shall be sought for recycling and recovery of materials offsite at recycling facilities</li> <li>Where reasonably practicable, non-hazardous materials derived from demolition (e.g. aggregates, concrete, asphalt planings) shall be reused as sub-base in construction of the Project.</li> <li>Monitoring and measurement of waste will be undertaken on a regular (monthly) basis by the PC, with regular interpretations to identify trends and rectify wasteful practices. The results of monitoring will be included in regular (monthly) site meetings to include the Project Manager and designated Materials and Waste Manager.</li> <li>Any material that is required to be taken off site will be characterised in accordance with the Environment Agency Technical Guidance WM3 (2015)</li> </ul>	PC	SWMP	Approval of the SWMP following stakeholder consultation (as set out in Chapter 1)	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<ul style="list-style-type: none"> <li>Prior to demolition of each structure or building during construction of the Project, a pre-demolition audit will be carried out to quantify materials and investigate opportunities for re-use. These opportunities will be pursued where reasonably practicable.</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the SWMP for that part</p>					
D-MAW-02	Chapter 11: Materials and Waste (Application Document 3.2)	Reduce consumption of primary resources and minimise offsite disposal.	<p>The detailed design and construction of the Project shall be carried out with an aim of achieving an earthworks balance. Each scheme will have a cut/fill balance resulting in materials and waste generation. Wherever reasonably practicable, the design has sought to achieve a balance of cut and fill at individual scheme, package and project level, taking into account the complexity of the phasing of delivery. The priority shall be given to reuse of materials within each scheme area, followed by transfer for reuse on other schemes.</p> <p>Where excavated material cannot be reused as part of the Project, the PC shall fully investigate opportunities to use excess materials at local restoration sites, where practicable in line with the Contaminated Land: Applications in Real Environments (CL:AIRE) Definition of Waste: Development Industry Code of Practice( DoW CoP).</p>	PC	EMP MMP	<p>The Authority determination of detailed design</p> <p>Implementation of the approved MMP</p>	D  C	
D-MAW-03	Chapter 11: Materials and Waste (Application Document 3.2)	Maximise efficiency and minimise waste through design	The PC shall investigate opportunities to introduce (or retain) standardisation across the Project in the design (e.g., standard specifications for a product, and/or the use of components, methods or processes that are repeated through the Project), to reduce waste inherent in the design. This may include standardised concrete components, overbridge structures, local road bridges, retaining walls, site accommodation.	PC	EMP	The Authority determination of detailed design	D	
MW-MAW-01	Chapter 11: Materials and Waste (Application Document 3.2)	Minimise environmental impact of procured materials required for construction	<p>As part of the process for procuring materials for use as part of the Project, the PC shall take into account the environmental impacts associated with their manufacture, as well as other considerations such as structural design, carbon footprint (PAS 2050), energy consumption, long-life performance, visual impacts, durability and cost, with an aim of procuring the most sustainable materials where appropriate to do so. This may include adopting offsite construction where it is more sustainable to do so.</p> <p>The detailed design shall allow for the use of materials that can be adapted. This flexibility will promote the reuse of materials at the end of first life (the point at which an asset is no longer useful in the capacity for which it was originally intended).</p>	PC	EMP MMP	Procurement of materials in accordance with environmental policy	C	
MW-MAW-02	Chapter 11: Materials and Waste (Application Document 3.2)	To manage the disposal of construction waste in line with the upper tiers of the waste hierarchy	<p>The PC shall seek to achieve a recovery rate of a minimum of 70% (by weight) for construction and demolition waste (excluding excavated soil and stones) arising from the Project. Recovery is any operation, the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.</p> <p>In addition, the Project will seek to achieve at least 90% (by weight) material recovery of non-hazardous Construction and Demolition Waste (CDW), in accordance with DMRB LA 110.</p>	PC	EMP SWMP	Achievement of recovery rate target	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
MW-MAW-03	Chapter 11: Materials and Waste (Application Document 3.2)	To comply with Regional target of 31% reused/recycled material use <sup>5</sup> To manage the disposal of construction waste in line with the upper tiers of the waste hierarchy	In cases where it is practicable for the PC to use re-used or recycled aggregates as part of the Project (for the avoidance of doubt, where they can be used in place of primary aggregates and there is no resulting adverse impacts from a technical or economic perspective), the PC must seek to achieve a target of at least the use of 31% of re-used or recycled aggregates.  If the PC cannot achieve this target the PC shall undertake a whole life sustainability assessment of alternative options to demonstrate a sustainable alternative approach. This assessment would consider the whole life environmental, economic and social impacts of the alternative material options.	PC	EMP	Achievement of aggregates target	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
Noise and Vibration								
D-NV-01	EMP Annex B5 Noise and Vibration Management Plan (Application Document 2.7)	To manage and minimise impacts arising from construction noise and operational noise	No part of the Project can start until a Noise and Vibration Management Plan (NVMP) (to the extent applicable to that part), is developed in detail in substantial accordance with the outline plan included at Annex B5 of this EMP, has been subject to stakeholder consultation as described in Chapter 1 and has been approved in relation to that part.  The NVMP shall include (to the extent applicable to the relevant part of the Project): <ul style="list-style-type: none"> <li>• Details of any 'consents to be sought under section 61 of the Control of Pollution Act 1974</li> <li>• Noise Insulation and Temporary Housing provision</li> <li>• Details on proposed Site Working Hours</li> <li>• Details on Noise and Vibration Sensitive Receptors</li> <li>• Requirements for Noise and Vibration Monitoring</li> <li>• Details on how local residents that may be affected by construction noise and vibration will be notified of activities that have the potential to cause a nuisance</li> <li>• Details on how complaints will be recorded and responded to.</li> </ul> The NVMP shall, as a minimum, include the following commitments (to the extent applicable to the relevant part of the Project): <ul style="list-style-type: none"> <li>• Implementation of Best Practicable Means (BPM) methods at all times (as defined under Section 72 of the Control of Pollution Act 1974 and Section 79 of the Environmental Protection Act 1990).</li> <li>• Mitigation shall include Section 61 consents, noise insulation and temporary housing where assessments demonstrate a requirement such as a breach of the thresholds set out in Noise Insulation Regulations 1975 and BS5228-1 .</li> <li>• Trials to be conducted prior to activities with potential to generate significant vibration, to establish actual vibration levels at the nearest sensitive receptors. This information shall</li> </ul>	PC	Noise and Vibration Management Plan	Approval of the NVMP following stakeholder consultation (as set out in Chapter 1)	D	

<sup>5</sup> Ministry of Housing, Communities and Local Government (2009) National and regional guidelines for aggregates provision in England 2005-2020

