A57 Link Roads

TR010034

7.2 Environmental Management Plan (First Iteration)

APFP Regulation 5(2)(q)

Planning Act 2008 Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

April 2022

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A57 Link Roads Scheme

Development Consent Order 202[x]

7.2 ENVIRONMENTAL MANAGEMENT PLAN (FIRST ITERATION)

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Author:	A57 Link Roads Project Team, National Highways

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Rev 3.0	March 2022	Deadline 6
Rev 4.0	April 2022	Deadline 9

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1. Introduction and Background to Scheme

1.1 Purpose of the Report

1.1.1 This document is the Environmental Management Plan (EMP) (First iteration) for the A57 Link Roads Scheme (previously known as Trans Pennine Upgrade) (hereafter referred to as the 'Scheme'). This EMP (First iteration) has been produced during the Preliminary Design stage and provides the preliminary environmental guidance on how to manage the environmental effects of the Scheme.

1.1.2 An Environmental Impact Assessment (EIA) has been undertaken and an Environmental Statement (ES) (TR010034/APP/6.3) prepared to support the application for the Development Consent Order (DCO), under the Planning Act 2008 (the 2008 Act), to authorise the construction, operation and maintenance of the Scheme. The purpose of the EMP is to manage the likely significant construction effects of the Scheme as identified within the ES) and to demonstrate compliance with environmental legislation.

1.1.3 The general process for the management of environmental effects on Highways England (hereafter referred to as the 'Applicant') Schemes is set out in the Design Manual for Roads and Bridges (DMRB) LA 104, Environment assessment and monitoring[1]. More specific advice is provided in the DMRB LA 120 Environment management plans[2]. The standards in DMRB LA 120 has been developed using:

- IEMA, July 2016. EIAG DQD, 'Environmental Impact Assessment Guide to: Delivering Quality Development'; and
- BSI Standards Publication. BS EN ISO 14001, 'Environmental management systems — Requirements with guidance for use'.

1.1.4 The EMP provides an overarching framework for the appointed Principal Designer and appointed Principal Contractor regarding environmental management during Detailed Design, Pre-Construction and Construction stages and ultimately Operation of the Scheme, and identifies the environmental risks associated with the implementation of the Scheme as identified at each stage. The EMP shall provide the following in line with DMRB LA 120:

- a clear audit trail outlining the modifications made from any previous iteration
- identify roles and responsibilities
- identify risks, their associated control measures, compliance and corrective actions
- establish procedures for communication, monitoring, audit mechanisms and reporting of control measures.

[1] DMRB LA 104 Environment assessment and monitoring, Revision 1 (August 2020) URL: https://www.standardsforhighways.co.uk/prod/attachments/0f6e0b6a-d08e-4673-8691-cab564d4a60a
[2] DMRB LA 120 Environment management plans, Revision 1 (March 2020) URL: https://www.standardsforhighways.co.uk/dmrb/search/a3a99422-41d4-4ca1-bd9e-eb89063c7134

1.1.5 The predicted environmental effects of the Scheme identified in the ES and the related actions and mitigation measures in the Register of Environmental Actions and Commitments (REAC) (TR010034/APP/7.3) have formed the basis for developing this EMP. Where it is confirmed that an enhancement can be delivered as part of the Scheme it will also be included within the REAC.

1.1.6 The EMP will be refined and updated when the design and construction plans are finalised and additional information comes to light, which will ensure any necessary changes to the proposed mitigation and management of environmental effects are captured.

1.1.7 Prior to the commencement of construction, the EMP will be made fully comprehensive to form the EMP (Second iteration), taking account of Detailed Design and construction planning and (in the case of the Scheme) the outcome of the DCO process. The EMP (Second iteration) will be maintained and revised during the construction period to take account of any changes in design or external factors such as regulations and standards, any unforeseen circumstances as they arise, such as new protected species, invasive species or new archaeological finds, and any failings in environmental performance identified from routine inspections and audits.

1.1.8 The EMP will be managed alongside the appointed Principal Contractor's generic and site-specific environmental management plan and systems, meeting ISO14001 requirements. The EMP (Second iteration) will be implemented during the Construction stage. It is a live document and must be maintained and updated throughout the Construction of the Scheme by the Principal Contractor. Environmental mitigation measures identified must be followed by all parties. At Construction, Commissioning and Handover stage, the EMP (Third iteration) builds on the construction EMP refined at the end of the construction stage to support future management and operation.