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>be used to inform the most appropriate plant and methods to be utilised.</p> <ul style="list-style-type: none"> <li>Monitoring of noise and vibration during construction, to include physical and observational checks/audits at locations to be determined in consultation with relevant Local Planning Authorities. Locations selected shall be determined by the works being undertaken (and level of anticipated noise) and the sensitivity of receptor and will be informed by further calculations once detailed design and construction planning is complete.</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the NVMP for that part</p>					
D-NV-02	Chapter 12: Noise and Vibration (Application Document 3.2)	To avoid and minimise significant adverse effects arising from operational noise.	<p>Noise mitigation in the form of noise barriers (fence type), as defined in the Environmental Statement (Application Document 3.2) must be provided in accordance with the following:</p> <p>Barrier 14 must be constructed prior to Appleby to Brough opening for public use.</p> <p>In respect of Barrier 52, before M6 Junction 40 to Kemplay Bank has opened for public use:</p> <ul style="list-style-type: none"> <li>The PC must engage with the residents of Skirsgill Lodge to establish whether they would support the implementation of the Barrier</li> <li>The PC must engage with the local planning authority (and, where relevant to its functions, Historic England) to obtain their views as to whether the Barrier should be implemented</li> <li>The PC must take any feedback received as part of the above engagement into account in determining whether to implement the Barrier and should it determine it appropriate in all the circumstances to implement the Barrier, it must be constructed prior to M6 Junction 40 to Kemplay Bank opening for public use; and</li> <li>Where the PC determines that the Barrier should not be implemented, it shall explore alternative noise mitigation measures for Skirsgill Lodge in consultation with the relevant residents and the local planning authority and implement the same where reasonably practicable having regard to technical, economic and environmental considerations.</li> </ul> <p>In respect of Barrier 86, before Cross Lanes to Rokeby has opened for public use:</p> <ul style="list-style-type: none"> <li>The PC must engage with the residents of North Bitts Farm to establish whether they would support the implementation of the Barrier;</li> <li>The PC must engage with the local planning authority (and, where relevant to their functions, Historic England) to obtain their views as to whether the Barrier should be implemented;</li> <li>The PC must take any feedback received as part of the above engagement into account in determining whether to implement the Barrier and should it determine it appropriate in all the</li> </ul>	PC	Detailed design	The Authority determination of detailed design	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>circumstances to implement the Barrier, it must be constructed prior to Cross Lanes to Rokeby opening for public use; and</p> <ul style="list-style-type: none"> <li>- Where the PC determines that the Barrier should not be implemented, it shall explore alternative noise mitigation measures for North Bitts Farm in consultation with the relevant residents and the local planning authority and implement the same where reasonably practicable having regard to technical, economic and environmental considerations.</li> </ul>					
D-NV-03	Chapter 12: Noise and Vibration (Application Document 3.2)	To avoid and minimise significant adverse effects arising from operational noise.	The noise barriers (earth bunds) shown on drawing reference HE565627-AMY-HAC-S0405-DR-CH-301102 and HE565627-AMY-HAC-S0405-DR-CH-301100 (Application Document 5.18) must be constructed in accordance with DMRB LD 119 - Roadside environmental mitigation and enhancement(or any successor publication) and prior to Temple Sowerby to Appleby opening for public use.	PC	Chapter 12: Noise and Vibration (Application Document 3.2) By reference to DMRB LA 111 and DMRB LA104.	Construction of noise mitigation as presented in Chapter 12: Noise and Vibration (Application Document 3.2)	C	
D-NV-04	Chapter 12: Noise and Vibration (Application Document 3.2)	To avoid and minimise significant adverse effects arising from operational noise.	<p>Prior to the Project opening for public use, updated operational noise modelling shall be undertaken based on the final carriageway alignments of the new A66 contained in the detailed design to determine the requirement for further noise mitigation above those set out in D-NV-02 and D-NV-03, particularly with regard to following receptors at risk of significant effects if the full extent of the Limits of Deviation are utilised:</p> <ul style="list-style-type: none"> <li>• Restaurant / Café, Ketland Moor</li> <li>• Kirkdale, Dyke Nook</li> <li>• Garages, The Granary, West End Farm</li> <li>• Kilmond View, Road Leading To Kilmond View</li> <li>•</li> </ul> <p>Should any of these four receptors, or any additional receptors to those reported in the ES as experiencing likely significant adverse effects from operational noise impacts, be predicted by the updated modelling to experience likely significant adverse effects , noise mitigation measures shall be investigated for such receptors and, following the principles in section 12.9.6 Essential mitigation and enhancement measures, implemented should such mitigation be considered to be practicable and sustainable.</p>	PC	Detailed design	The Authority determination of detailed design	C	
D-NV-05	Chapter 12: Noise and Vibration (Application Document 3.2)	To ensure effectiveness of operational noise mitigation	As per DMRB LA 111 Section 4.2, for operational noise, monitoring measures should ensure embedded mitigation measures are included (or an equivalent performance is achieved with an alternative design), and any noise mitigation measures are verified to ensure they meet the design specifications. This would be completed as part of national Highways Project Evaluation procedures	PC	By reference to DMRB LA 111	Provision of noise mitigation measures as documented in Chapter 12: Noise and Vibration (Application Document 3.2)	C	
D-NV-06	Chapter 12: Noise and Vibration (Application Document 3.2)	To avoid and minimise significant adverse effects arising from operational noise.	The surfacing material of any new highway to be constructed as part of the Project that will form part of the A66 on completion shall be a SHW CL942 Thin Surface Course (TSC), also known as low noise surface.	PC	Detailed design	Implementation of surface course materials as per DMRB CD 236	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
Population and Human Health								
D-PH-01	Chapter 13: Population and Human Health (Application Document 3.2)  EMP Annex B6 Public Rights of Way Management Plan (Application Document 2.7)	To minimise impacts on walkers, cyclists and horse-riders (WCH)	<p>No part of the Project can start until a Public Rights of Way Management Plan (PRoWMP) (to the extent applicable to that part), is developed in detail in substantial accordance with the essay plan included at Annex B6 of this EMP and has been approved in relation to that part.</p> <p>The PRoWMP will set out:</p> <ul style="list-style-type: none"> <li>• The methodology to be used for identifying PRoWs</li> <li>• The results of surveys and assessments used to inform the plan, including a list of affected PRoWs</li> <li>• Stakeholder engagement to be undertaken to inform the development and implementation of the plan</li> <li>• Management measures to be implemented by the PC for each route affected by the Project, including general and specific provisions for closures and diversions, signage and information, forms of managed closure and re-provision details.</li> </ul> <p>The PRoWMP shall aim to (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Minimise disruption to WCH provisions through provision of temporary diversions where appropriate, together with signage.</li> <li>• Ensure that information about temporary closures and diversions is provided through appropriate means, in order to minimise inconvenience caused to WCH users of PRoW.</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the PRoWMP for that part</p>	PC	Public Rights of Way Management Plan	Approval of the PRoWMP following stakeholder consultation (as set out in Chapter 1)	D	
D-PH-02	Chapter 13: Population and Human Health (Application Document 3.2)  EMP Annex B11 Community Engagement Plan (Application Document 2.7)		<p>No part of the Project can start until a Community Engagement Plan (to the extent applicable to that part) is developed in detail in substantial accordance with the essay plan included at Annex B11 of this EMP and has been approved in relation to that part.</p> <p>The Community Engagement Plan shall set out:</p> <ul style="list-style-type: none"> <li>• Approach for delivering joined up communications and engagement</li> <li>• Proposals for recording communications and engagement with identified stakeholder groups</li> <li>• Details for delivery of stakeholder and community focused communications and engagement</li> <li>• Details of engagement channels means of contact with the Project during construction</li> <li>• Details of how engagement will be regularly evaluated and improved where possible.</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the Community Engagement Plan for that part</p>	PC	Community Engagement Plan	Approval of the Community Engagement Plan following stakeholder consultation (as set out in Chapter 1)	D	
D-PH-03	Chapter 13: Population and Human Health	To maximise the potential opportunities to develop a regional construction supply chain, improve skills and ensure accessible	<p>No part of the Project can start until a Skills and Employment Strategy (to the extent applicable to that part), is developed in detail in substantial accordance with the essay plan included at Annex B11 of this EMP and has been approved in relation to that part.</p>	PC	Skills and Employment Strategy	Approval of the Skills and Employment Strategy following stakeholder	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
	(Application Document 3.2)  EMP Annex B12 Skills and Employment Strategy (Application Document 2.7)	procurement for local businesses and Small and Medium Enterprises.	The Skills and Employment Strategy will set out: <ul style="list-style-type: none"> <li>• Details of anticipated recruitment requirements across the geographical scope and duration of the Project</li> <li>• Proposals for working with local training infrastructure to maximise local skills and employment outcomes</li> <li>• Implementation of an Inclusion Action Plan</li> <li>• Open procurement processes and measures to support local enterprises</li> <li>• Details of monitoring and evaluation.</li> </ul> The relevant part of the Project must be carried out in accordance with the Strategy for that part.			consultation (as set out in Chapter 1)		
D-PH-04	Chapter 13: Population and Human Health (Application Document 3.2)	To enhance signage along the route for local tourism assets due to importance of the A66 for access to key tourist locations	Additional signage beyond typical highway signage, for example to tourism assets such as Centre Parcs and the Yorkshire Dales National Park or the Great North Air Ambulance helipad, will be incorporated into the Project where appropriate and reasonably practicable. Consultation shall be undertaken with Local Highway Authorities on the provision of signage, in accordance with the procedures set out in Chapter 1.	PC	PDP	The Authority determination of detailed design	D	
MW-PH-01	Chapter 13: Population and Human Health (Application Document 3.2)	To minimise severance of access to businesses, private assets and community receptors during construction	Direct and indirect severance during construction shall be reduced as far as reasonably practicable through careful siting of construction compounds and lay down areas and careful planning of construction activities, informed by consultation with landowners identified as directly or indirectly affected by the construction works. Severance that cannot be avoided shall be mitigated by new temporary and permanent accesses.	PC	EMP Site Establishment Plan	Approved Site Establishment Plan Provision of alternative access	C	
MW-PH-02	Chapter 13: Population and Human Health (Application Document 3.2)	To minimise impacts to farm businesses during construction	Construction mitigation in relation to farm businesses will include: <ul style="list-style-type: none"> <li>• The accommodation of harvesting periods in the construction programme where reasonably practicable to account for potential crop loss.</li> <li>• Maintenance during the construction of the Project of farm access points where reasonably practicable and reinstating these as soon as possible.</li> <li>• Minimising impacts of dust and noise on crops and livestock in accordance with the commitments made in the Air Quality and Noise requirements.</li> <li>• Giving farmers advanced warning of works to enable them to plan for potential field rotations.</li> <li>• Minimise impacts upon field drainage during construction by liaising with farmers, during detailed design and construction planning, to understand the needs of their agricultural practices.</li> </ul>	PC	EMP CEP	Approved EMP	C	
MW-PH-03	Chapter 13: Population and Human Health (Application Document 3.2)	To minimise construction impacts on established seasonal events	The Appleby Horse Fair and the Appleby Horse Fair Multi-Agency Strategic Coordinating Group (MASCAG) shall be consulted on the timing of works, adequate diversions, and routing of Fair traffic away from the A66 prior to the start of works in respect of the Temple Sowerby to Appleby and Appleby to Brough schemes. Measures will be implemented that aim to minimise impacts on journeys to and from the Fair and minimise impacts of Fair traffic on other road users. These measures shall be incorporated into, and delivered via, the	PC	CTMP CEP	Approval of the CTMP following stakeholder consultation (as set out in Chapter 1)	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			Construction Traffic Management Plan (as set out in REAC Ref D-GEN-10).					
MW-PH-04	Chapter 13: Population and Human Health (Application Document 3.2)	To minimise construction impacts on public transport	No part of the Project can start until a survey (to the extent applicable to that part) is undertaken to establish the bus stops that potentially may be affected by that part of the Project. Prior to the start of works on that part, appropriate mitigation measures must be implemented in respect of the identified bus stops following consultation with the relevant local planning authority and relevant bus operators to include careful construction planning and alternative provision where reasonably practicable.	PC	CTMP	Approval of the CTMP following stakeholder consultation (as set out in Chapter 1)	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
Road drainage and the water environment								
D-RDWE-01			<p>No part of the Project can start until a Ground and Surface Water Management Plan (GSWMP) (to the extent applicable to that part), is developed in detail in substantial accordance with the outline plan included at Annex B7 of this EMP and has been approved in relation to that part.</p> <p>The purpose of the GSWMP is to:</p> <ul style="list-style-type: none"> <li>Identify surface watercourses and groundwater bodies that could be affected by the Project</li> <li>Summarise the existing flood risk and set out specific actions to be taken in the event of intense rainstorms</li> <li>Define the requirements for regulatory consent and set out any conditions that must be applied</li> <li>Control abstraction from/discharge to Controlled Waters and abstraction from public water supply, including measures for minimising water use</li> <li>Control any connections for sewage effluent</li> <li>Set out proposals for and management of dewatering excavations and underground ducts and chambers, voids treatment and management of water aspects related to underground structures</li> <li>Set out pollution prevention measures, controls on in-channel working and any additional mitigation for sensitive surface and ground water receptors and specify requirements for relevant method statements (Annexes C1, C2 and C4)</li> <li>Set out monitoring requirements and actions to be implemented in an emergency</li> </ul> <p>The GSWMP will include, as a minimum, the following commitments during the construction of the Project (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>A surface water management system using measures such as temporary silt fencing, cut off ditches, settlement ponds and bunds shall be set up prior to relevant works commencing to capture all runoff and prevent ingress of sediments and contaminants into existing drainage ditches where necessary. This shall be managed in accordance with CIRIA Guidelines</li> </ul>	PC	Ground and Surface Water Management Plan	Approval of the GSWMP following stakeholder consultation (as set out in Chapter 1)	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>and the Environment Agency's approach to groundwater protection and groundwater protection guidelines.</p> <ul style="list-style-type: none"> <li>• Areas of exposed soil and/or arisings deemed at risk of erosion during heavy rainfall or flood inundation shall be protected using either temporary measures (e.g. sheeting) or semi-permanent measures (for example coir matting) until vegetation is able to establish on these surfaces.</li> <li>• Works within channel that require temporary diversion of water flow will be appropriately timed and staggered, to reduce impacts to surface and groundwater flows (aiming to maintain flow as close to the original regime as possible during diversion or pumping).</li> <li>• Water abstracted through dewatering shall be discharged to the same groundwater catchment and downgradient of the dewatered element.</li> <li>• Monitoring of site's water management and discharge by suitably qualified EM and contractor (as per Table 2-2: Roles and responsibilities during construction).</li> <li>• Any additional requirements as determined in consultation with relevant parties</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the Strategy for that part.</p>					
D-RDWE-02	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage or loss during operation, in accordance with NPSNN 5.231.	<p>No part of the Project can start until the detailed operational drainage design for that part of the Project (to the extent applicable to that part) has been designed in accordance with DMRB LA 113 and compatible with the outline drainage strategy set out in ES Appendix 14.2 Flood Risk Assessment and has been approved by the Authority in relation to that part.</p> <p>The detailed drainage design shall comply, as a minimum, with the following commitments (to the extent applicable to the relevant part of the Project):</p> <ul style="list-style-type: none"> <li>• Flow volume and water quality control measures shall be incorporated into the scheme design to provide a sustainable drainage system (SuDS).</li> <li>• The carriageway drainage shall consist of a multi-stage treatment network to remove and retain soluble and suspended pollutants to ensure discharges to groundwater or local watercourses are at acceptable levels.</li> <li>• Detailed design shall incorporate the findings of project specific hydraulic modelling undertaken at DCO design, including any mitigation measures associated with the proposed design to manage fluvial flood risk. Any changes to the current design that have the potential to impact flood risk will be subjected to additional modelling.</li> <li>• Where the scheme passes over surface water flood flow paths, culverts shall be designed to accommodate flow to manage pluvial flood risk. The hydrology for the catchment draining to this point will be estimated using industry standard methods and used in the design of a suitable cross drainage structure to</li> </ul>	PC	EMP Surface and foul water drainage plan Drainage design	The Authority determination of detailed drainage design, following stakeholder consultation in accordance with Chapter 1	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			<p>pass this water beneath the scheme and reduce the potential for ponding or increased upstream flood risk.</p> <ul style="list-style-type: none"> <li>The drainage design shall include aspects of groundwater flood risk management such as managing inflows so that the intercepted groundwater flows will remain within the catchment (not between) of the respective receiving water, unless otherwise agreed with Environment Agency or Natural England.</li> <li>Attenuation/infiltration basins shall be designed to ensure that groundwater levels would not impede their performance. Drainage blankets will be designed beneath embankments that are to be constructed above key groundwater/surface water interactions (springs) to maintain the existing flow regime.</li> <li>Where ponds are designed for highway run-off attenuation (as retention ponds), they must have sufficient capacity to retain run-off from all events with an annual exceedance probability of greater than 1%, plus allowance for climate change in line with DMRB CG 501 and Environment Agency guidance. Such highway run-off attenuation ponds must be located outside Flood Zone 3.</li> <li>Design of drainage within cuttings shall allow groundwater to be collected separately from the highway drainage and allow recharge to the underlying aquifers, maintaining the existing recharge mechanisms. Where underlying geology prevents infiltration, collected groundwater shall be discharged into the nearest surface watercourse, which in baseline conditions shall be recharged by that groundwater and thus maintaining the overall water balance within the catchments.</li> <li>The drainage design shall be informed by further geotechnical investigation data (where obtained), baseline hydrological data and physical surveys of existing buried drainage features.</li> <li>Highway runoff will not be allowed to discharge freely, instead attenuation basins and swales shall be incorporated into the drainage design to manage this.</li> <li>The design of the road drainage network shall consider necessary measures and treatment to provide appropriate protection to aquifers from potential water quality deterioration. Where there is potential interaction with groundwater levels than these are appropriately assessed based upon the groundwater monitoring network.</li> <li>Design of underground structures will require drainage provisions to relieve hydrostatic pressure</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the drainage design.</p>					
D-RDWE-03	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage or loss during operation, in accordance with NPSNN 5.231.	Prior to start of works for a part of the Project, the detailed design of that part of the Project shall be assessed under the screening round for HEWRAT. This shall include data to be collected on ambient background copper concentrations at all new outfalls from drainage systems that discharge to surface watercourses.	PC	EMP	Completion of detailed design HEWRAT screening	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