1.1.9 The preparation of the EMP (Second iteration) and EMP (Third iteration) will be secured through DCO Requirement 4.

Structure of the EMP (First iteration)

1.1.10 The structure of the EMP (First iteration) is as follows:

- Chapter 1: provides an overview of the purpose of the EMP, the Scheme and its objectives
- Chapter 2: describes the roles and responsibility of the Scheme team for environmental management
- Chapter 3 refers to the REAC. This is a document which demonstrates how the action is to be implemented/ achieved, including details of risk management and the responsible person for the specific actions. The full REAC is provided in a separate document (TR010034/APP/7.3)
- Chapter 4 provides the details of anticipated consents/permissions required to deliver the EMP

- Chapter 5 provides a confirmation regarding submission of environmental asset data and as-built drawings
- Chapter 6 provides details of maintenance and EMP monitoring activities
- Chapter 7 provides the induction, training and briefing procedures for staff
- Chapter 8 provides the references and glossary

1.1.11 The EMP (First iteration) should also be read alongside the REAC (TR010034/APP/7.3).

1.2 The Scheme

Need for the Scheme

1.2.1 The main Trans-Pennine road route between the Manchester and Sheffield City Regions is the trunk road route consisting of the A57, A628, A616 and A61. This route connects the M67 at Mottram-in-Longdendale towards the east of the Manchester City Region with the M1 in the north west of the Sheffield City Region.

1.2.2 The Trans-Pennine Upgrade (TPU) was made up of a series of measures announced in March 2015's Road Investment Strategy (RIS) for the 2015-2020[3] road period, published by the Department for Transport (DfT). A second RIS (RIS2) has since been published, which covers the 2020-2025 period. The TPU aimed to address longstanding issues of connectivity, congestion, reliability and safety with regard to the strategic Trans-Pennine routes between the M67 at Mottram and the M1 J36 and J35A north of Sheffield. The current Scheme (the A57 Link Roads) was part of this wider package of work.

1.2.3 The Scheme has been developed to improve journeys between Manchester and Sheffield. The current A57 around Mottram-in-Longdendale suffers from congestion which limits journey time reliability. This restricts economic growth due to the delays experienced by commuters and business users alike. This has a negative effect on local businesses and employment opportunities. The congestion also results in rat running through smaller towns and villages, as vehicles attempt to reduce queuing times. Much of this heavy traffic travels along local roads, which disrupts the lives of communities, and makes it difficult and potentially unsafe for pedestrians to cross the roads. It is likely that these issues would get worse with time, if significant improvements aren't made.

Scheme location

1.2.4 Most of the Scheme is located within Mottram-in-Longdendale, on the eastern edge of the Manchester conurbation adjacent to and within the settlements of Hattersley, Mottram-in-Longdendale, Hollingworth and Woolley Bridge. The Scheme connects the M67 at the west to the A57 Brookfield Road in the east and crosses through surrounding, predominately pasture, agricultural land within

[3] https://www.gov.uk/government/collections/road-investment-strategy

the Harrop Edge and Mottram Moor valley sides and within the River Etherow valley.

1.2.5 The Scheme lies mainly within the administrative boundaries of Tameside Metropolitan Borough Council (MBC), up until to the proposed River Etherow Bridge. To the east of this, the Scheme crosses over the boundary with High Peak Borough Council and Derbyshire County Council.

1.2.6 A plan showing the key environmental constraints is provided in Annex A of this EMP.

Scheme description

1.2.7 A full description of the Scheme can be found in Chapter 2 of the ES (TR010034/APP/6.3).

1.2.8 The Scheme includes the following components:

- A new offline bypass of 1.12 miles (1.8 km) of dual carriageway road connecting the M67 Junction 4 to A57(T) Mottram Moor Junction
- A new offline bypass of 0.81 miles (1.3 km) of single carriageway connecting the A57(T) Mottram Moor to the A57 Woolley Bridge
- Creation of two new junctions, Mottram Moor Junction and Woolley Bridge Junction and improvement works to the existing M67 Junction 4
- Creation of five new structures (Old Mill Farm Underpass, Roe Cross Road Overbridge, Mottram Underpass, Carrhouse Lane Underpass and River Etherow Bridge)
- One main temporary construction compound area, located on agricultural land to the east of the M67 Junction 4
- Detrunking, including safety measures from the M67 Junction 4 to Mottram Back Moor Junction, to be agreed with Tameside MBC.
- Safety measures and improvements to the A57 from Mottram Moor Junction to Gun Inn Junction and from Gun Inn Junction to Woolley Bridge Junction, to be agreed with Tameside MBC.