D-RDWE-04	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure no significant deterioration of groundwater quality.	No part of the Project can start until a detailed assessment of risks posed by routine runoff to groundwater quality (to the extent applicable to that part) has been carried out for that part. The results of that risk assessment shall inform the detailed design of the operational drainage system for that part and any mitigation measures considered necessary to mitigate impacts, such as measures to separate carriageway drainage systems from groundwater, the lining of basins, and limitations on the disposal of surface water though infiltration shall be incorporated into the design.	PC	EMP	Completion of the detailed risk assessment.	D	
D-RDWE-05	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage or loss during construction, in accordance with NPSNN 5.221 and 5.231.	<p>Detailed design shall be compatible with the mitigation outlined in Appendix 14.9: Detailed Geomorphological Modelling (Application Document 3.4). No part of the Temple Sowerby to Appleby or Appleby to Brough schemes can start until further modelling of the proposed bridge crossing piers for the relevant scheme and refinement of design has been undertaken to ensure no impacts on flood depths to third party land are observed.</p> <p>Detailed design of watercourse crossings shall be compatible with the mitigation outlined in Appendix 14.4: Hydromorphology Assessment (Application Document 3.4) which includes at minimum:</p> <ul style="list-style-type: none"> <li>• Addition of flood alleviation culverts through the embankments to mitigate the disruption to river continuity for overland flow routes and in the channel</li> <li>• Instillation of green bank protection measures, such as scour protection to mitigate against the potential to changes of the geometry of the channel</li> <li>• Further hydraulic modelling for realigned sections of channel, with geomorphological input into the detailed design</li> <li>• Naturalisation of the culvert bed with appropriate riverbed substrate</li> <li>• Riparian planting to introduce natural source of woody material to the watercourse</li> <li>• Measures to dissipate flow velocity at culvert outfalls, such as baffle structures inside the culvert or boulder pools</li> <li>• Daylighting of existing culverts, where feasible and agreeable with landowners</li> <li>• Exploration of the potential to re-naturalise watercourses to increase sinuosity</li> </ul>	PC	EMP	<p>Detailed design overseen by an experienced hydromorphology and geomorphology experts.</p> <p>Detailed design of watercourse crossings does not impact adversely on flood risk or the River Eden SAC.</p>	D	
D-RDWE-06	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	Minimise impact on Ground Water Dependant Terrestrial Ecosystem (GWDTE)	At Dyke Nook Fen (shown on ES Figure 14.12, Application Document 3.3), further detailed surveying and assessment (as detailed in Appendix 14.7: Groundwater Dependent Terrestrial Ecosystem Assessment, Document Reference 3.4) shall be undertaken prior to any works commencing that may impact on this fen. If detailed assessment identifies that the risk of potential significant impacts remain, then additional mitigation shall be implemented as reasonably necessary, through consultation with Natural England. This mitigation shall comprise either lining of cuttings to prevent groundwater ingress with an appropriate drainage blanket beneath/surrounding which will enable continued groundwater flow to the GWDTE with limited	PC	EMP	Update to the GWDTE assessment using site specific data.	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			mounding or drawdown, redesign of scheme components within the LoDs to avoid sensitive areas.					
D-RDWE-07	Chapter 14: Road Drainage and Water Environment (Application Document 3.2)	To ensure compliance with WFD objectives and to cause no detriment to the current WFD condition of potentially impacted water bodies  To protect the environment and species from any potential impacts	No part of the Project shall start until an assessment of the compliance of the detailed design to the Water Framework Directive (to the extent applicable to that part) is undertaken and the WFD compliance assessment has been updated for that part to ensure that the reported outcomes are achieved and to inform confirmation of mitigation measures as required by REAC Ref D-RDWE-02 and D-RDWE-05.	PC	EMP WFD assessment	Updated WFD Assessment to be completed.	D	
D-RDWE-08	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure no deterioration in the status of Water Framework Directive (WFD) water body elements	Mitigation shall be provided in substantial accordance with the detail in Appendix 14.1: WFD Compliance Assessment (Application Document 3.4). At detailed design, the exact scope and extent of site-specific mitigation required will be determined through survey and assessment of detailed design and may include a selection of the following: <ul style="list-style-type: none"> <li>• Low flow channel creation to sustain appropriate flow depths and velocities</li> <li>• Bank reprofiling to improve morphological diversity</li> <li>• Removal of existing structures from the watercourses such as weirs or culverts</li> <li>• Creation of wetland habitat and improving floodplain connectivity</li> <li>• Riparian planting</li> </ul> The following locations are identified as requiring mitigation, dependant on the extent of impact confirmed at detailed design: <ul style="list-style-type: none"> <li>• Eamont (Upper) (GB102076071020) (up to 79.5m)</li> <li>• Eamont (Lower) (GB102076070990) (up to 570.9m)</li> <li>• Eden Lyvennet to Eamont (GB102076070980) (up to 49.2m)</li> <li>• Eden - Scandal Beck to Lyvennet (GB102076070880) (up to 823.5m)</li> <li>• Trout Beck (GB102076070930) (up to 1,690.2m)</li> <li>• Low Gill (Crooks Beck) (GB102076070750) (up to 408m)</li> <li>• Greta from Gill Beck to River Tees (GB103025072130) (up to 351m)</li> <li>• Greta from Sleighholme Beck to Eller Beck (GB103025072140) (up to 386m)</li> <li>• Skeeby/Holme/Dalton Bk from Source to River Swale (GB104027069180) (up to 1265m)</li> </ul>	PC	EMP	The Authority determination of environmental mitigation design No deterioration in WFD status.	D	
D-RDWE-09	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To protect unlicensed abstractions and ensure mitigation to supply	As additional groundwater monitoring enables identification of areas at risk of impact, additional surveying is to be undertaken at detailed design to allow refinement of the precautionary assessment of risk to unlicensed surface and ground water abstractions. Where an unlicensed supply such as a groundwater abstraction, has the potential to be impacted, a protection plan shall be developed for that well/source. If protection is not possible, a new network connection,	PC	EMP	Revision of risk assessment to unlicensed abstractions  Development of protection plans or	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
			alternative water supply or replacement well (designed to current guidance) shall be provided			mitigating the loss of supply.		
D-RDWE-10	Chapter 14: Road Drainage and Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage, loss or increased flood risk during construction, in accordance with NPSNN 5.231.	Any works that disturb drainage features, including land drainage, shall include necessary mitigation or reinstatement to ensure the features fulfil their original function and the baseline drainage conditions are maintained.	PC ECoW	Chapter 14: Road Drainage and Water Environment (Application Document 3.2) Project Design Principles	The Authority determination of detailed design	D	
D-RDWE-11	Chapter 14: Road Drainage and Water Environment (Application Document 3.2)	To ensure compliance with WFD objectives and to cause no detriment to the current WFD condition of potentially impacted water bodies  To protect the environment and species from any potential impacts	Where the requirement for flow control structures are determined, these shall be carefully designed to ensure flows under normal conditions are not adversely affected and the structure does not adversely affect upstream-downstream continuity (i.e. fish passage). Design of any flow control structures shall be undertaken at detailed design stage with input from a suitably qualified hydrologist, geomorphologist and ecologist.	PC	EMP WFD assessment	The Authority determination of detailed design  Successful implication of mitigation to be recorded and evidenced.	D C	
D-RDWE-12	Chapter 14: Road Drainage and Water Environment (Application Document 3.2)	To consult with the relevant authorities to ensure detailed design of the Project meets RDWE objectives	Consultation shall be undertaken with the relevant catchment and risk management authorities (Environment Agency, Natural England, Lead Local Flood Authorities (LLFAs) and local authorities) in relation to the detailed hydrological, hydrogeological, geomorphological, flood risk and drainage designs.	PC	Detailed design	Consultation undertaken in accordance with the process set out in Chapter 1	D	
D-RDWE-13	Chapter 14: Road Drainage and Water Environment (Application Document 3.2)	To ensure compliance with WFD objectives and to cause no detriment to the current WFD condition of potentially impacted water bodies  To protect the environment and species from any potential impacts	Flood compensation storage shall be designed and implemented so that it does not alter the flood mechanism or reduce the connectivity of the affected watercourse and its floodplain. Prior to any works commencing on a part of the Project, further hydromorphology and geomorphology assessments will be undertaken so as to determine requirements of flood compensation storage for that part. This shall also include measures so any fish located within the flood storage area can return to the channel as the floodwater recedes by appropriately grading the flood storage area, which will be undertaken at detailed design stage with input from a suitably qualified Fluvial Geomorphologist and Aquatic Ecologist.	PC	Detailed design	The Authority determination of detailed design  Successful implication of mitigation to be recorded and evidenced.	D C	
D-RDWE-14	Chapter 14: Road Drainage and Water Environment (Application Document 3.2)	To ensure protection of the environment and additional protection to the River Eden SAC	Further flow modelling to be undertaken before the start of any works associated with the Warcop Junction in order to develop appropriate mitigation to reduce flow velocities and redirect flow energy, based on Appendix 14.9: Detailed Geomorphological Modelling (Application Document 3.4). At minimum, the following mitigation measures to shall be implemented, with precise details to be confirmed following the modelling outcomes and in consultation with the Environment Agency: <ul style="list-style-type: none"> <li>• Realignment of the channel to increase sinuosity</li> <li>• Green bank protection measures</li> <li>• Increasing roughness of flood compensation structures to better store fine materials</li> </ul>	PC	EMP	Evidence of modelling of detailed design and consultation undertaken in accordance with the process set out in Chapter 1	D	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
MW-RDWE-01	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage or loss during construction, in accordance with NPSNN 5.231.	<p>Water with a higher risk of contamination which requires discharge, including groundwater pumped out of pilings during concrete pouring, will be contained and treated using appropriate measures such as coagulation of sediments, dewatering and pH neutralisation prior to discharge..</p> <p>Contaminated water that cannot be treated on site would, if necessary, be pumped to a suitably licenced tanker before being exported off site for treatment at an appropriately permitted facility.</p> <p>Monitoring of contaminated water by suitably qualified EM and contractor.</p> <p>Appropriate site-specific method statement on the extraction and discharge of contaminated water during construction. To be prepared by the contractor.</p>	PC	EMP Ground and Surface Water Management Plan	<p>Construction drainage design and detailed site-specific EMP.</p> <p>Site inspections undertaken</p> <p>Site inspection log book completed</p>	C	