1.2.9 In addition to the components listed above, a number of buildings will require demolition in order to construct the Scheme. These are detailed within The Scheme chapter (Chapter 2) the ES and comprise a range of domestic and industrial structures.

Construction programme

1.2.10 The construction programme is based on a forecast start of works in autumn 2022, leading to the Scheme opening in spring 2025. The programme has been developed by a team of construction experts who have used past experience and industry benchmark data to both estimate durations and develop the logic for the programme. The construction activities and programme would be subject to modification during both the detailed design and the construction phases. The

timings indicated are a best- estimate, based on the present situation and a worst-case scenario. The construction programme for the main works will have a duration of approximately 28 months. At substantial completion, the works will be completed to a sufficient standard for the Scheme to be opened to live traffic. Some minor works may still be required following substantial completion (e.g. demobilisation and landscaping works), which has been considered in the assessment of the opening year.

1.2.11 The main construction works will be divided into 5 main phases. Pre-phases including early works, site mobilisation, utilities diversions and ecological mitigation and compensation works would also occur. A detailed construction programme will not be available until the Detailed Design stage to confirm the duration of the works.

1.2.12 The dates in this section reflect the assumed construction sequence for the assessment of effects.

Phase 1 – Autumn 2022 to Spring 2023

1.2.13 The first works to be undertaken for the construction of the Scheme include the following activities:

- Early works; including site clearance, site enabling work and environmental mitigation works, mobilisation of compound areas and temporary welfare facilities, as required
- Archaeology trial trenching and test pits
- Properties above Mottram Underpass to be demolished and clearance of any obstructions ready for underpass piling during the later stages of Phase 1
- Old Hall Lane would be closed, and Old Road would be diverted by approximately 50 m to Roe Cross Road just north of the Scheme
- Ground improvement to the land west of the River Etherow most likely using pre-cast concrete piles driven through the weak alluvium.

1.2.14 Based on this construction sequence, it is not expected that there would be any changes to traffic flow on the A57 as a result of the first phase of works.

Phase 2: Spring 2023 to Autumn 2023

- Works for the construction of Mottram Underpass would continue with piling and construction of the reinforced concrete slabs. Commencement of, excavation of the main cutting in the former Mottram Showground, east of Mottram Underpass
- The fill material from the cutting east of Mottram Underpass would be transported to the prepared ground, forming the embankment west of the River Etherow

- Carrhouse Lane Underpass would be constructed to enable the existing lane to be realigned to its new location and completion of the embankment on each side
- Old Mill Farm Underpass would be constructed in advance of the embankment fill material in Phase 4.

1.2.15 To permit these works, traffic would be restricted on Mottram Moor; eastbound traffic would be reduced to one lane but westbound would continue with two lanes. An at-grade plant crossing would be used to move fill from west to east of the Scheme.

Phase 3: Autumn 2023 to Spring 2024

- The construction of Mottram Underpass would be completed during this phase, which would require the temporary realignment of Roe Cross Road
- The junction modifications to M67 Junction 4 would commence. Two lanes of traffic would be maintained during peak hours on the roundabout whilst these works go ahead
- The offline sections of Mottram Moor Junction would be constructed
- The tie-in of the Scheme to Woolley Lane would be completed. There would be no restrictions to the existing road network during peak hours and a single lane maintained during off-peak, with the use of traffic light control to complete these works
- Landscape tree planting would be undertaken in selected areas.