MW-RDWE-02	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage or loss during construction, in accordance with NPSNN 5.231.	Any grouting works to be implemented as part of the Project shall be subject to a tailored risk assessment prior to their implementation to allow appropriate methodology to be developed, where required, to reduce grout/cement escape through fractured rock/fissures/gulls and reduce risk to the water environment. The results of the tracer tests or any other investigations, where available, shall be considered in the preparation of a grouting methodology. This will be adapted by the contractor into a site specific method statement.	PC	EMP Ground and Surface Water Management Plan	Appropriate site-specific method statement from contractor.	C	
MW-RDWE-03	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage or loss during construction, in accordance with NPSNN 5.231.	No part of the Project can start until there has been a review and update of groundwater conceptual model for that part (to the extent applicable to that part) based on the detailed design and hydrogeological impact assessment undertaken based on any new, site specific information is received in order to inform measures to be taken during construction to protect groundwater. Where reasonably required to inform the assessment, this shall be informed by additional surveys of groundwater and spring flows, levels and quality.	PC	EMP	<p>Conceptual model to be updated.</p> <p>Hydrogeological impact assessment to be updated.</p>	C	
MW-RDWE-04	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage or loss during construction, in accordance with NPSNN 5.231.	<p>No part of the Project that involves piling works can start until a Method Statement for piling (to the extent applicable to that part), is developed in detail in substantial accordance with the essay plan included at Annex C4 of this EMP and has been approved in relation to that part.</p> <p>The Method Statement shall include:</p> <ul style="list-style-type: none"> <li>• A site-specific foundation works risk assessment (FWRA) for the construction of underground structures and ground improvement works Details of the watercourses present and key sensitivities associated with it</li> <li>• Construction methodology for all piling works</li> <li>• Control measures to be implemented to ensure protection of sensitive receptors</li> </ul> <p>The relevant part of the Project must be carried out in accordance with the Method Statement for that part.</p>	PC	EMP Ground and Surface Water Management Plan	<p>FWRA for specific structure/ground improvement works.</p> <p>Approved method statement following stakeholder consultation as set out in Chapter 1</p>	C	
MW-RDWE-05	Chapter 14: Road Drainage	To ensure that the receiving environment is	No part of the Project can start until a voids method statement is developed for that part (to the extent applicable to that part) . The	PC	EMP	Development of voids method statement.	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
	and the Water Environment (Application Document 3.2)	protected from accidental damage or loss during construction, in accordance with NPSNN 5.231.	method statement will set out procedures and measures for treatment of voids that will reduce impacts on groundwater flows. Monitoring adherence to method statement by suitably qualified EM and contractor. The relevant part of the Project must be carried out in accordance with the method statement for that part.			Site inspections undertaken Site inspection log book completed		
MW-RDWE-06	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage or loss during operation, in accordance with NPSNN 5.231.	Where boreholes are used for dewatering, monitoring and ground investigations are decommissioned, the decommissioning of those boreholes shall be carried out in a way that mimics the natural geology, or alternatively the entire well/borehole will be backfilled with a low permeability material that will prevent significant movement of groundwater through/along the borehole. Backfill materials shall be clean, inert and non-polluting, and appropriate to the ground and groundwater conditions. Decommissioning shall be undertaken under the watching brief of a suitably qualified ECoW.	PC ECoW	EMP	Appropriate site-specific method statement from contractor. Contractor to provide, implement and document solutions to non-compliances.	C	
MW-RDWE-07	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure no significant deterioration of groundwater quality.	During construction adequate fuel/chemical storage facilities e.g. bunded tanks, hard standing and associated emergency response spillage control procedures are to be implemented in substantial accordance with current guidance; CIRIA SP156, C534, C648, C649, C692, C750 and Environment Agency Pollution Prevention Guidance and Guidelines for Pollution Prevention. Construction plant shall be well maintained and associated emergency response/spillage control procedures are to be in place within the construction method statements.	PC	EMP	Appropriate site-specific method statement from contractor. Contractor to provide, implement and document solutions to non-compliances.	C	
MW-RDWE-08	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected and that risks to the Project are detected and managed appropriately	No works can start in areas identified as at risk of settlement including areas where karst features are encountered during further site investigation or during construction, or areas where cuttings encounter the Eden Shales Formation or Great Limestone Member until a settlement monitoring plan has been developed for the area in question at risk of subsidence, to periodically monitor any changes pre, during and post construction. Adherence to monitoring as set out in Section 6.1 by National Highways and the Principal Contractor.	PC	EMP	Development of the settlement monitoring plan.  RPs to provide, implement and document solutions to non-compliances.	C O	
MW-RDWE-09	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the River Eden SAC is afforded additional protections.  To ensure that the receiving environment is protected from accidental damage or loss during construction, in accordance with NPSNN 5.221 and 5.231.	Construction of temporary infrastructure, such as haul roads and watercourse crossings, are to be done with due consideration to the sensitivity of the location, such as proximity to the River Eden SAC and functionally linked habitats. Temporary infrastructure would avoid the introduction of foreign sediments into the floodplain or watercourses by using modular metal folding roads/grids rather than imported materials, so to not impact the geomorphology of the sensitive area. No temporary abstraction from the River Eden SAC or functionally linked watercourses shall be allowed.	PC EM	EMP	Appropriate site-specific method statement from contractor.	C	
MW-RDWE-10	Chapter 14: Road Drainage and the Water	To ensure no significant deterioration of	No temporary groundwater abstractions for the purposes of construction of the Project can start until a detailed assessment has been undertaken of the relevant abstraction that demonstrates	PC	EMP	Application for licences with required assessment.	C	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
	Environment (Application Document 3.2)	groundwater quality or quantity.	proposed abstraction volumes would not have an impact on receptors outlined in Chapter 14 of the ES (Application Document 3.2).					
MW-RDWE-11	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure no significant deterioration of groundwater quality.	The Environment Agency shall be consulted on future risk assessments for activities that may impede groundwater flow and quality, via the construction of impermeable barriers, and activities such as piling, ground improvement works and foundations, as per their request received during consultation.	PC	EMP	Consultation with Environment Agency to be recorded as evidence.	D	
MW-RDWE-12	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To protect the environment and provide additional protections for the River Eden SAC and functionally linked habitats.	Abstractions from the River Eden SAC and functionally linked habitats shall not be taken direct from surface waters, to avoid impact on designated features and the species supported by the River Eden SAC.	PC	EMP	Document system of work to ensure no abstractions from River Eden SAC and functionally linked habitats.	C	
M-RDWE-01	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage or loss during construction, in accordance with NPSNN 5.221 and 5.231.	<p>A water quality monitoring programme taking place prior to and during construction of the Project shall be designed in consultation with the Environment Agency. Locations of monitoring to be determined with regards to location of works determined in detailed design and proposed working methods, including sensitive locations such as the River Eden SAC but shall include as a minimum:</p> <ul style="list-style-type: none"> <li>Monitoring locations upstream and downstream of any location where works will be undertaken within channels or on structures over watercourses or any new outfalls</li> <li>Duration to be determined by nature of the works – for construction activities monitoring can cease when there is no further risk of impact, for new outfall installation monitoring shall continue for 6 months after construction</li> <li>The monitoring scope and criteria shall be determined through consultation with the Environment Agency.</li> </ul> <p>To ensure that the River Eden SAC is afforded additional protections, the scope of monitoring may be more intensive at Scheme 04/05 and Scheme 06.</p>	PC	EMP Ground and Surface Water Management Plan	Water quality monitoring of receiving surface watercourses and groundwater to be conducted, analysed and reported. Use data to characterise baseline and monitor effectiveness of mitigation.	C	
M-RDWE-02	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To ensure that the receiving environment is protected from accidental damage or loss during construction, in accordance with NPSNN 5.221 and 5.231.	<p>A programme of monitoring of groundwater and springs flow, level and quality prior to and during construction works shall be prepared in consultation with the Environment Agency. Locations of monitoring to be determined by the detailed design and proposed working methods but shall include as a minimum:</p> <ul style="list-style-type: none"> <li>Monitoring locations upstream and downstream of any location where substantial cuttings or works that could affect groundwater or springs will occur</li> <li>Duration to be determined by nature of the works – for construction activities monitoring can cease when there is no further risk of impact</li> <li>The monitoring scope and criteria shall be determined through consultation with the Environment Agency.</li> </ul>	PC	EMP Ground and Surface Water Management Plan	Groundwater monitoring to be conducted, analysed and reported. Use data to characterise baseline and monitor effectiveness of mitigation.	C	
M-RDWE-03	Chapter 14: Road Drainage	To ensure the effectiveness of the embedded mitigation	A post construction hydromorphology survey shall be undertaken at new culverts after construction is completed to determine the	PC	EMP	Survey reports	C O	