Phase 4: Spring 2024 to Autumn 2024

- The Mottram Underpass main excavation would commence with the material moving west to complete the mainline from the M67 Junction 4 to Mottram Underpass
- Road surfacing and street furniture would be installed along the length of the Scheme
- Mottram Moor Junction completed with diversion of the traffic onto the new junction, with conversion of the existing carriageway into access to the local properties
- Landscaping would continue across the whole Scheme, with final topsoil placed, temporary storage areas removed and attenuation ponds completed, ready for opening.

1.2.16 It is not expected that there would be any restrictions to the existing road network during this phase.

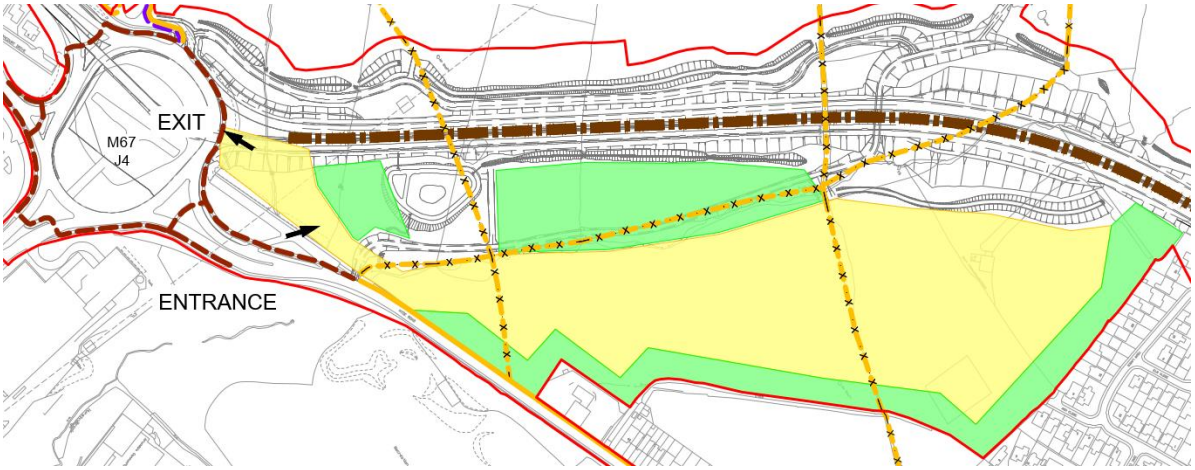
Phase 5: Autumn 2024 to Spring 2025

- The de-trunking works to the existing A57 would be completed
- Over winter planting of replacement trees would take place and planting of other bare root stock, as required.

Construction compound

1.2.17 One main compound (Insert 1) would be required for the construction of the Scheme. Access into the compound will be through the existing layby just to the east of the M67 Junction 4 interchange and exit from the compound will be onto the M67 Junction 4 interchange. This will allow the majority of deliveries to and from the office and stores to be made without increasing traffic through the village.

1.2.18 The construction compound is expected to accommodate office and welfare facilities, plant and machinery parking, storage facilities, maintenance areas and workshops. The site compound will be constructed, as the demonstrated by the yellow shaded area The top soil bund is shaded green in Insert 1 and present to shield the compound from the village. Topsoil from the compound area to make a 3 m high bund around the compound area would be used to separate the compound from the back gardens of the residential properties on Hyde Road, Littlefields, Meadowcroft, Ash Close and Four Lanes. The 3 m bund would be made up of 1 m fill material, with 2 m of topsoil on top to ensure the compound office building is sufficiently screened.



Insert 1 Site Compound (extract from Temporary Works Plan (TR010034/APP/2.8))

1.2.19 Temporary welfare facilities would also be required adjacent to the two structures, Mottram Underpass and River Etherow Bridge, as shown on the Temporary Works Plans (TR010034/APP/2.8).

1.2.20 Following pre-construction species surveys and site clearance, in accordance with the EMP, the establishment of the main construction compound would involve the following activities:

- Defining the boundary using fencing
- Soil stripping and storing this material in a 3 m high bund around the perimeter of the compound to screen the residential properties and placing and compacting stone for compound base
- Setting up drainage as required, including perimeter drainage

- Creating access tracks with bound material surfacing if required
- Setting up power requirements including generators
- Setting up offices, welfare facilities and wheel washing
- Installation of security/access gates.