Ref	Source Ref	Objective	Action Required	RP	Implementation	Achievement Criteria	I Date	Sign off
	and the Water Environment (Application Document 3.2)	and the hydromorphological function along the new diverted channel	effectiveness of mitigation. The frequency of further surveys will be determined after the initial survey, and acceptability of the hydromorphological changes as a result of the installation of new culverts will be reported.					
M-RDWE-04	Chapter 14: Road Drainage and the Water Environment (Application Document 3.2)	To monitor for any potential scour or erosion and ensure effectiveness of scour protection implemented	As part of ongoing maintenance, inspections of potential scour on the Trout Beck crossing piers shall be conducted annually post construction during the lifetime of the infrastructure.	National Highways	EMP	Survey reports	O	

## **4 Consents and permissions**

### **4.1 Additional consents and licences**

- 4.1.1 This section describes consents and licences that are required to implement the environmental mitigation. It should be read in conjunction with the Consents and Agreements Position Statement (Application Document 5.4) which describes the overall strategy for consenting and the specific authorisations required.
- 4.1.2 Where possible and practicable, additional required consents (over and above the DCO) are included within the DCO. However, this may not be possible for a number of consents, for example where pre-construction surveys are required.
- 4.1.3 The Consents and Agreements Position Statement (Application Document Number 5.4) sets out the consents and agreements that are incorporated into the DCO, and those that are expected to be obtained separately after the DCO is granted.
- 4.1.4 This section of the EMP will include details of all consents and permissions that are required for the implementation of environmental mitigation during the construction or operation of the Project. Copies of the consents, once obtained, will be held on site and available for inspection.
- 4.1.5 Any conditions included in consents, licences and permissions will be documented in a consents register. A consents register will be developed and operated by the PC as part of their Environmental Management System, which forms part of the overall project Integrated Management System.

### **4.2 Relevant management plans**

- 4.2.1 Management plans are required for certain environmental topic areas. These are set out as commitments in Section 3 Register of Environmental Actions and Commitments.
- 4.2.2 Outline or expanded essay plans of these management plans are provided in Annex B Relevant management plans. These expanded essay plans establish a structure to facilitate further development of management plans as the detailed design of the Project is developed. They also set out any specific requirements for the content of those plans. Each management plan is to be produced in substantial accordance with the outline plan included at Annex B. These include:
- Outline Landscape and Ecological Management Plan (Annex B1)
  - Outline Site Waste Management Plan (Annex B2)
  - Detailed Heritage Mitigation Strategy (Annex B3)
  - Air Quality and Dust Management Plan (Annex B4)
  - Noise and Vibration Management Plan (Annex B5)
  - Public Rights of Way Management Plan (Annex B6)
  - Ground and Surface Water Management Plan (Annex B7)
  - Materials Management Plan (Annex B8)
  - Soils Management Plan (Annex B9)
  - Construction Worker Travel and Accommodation Plan (Annex B10)

- Community Engagement Plan (Annex B11)
- Skills and Employment Strategy (Annex B12)
- Construction Traffic Management Plan (Annex B13)
- Site Establishment Plan (Annex B14)
- Invasive Non-Native Species (INNS) Management Plan (Annex B15).