1.2.21 The compound area is classified as temporary land take and would therefore be returned to the previous land use after decommissioning and restored to a condition equivalent to its original (i.e. for use for farming activities), in agreement with landowners.

1.3 Scheme Objectives

1.3.1 The objectives of the Scheme are as follows:

- **Connectivity** – by reducing congestion and improving the reliability of people's journeys through Mottram-in-Longdendale, Hollingworth and Tintwistle and also between the Manchester and Sheffield city regions
- **Environmental** – by improving air quality and reducing noise levels in certain areas, through reduced congestion and removal of traffic from residential areas. The Scheme is also being designed to avoid unacceptable impacts on the natural environment and landscape in the Peak District National Park
- **Societal** – by re-connecting local communities along the Trans-Pennine route
- **Capacity** – by reducing delays and queues that occur during busy periods and improving the performance of junctions on the route.

1.3.2 The following targets have also been set for the Scheme by the appointed Principal Designer and Contractor

- All arisings from site clearance activities during construction (e.g. vegetation clearance) are to be recycled and used on site elsewhere
- For procurement the of sub-contractors during the construction phase, the following targets will be set
  - Use of Small Medium Enterprises, where possible with a focus on social and minority enterprises
  - Use of Local supply chains within the region local to the Scheme, where possible
- Target a cut/ fill balance to avoid the import and export of materials and prevent the number of vehicles travelling to and from site.
- Ensure all timber, concrete and steel products sourced for the Scheme is certified as legally and responsibly sourced.
- Reduce primary material use through a commitment to achieve the 30% recycled content target for the region, which supports responsible material procurement.

- To support the recycling and recovery aspect of the waste hierarchy, the Principal Contractor has committed to recycle or recover 95% of wastes that leave site, therefore diverting them from landfill. This commitment will be supported through a clearly laid out waste storage area in the site compound with containers for segregated waste types. When wastes are removed they will be managed as closed as possible to site to support the proximity principle.
- Support reductions in carbon emission by adhering to the principles of the certification PAS 2080:2016[4]. This will help the Scheme reduce its carbon emissions across the whole value chain through effective and innovative design, construction and use. It would also ensure that carbon is consistently and transparently quantified at the key stages of the design process.

Highways England objectives

1.3.3 Alongside the Scheme objectives, Highways England's Biodiversity Plan, published[5] in June 2015, details the aims and obligations it has to deliver as part of the Government's RIS, in terms of biodiversity. The Applicant is expected to ensure the design of its road schemes reduces impacts on the environment by delivering a reduction in habitat fragmentation and enhancing biodiversity value. Habitats should be actively managed to ensure broad species diversity and reduced fragmentation.

1.3.4 Furthermore, Highways England's Biodiversity Plan, published[6] in June 2015, details the aims and obligations it has to deliver as part of the Government's RIS, in terms of biodiversity. The Applicant is expected to ensure the design of its road schemes reduces impacts on the environment by delivering a reduction in habitat fragmentation and enhancing biodiversity value. Habitats should be actively managed to ensure broad species diversity and reduced fragmentation.

1.3.5 This is further supported by Highways England's Licence (April 2015)[7] which sets out both statutory directions and statutory guidance issued by the Secretary of State for the Applicant to follow when undertaking their duties when managing the strategic road network. The Applicant is required to act in a manner which has due regard to the environment (paragraphs 4.2g, 4.2h and 5.23) and sustainable development and design (paragraph 5.25). This Licence includes requirements for the Applicant to promote sustainable development through the design and seek to minimise carbon emissions and other greenhouse gases during operation.

1.3.6 In accordance with Highways England's Biodiversity Plan 2015, all schemes included within the RIS must demonstrate through core design how biodiversity delivery has been maximised across the Applicant's activities and continue to

[4] https://www.carbontrust.com/what-we-do/assurance-and-certification/pas-2080-carbon-management-in-infrastructure
[5] https://www.gov.uk/government/publications/biodiversity-plan
[6] https://www.gov.uk/government/publications/biodiversity-plan
[7] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/431389/strategic-highways-licence.pdf

progress towards the Applicant's target of delivering a net gain in biodiversity, by 2040.

1.3.7 In addition, the Highways England Delivery Plan 2015-2020 sets out its own approach to meeting the key performance indicators identified within RIS of reducing net loss of biodiversity and more recently in the Highways England Delivery Plan 2020-2025[8] (RIS2) having a longer- term ambition of ensuring no net loss across the Applicant's activities.

1.3.8 The following performance targets are also identified:

- To mitigate noise in at least 7,500 households in mitigated Noise Important Areas (NIAs), defined by Defra, using funding from the Environment and Wellbeing Fund during the second road period
- Bring links agreed with the Department for Transport and based on their Pollution Climate Mapping model, into compliance with legal NO_2 limits in the shortest timescales possible
- Reduce Highways England's carbon emissions as a result of electricity consumption, fuel use and other day to day operational activities during the second road period, to levels defined by baselining and target setting activities in 2020-21.
- Address flooding and pollution from highway runoff through measures to attenuate and improve flood resilience on the strategic road network and to improve water quality

1.3.9 Finally, Highways England published ''The Road to Good Design'[9] in January 2018, which sets out design principles for delivering projects with the aspiration to *'deliver safer, better, beautiful roads which connect people and connect our country'*, which have been considered within the development of the Scheme design. The design has also been developed to respond to the design principles set out in the Road to Good Design published by Highways England in 2018 and DMRB GG 103 'Introduction and general requirements for sustainable development and design'.