4.2.3 The PC shall further develop the above management plans as the detailed design is developed, in accordance with the REAC and the expanded essay plans.

4.2.4 These plans shall be consulted upon and subsequently published as part of the EMP upon approval, in accordance with the procedure set out in Section 1.4.

### **4.3 Environmental method statements**

4.3.1 Method Statements are required for specific works activities (or locations) that have a high risk of an environmental impact occurring. These are set out as commitments in Section 3 Register of Environmental Actions and Commitments.

4.3.2 Expanded essay plans of a number of these are provided in Annex B Relevant management plans. These expanded essay plans establish a structure to facilitate further development of method statements as the detailed design and construction planning of the Project is developed. They also set out any specific requirements for the content of those Method Statements. Each Method Statement is to be produced in accordance with the outline plan included at Annex C, where one exists, and in accordance with the relevant commitment. These include:

- Method Statement for working in and around the River Eden SAC (Annex C1)
- Method Statement for working in and near Scheduled Monuments (Annex C2)
- Method Statement for working in and near watercourses (Annex C3)
- Method Statement for piling (Annex C4)

4.3.3 The PC shall further develop the above Method Statements as the detailed design is developed, in accordance with the REAC and the expanded essay plans. The PC shall produce Method Statements for commitments where no essay plan is provided, in accordance with the REAC.

4.3.4 These plans shall be consulted upon and subsequently published as part of the EMP upon approval, in accordance with the procedure set out in Section 1.4.

## 5 Environmental asset data and as-built drawings

### 5.1 National Highways Asset Data Management Manual

- 5.1.1 The Asset Data Management Manual (ADMM) facilitates National Highways in achieving both its corporate objectives as well as its asset management objectives by providing a structure for setting out its asset data requirements. The ADMM provides clarity and consistency and is designed to reflect asset data needs. It is revised every six months to accommodate changes and expansion to the business needs.
- 5.1.2 The ADMM is for use by anyone creating, maintaining, or using data on behalf of or within National Highways. It is composed of four documents:
- *Part 1 - Data Principles and Governance* (Highways England (now National Highways), 2020b)<sup>6</sup> - defines the approach to and associated governance for, asset data management.
  - *Part 2 - Requirements and Additional Information* (Highways England (now National Highways), 2020c)<sup>7</sup> - provides National Highways' requirements for asset data management, detailed guidance, information, and descriptions of each asset type; providing visual examples.
  - *Part 3 - Data Dictionary* (Highways England (now National Highways), 2020d)<sup>8</sup> - defines the structure and rules for individual assets and attributes.
  - *Part 4 - Asset Inventory Selector* (Highways England (now National Highways), 2020e)<sup>9</sup> - includes a tool to assist in identifying and recording specific assets.

### 5.2 Collection and submission of environmental data

- 5.2.1 Environmental data is categorised as either Environmental Inventory or Environmental Management Information which together provide key detail on the composition of the soft estate (that is the natural habitats directly adjacent to the highway and within National Highways network boundary), what condition those assets are in and how they should be managed.
- 5.2.2 Environmental inventory data describes each environmental asset in terms of what it is, where it is and what it does. Environmental management information data details the maintenance requirements of the asset as well as its performance and condition. The environmental inventory establishes the baseline upon which environmental management information can be attached. Therefore, environmental management information can only be

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<sup>6</sup> Highways England (now National Highways) (2020b) Asset Data Management Manual Part 1 – Data Principles and Governance, available at: [REDACTED]

<sup>7</sup> Highways England (now National Highways) (2020c) Asset Data Management Manual Part 2 – Requirements and Additional Information, available at: [REDACTED]

<sup>8</sup> Highways England (now National Highways) (2020d) Asset Data Management Manual Part 3 - Data Dictionary, available at: [REDACTED]

<sup>9</sup> Highways England (now National Highways) (2020e) Asset Data Management Manual Part 4 - Asset Inventory Selector, available at: [REDACTED]

submitted once the corresponding asset has been recorded via the submission of environmental inventory data.

#### Environmental inventory data

- 5.2.3 The environmental inventory contains data collected by National Highways Major Projects and should include details relating to the following environmental topics:
- Landscape and Visual
  - Biodiversity
  - Cultural Heritage
  - Noise and Vibration.
- 5.2.4 Submissions of environmental inventory asset data should be broken down by point, line or polygon feature into geographic information system (GIS) tables.
- 5.2.5 For details on the submission of environmental inventory asset data, reference should be made to section 13.4 Environmental Inventory Data of *ADMM Part 2 - Requirements and Additional Information*.

#### Environmental Management Information

- 5.2.6 Environmental Management Information (EMI) is specific data attached to individual assets and assists in informing National Highways and its PCs of the broad environmental management requirements of the strategic road network, and corresponding environmental performance.
- 5.2.7 For details on EMI, reference should be made to section 13 of *ADMM Part 2 - Requirements and Additional Information*.

#### Environmental data submission

- 5.2.8 At this stage of the Project, environmental data is provided to consultees through the publication of the ES as part of the DCO application. Certain data must also be submitted to National Highways to ensure it is recorded in National Highways Environmental Information System (EnvIS). At the DCO submission stage of the project this will include the submission of all results and data from species surveys undertaken to inform the ES, and cultural heritage data where survey work has identified previously unknown assets.
- 5.2.9 Cultural heritage surveys undertaken to inform the ES are provided in ES Appendices 8.5 to 8.7 (Application Document 3.4) and include the following:
- Appendix 8.5 Geophysical Survey
  - Appendix 8.6 Trial Trenching Reports
  - Appendix 8.7 Geochemical Survey Report
- 5.2.10 Ecology surveys undertaken to inform the ES are provided in ES Appendices 6.3 to 6.22 (Application Document 3.4) and include the following:
- Appendix 6.3 Phase 1 Habitat Survey
  - Appendix 6.4 Hedgerows

- Appendix 6.5 Phase 2 National Vegetation Classification
- Appendix 6.6: Amphibians
- Appendix 6.7: Reptiles
- Appendix 6.8: Terrestrial Invertebrates
- Appendix 6.9: Badger CONFIDENTIAL
- Appendix 6.10: Red Squirrels
- Appendix 6.11: Bats CONFIDENTIAL
- Appendix 6.12: Other Terrestrial Mammals
- Appendix 6.13: Breeding Birds
- Appendix 6.14: Wintering Birds
- Appendix 6.15: Barn Owls CONFIDENTIAL
- Appendix 6.16: Otters
- Appendix 6.17: Water Voles
- Appendix 6.18: Fish Habitat Assessment and MorPH
- Appendix 6.19: Fish
- Appendix 6.20: Aquatic Macrophyte and River Corridor Survey
- Appendix 6.21: Aquatic Invertebrate
- Appendix 6.22: White Clawed Crayfish

5.2.11 AutoCAD drawings and Geographical Information System (GIS) shapefiles will also be provided following detailed design for incorporation into National Highways Environmental Information System (EnvIS).

5.2.12 For details on the submission of EMI, reference should be made to section 13.5 Submission of Data of ADMM *Part 2 - Requirements and Additional Information*.

5.2.13 Environmental data submission is ongoing through the construction, handover and operational phases. All environmental information will be collected and recorded in accordance with the requirements of the ADMM and EnvIS and will be submitted, along with all as-built drawings of environmental mitigation infrastructure, at the appropriate stages. These will be defined and set out in detail as this EMP develops.

## **6 Details of maintenance and EMP monitoring activities**

### **6.1 Monitoring**

6.1.1 The REAC sets out certain commitments for environmental monitoring to ensure the identified mitigation measures and actions can be tracked and closed out when completed. Some of these are specific e.g. ecology monitoring, others are more general, e.g. covered by routine inspection/audit.