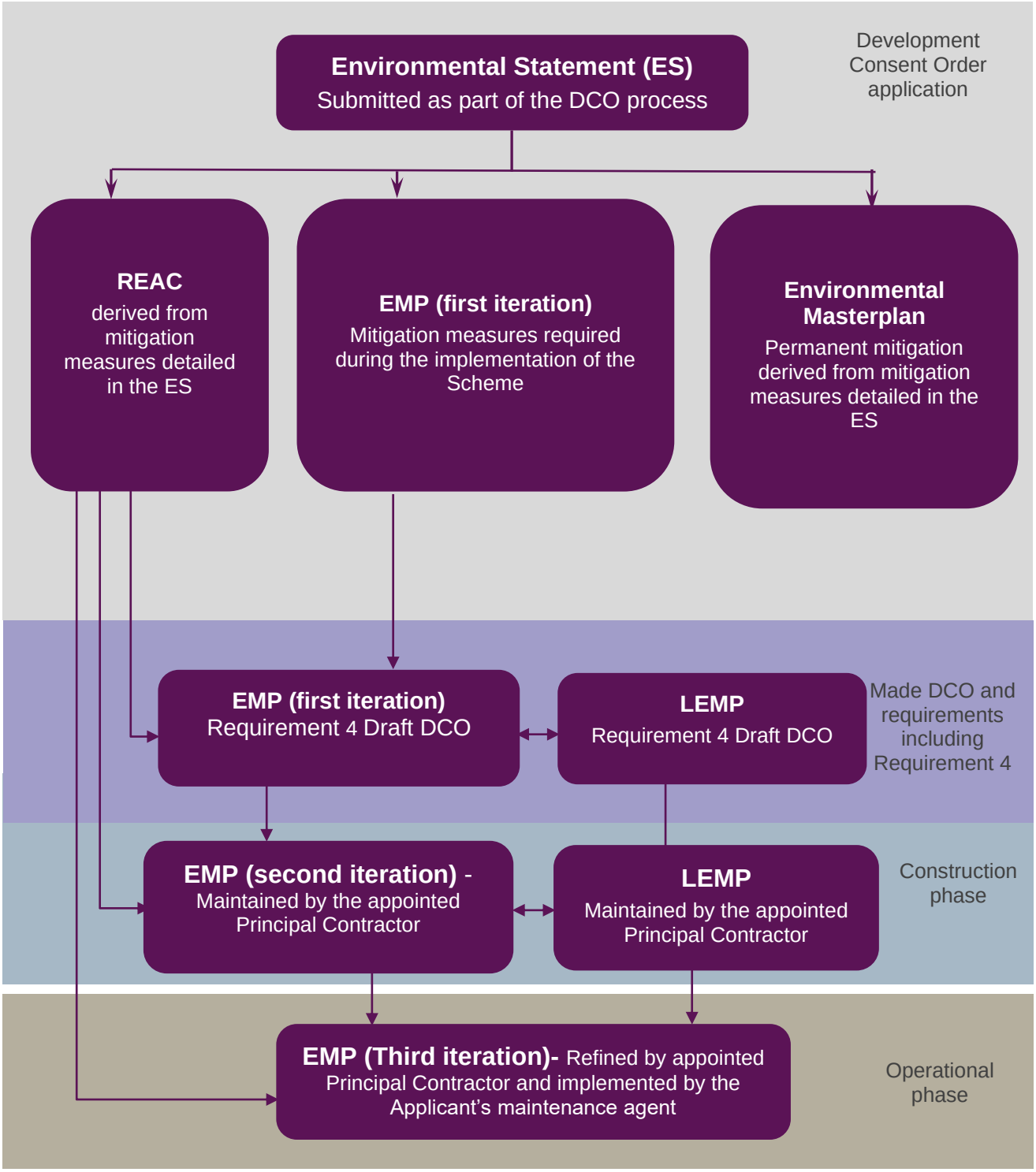
1.4 Environmental Management Approach

1.4.1 To fulfil the aims of the EMP and meet all environmental commitments, it is important to have a clear approach and structure for environmental management that outlines roles and responsibilities, required communication, appropriate hold points and all the mitigation, conditions, consents, licences and good working practices that need to be implemented. To this end, the EMP should set out a clear process whereby all these commitments are properly documented, agreed and implemented throughout the lifespan of the Scheme. This process is outlined in Figure 1.2

[8] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/910866/5-year_Delivery_Plan_2020-2025_FINAL.pdf
[9] Good_road_design_Jan_18.pdf (publishing.service.gov.uk)

1.4.2 The process of environmental management for the Scheme is outlined below.

Figure 1.1: Environmental Management Process



1.4.3 Information on required environmental actions and mitigation commitments contained within the ES, are captured in the REAC (TR010034/APP/7.3) to ensure such items are adequately communicated and addressed during Detailed Design and construction. Where appropriate, such aspects will also be added to design information (e.g. landscape specifications) to highlight issues/protection areas where necessary.

1.4.4 This EMP draws together all relevant environmental information relating to the new works. These include, but are not necessarily limited to:

- The actions and both essential and embedded mitigation measures set out in the ES and REAC
- Any further mitigation measures agreed during the Detailed Design stage
- Any other requirements relating to licences, permits and consents not included as part of the planning consent
- Environmental best practice measures.

1.4.5 The approach to environmental design and management will be in accordance with the approach and principles provided by the following DMRB standards:

- LD 117 Landscape design
- LD 118 Biodiversity design
- LD 119 Roadside environmental mitigation and enhancement
- LD 120 Environmental management plans

1.4.6 The EMP approved in accordance with Requirement 4 of the DCO will draw together all relevant environmental information relating to the Scheme, including, but not limited to:

- Actions and mitigation measures set out in the ES and REAC.
- Relevant Requirements set out in Schedule 2 of the DCO as granted.
- Any additional mitigation measures agreed post publication of the DCO.
- Any other commitments agreed between Highways England and specific landowners or occupiers.
- Any other requirements relating to licences, permits and consents not included as part of the DCO.
- Environmental best practice measures including those set out by statutory agencies

Environmental Management Plans and Method Statements

1.4.7 Environmental Method Statements and Management Plans are key documents which ensure that the construction-related mitigation measures and actions set out in the REAC (TR010034/APP/7.3) are successfully implemented on site. Environmental Method Statements and Management Plans inform the works and the development of associated task-specific Risk Assessments.

1.4.8 It is expected that some or all of the following Environmental Method Statements and Management Plans will be prepared / finalised, as appropriate, for the Scheme as part of the EMP (Second iteration):