6.1.2 The details of specific monitoring and reporting requirements for much of the monitoring required will be confirmed during detailed design and detailed construction planning and included in this section in the next iteration of this EMP. All monitoring will be developed in line with the commitments in the REAC.

#### **Environmental records inspections**

6.1.3 This section sets out the specific requirements for the PC's inspection and compliance procedures, including alignment with recognised quality and environmental management standards to maintain an audit trail of environmental obligations.

6.1.4 Records of compliance with the requirements of the EMP, derived from audits and other inspections, will be held at the PC site office. These will be available for inspection by representatives of any audit team and relevant statutory body such as local authorities or the Environment Agency, in their statutory role. The PC Quality Administrator will ensure there is a central filing system in place for any checklists, reports and monitoring consistent with the EMS.

### **6.2 Procedures to monitor compliance**

6.2.1 The PC Environment Manager and Section Environmental Leads will be responsible for regular site surveillance inspections to evaluate performance against the Project specific objectives, legal requirements, environmental commitments and the requirements of the EMP.

An overarching project record will be required for formal records associated with EMP implementation. The PC will compile a monthly written report that highlights any monitoring, incidents, non-conformances, training and visits that have taken place during the month. This report will be submitted to National Highways and all of the PC's senior management teams. National Highways will review the monthly reports to monitor whether the PC is implementing the actions in line with the certified documents and take corrective action in the event of non-conformance.

#### **Administration**

6.2.2 The PC will be responsible for maintaining and managing the environmental records held at the site office. An indicative list of relevant records includes environmental site checks/inspection records, monitoring (sampling, recording and subsequent actions), consents, permits, and waste transfer notes.

- 6.2.3 The environmental records are to be scanned and filed electronically or filed in a hard copy as part of the EMS (subject to the contractor's internal filing systems).

#### Quality management

#### Environmental audits

- 6.2.4 An audit record will be required to log environmental compliance as part of the project EMS. The PC will be responsible for undertaking their own audits, however, National Highways may initiate audits to report on compliance with environmental best practice, EMP and site-specific method statements should they wish. The review of monitoring, recording and reporting procedures will be maintained by the PC for the Project.
- 6.2.5 Supply chain audits will be the responsibility of the PC and undertaken on a regular basis, visiting at least one supplier or subcontractor per year. National Highways may also elect to undertake supply chain audits should they wish.
- 6.2.6 An auditor can only take account of the environmental information available at the time of the audit, the outcome of which is to identify environmental progress and compliance of the Project. A formal record of progress will be held in the form of an audit report.
- 6.2.7 Any observations or non-conformances will be actioned in advance of a subsequent audit taking place. Training will be provided as appropriate to all contractor staff and subcontractors based on the finding of the audit.

#### Nonconformity, corrective action and preventative action

- 6.2.8 Non-conformance with the provisions of this EMP will be dealt with in accordance with the PC's procedures. An NCR will be raised to record any non-conformance with the REAC that is identified through either the audits described above or through any other site inspections or reports received by the EM (e.g. that work carried out is not compliant with this EMP or commitments in the REAC have not been implemented correctly). The NCR shall describe the issue observed, the reasons why it is not compliant with the NCR and corrective action(s) required to be implemented. Those actions will then be implemented, and any lessons learnt will be identified and communicated to the wider project team (through alerts, tool box talks and through team meetings as appropriate).
- 6.2.9 Corrective and preventative action will be dealt with in accordance with the PC's procedures where a system deficiency has been identified during inspections, internal audits, third party audits or customer complaints. The NCR will identify the deficiency noted, the update that is required to the relevant system and the timescale and process for implementing the update.

#### Environmental management systems

- 6.2.10 The PC(s) for the Project are required to be accredited to *ISO 14001 Certification Environmental Management* (Quality Management Systems,

2015)<sup>10</sup>. This signifies an understanding of implementation of an EMS for recording, monitoring and managing the Project and the EMS will be maintained throughout the Project.

- 6.2.11 The Project construction works will be carried out in accordance with the EMS.
- 6.2.12 Environmental management will be monitored to establish compliance with the contract and environmental standards through regular inspections and audits. The responsibility for maintaining correspondence relating to the EMS and day-to-day records will rest with the PC, subject to contractual arrangements. Original copies of correspondence and copies of issued documentation will be recorded, together with records of any subsequent changes to that documentation.

#### Control documents

- 6.2.13 PC Risk Assessments, Method Statements and (Control of Substances Hazardous to Health) COSHH forms must all consider environmental impacts and sensitivities in addition to health and safety concerns.
- 6.2.14 This section will be updated by the PC prior to construction to include:
- Full details of monitoring and reviewing compliance with the EMP. For example, daily/weekly/monthly inspection/audit reports
  - Assessment criteria to identify success
  - Procedures for rectification of breaching or failings of EMP or EMS measures

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<sup>10</sup> Quality Management Systems (2015) ISO 14001 Certification Environmental Management

## 7 Induction, training and briefing procedures for staff

### 7.1 Induction and training

- 7.1.1 The PC will develop and deliver a programme of training on general and site-specific environmental issues prior to and throughout the construction stage. On commencement of site mobilisation, the PC will be the site owner and responsible for site inductions and training of all personnel on the site, whether full time staff, subcontractors or visitors.
- 7.1.2 General environmental awareness shall be achieved by:
- Site Specific Safety and Environmental Induction
  - Raising specific awareness of ecological issues on site through pre-work briefings
  - Principal Contractor Environmental Guidance Notes
  - Environmental site notices and posters
  - Method Statements and Method Statement briefings
  - 30 minute 'lunch and learn' presentations
  - Environmental Toolbox Talks
  - Informal briefings during site inspections.
- 7.1.3 All individuals working on or visiting the site will be required to attend the PC's site-specific induction. Those participating on or near to specific activities that have an environmental impact are required to attend additional training or Toolbox Talks which are led by the PC or specialists on ecology, pollution control, waste management and emergency procedures for minor and major incidents.
- 7.1.4 Specific training needs will be identified and provided for all personnel involved in work activities that could result in adverse impacts on the environment. Training will include reference to the importance of adhering to the contents of the EMP and the potential consequences of departure from specified method statements. Environmental training in the form of Toolbox Talks will also be undertaken on site, evidence of which will be maintained on record as part of the EMS.
- 7.1.5 Training will also be carried out as appropriate following an environmental near miss, incident or complaint.
- 7.1.6 A list of general and site-specific induction and Toolbox Talks training required for the Project will be developed by the PC and detailed in Table 7-1: List of induction and toolbox talks training required for the Project.

Table 7-1: List of induction and toolbox talks training required for the Project

Topic	Personnel	Delivery	Delivery format

Topic	Personnel	Delivery	Delivery format

## 7.2 Environmental competencies

- 7.2.1 The PC will develop criteria for minimum qualification and/or relevant experience for all responsible personnel (as described in Table 2-2). The PC will ensure all personnel conducting environmental tasks are suitably qualified and/or experienced for the roles and responsibilities that they are employed to undertake.
- 7.2.2 The PC will monitor and record that all staff have attended the relevant environmental induction or training listed above (including updated or new training) prior to undertaking any activities on site.
- 7.2.3 The EM on site must also review and highlight requirements for additional training as the Project progresses, to improve and add value to the overall site environmental awareness and compliance. Additional training or induction issues will be identified from the regular site environmental check reports, or site feedback on any noted non-compliance. It is a requirement for the site to maintain a high standard of environmental management, implementing requirements in the EMP and other plans, EMS and associated best practice guidance, and reduce risks that could negatively impact on the environment.
- 7.2.4 The EMP will also set out criteria that the PC will apply to evaluate the effectiveness of environmental training throughout the construction phase.

## 8 Annexes

Annex A Constraints map

Annex B Relevant management plans

Annex C Environmental method statements

Annex D Emergency procedures and records of incidents

Annex E Evaluation of change register

Annex F Final environmental investigations and monitoring reports