- Soil Resource Plan (SRP)– sets out the areas and type of soil to be stripped, haul routes, the methods to be used, and the location, type and management of each soil stockpile to help protect and enhance soil resources on site. The Outline SRP is contained in Annex B.1 of this document. The Outline SRP will be updated to become the Detailed SRP and will be included in the EMP (Second iteration) prior to construction commencing.
- Noise and Vibration Management Plan (NVMP) – outlines how construction noise and vibration will be managed throughout the construction of the Scheme including any noise limits agreed with High Peak Borough Council and Tameside Metropolitan Borough Council. The Outline NVMP is contained in Annex B.2 of this document. The Outline NVMP will be updated to become the Detailed NVMP and will be included in the EMP (Second iteration) prior to construction commencing.
- Pollution Prevention Plan (PPP) – sets out best practice pollution prevention guidelines and appropriate control measures to protect from pollution events. The plan will include for activities such as excavation and dewatering, storage of fuels, chemicals and oils, vehicle washing, pollution control and emergency contingency. The PPP will be prepared and included in the EMP (Second iteration).
- Emergency Spillage Response Plan – sets out the procedures for dealing with emergency situations involving loss of containment. The Emergency Spillage Response Plan will be prepared and included in the EMP (Second iteration).
- Emergency Flood Response Plan – sets out the principles of a response to a significant flood during construction to ensure a coordinated response in the event of an emergency situation. The Emergency Flood Response Plan will be prepared and included in the EMP (Second iteration).
- Dewatering Management Plan – sets out the approach / method for the removal of water below the existing water table during construction of the Scheme. The Outline Dewatering Management Plan is contained in Annex B.8 of this document and will be developed further in consultation/agreement with the Environment Agency to become the Detailed Dewatering Management Plan. The Outline Dewatering Management Plan will be updated to become the Detailed Dewatering Management Plan and will be included in the EMP (Second iteration) prior to construction commencing.
- Construction Water Management Plan (CWMP) – outlines how water will be managed during construction. It also identifies arrangements and methods for dealing with surface water arising during construction. The Outline CWMP is contained in Annex B.3 of this document. The Outline CWMP will be updated to become the Detailed CWMP and will be included in the EMP (Second iteration) prior to construction commencing.
- Site Waste Management Plan (SWMP) – provides a structured approach to minimising waste production on site and good practice waste management during the construction of the Scheme. The Outline SWMP is contained in Annex B.4 of this document. The Outline SWMP will be updated to become

the Detailed SWMP and will be included in the EMP (Second iteration) prior to construction commencing.

- Materials Management Plan (MMP) – sets out the relevant regulations and approach for dealing with excavated ground materials as a result of the Scheme. The Outline MMP is contained in Annex B.5 of this document. The Outline MMP will be updated to become the Detailed MMP and will be included in the EMP (Second iteration) prior to construction commencing.
- Asbestos Management Plan – sets out the measures in place to manage asbestos that may potentially be present on site to prevent persons being exposed. The Asbestos Management Plan will be prepared and included in the EMP (Second iteration).
- Arboricultural Method Statement – details how construction works will be carried out close to trees without causing damage to the crown or the root system. The Arboricultural Method Statement will be prepared and included in the EMP (Second iteration).
- Community Engagement Plan (CEP)– outlines the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management. The CEP is contained in Annex B.6 of this document. The Outline CEP will be updated to become the Detailed CEP and will be included in the EMP (Second iteration) prior to construction commencing.
- Nuisance Management Plan (NMP)– sets out how nuisances during construction such as fugitive dust will be dealt with. The Outline NMP is contained in Annex B.7 of this document. The Outline NMP will be updated to become the Detailed NMP and will be included in the EMP (Second iteration) prior to construction commencing.
- Ecological Management Plans – sets out how protected species will be managed during construction should they be present. The Ecological Management Plans will be prepared and included in the EMP (Second iteration).
- Biosecurity Management Plan – prevent the spread of invasive species during the constructional stage through ensuring best practice principles are adhered to. The Biosecurity Management Plan will be prepared and included in the EMP (Second iteration).
- Invasive Non-Native Species Management Plan - ensure that these species will either be eradicated prior to any works commencing, or fully avoided during the duration of the works. The Invasive Non-Native Species Management Plan will be prepared and included in the EMP (Second iteration).
- Carbon Management Plan (CMP) – sets out how whole life carbon emissions will be managed and reduced through the design and construction stages by adhering to the principles of the PAS 2080:2016 – Carbon Management in Infrastructure Verification certification. The Outline CMP is contained in Annex B.9 of this document. The Outline CMP will be updated to become the Detailed CMP and will be included in the EMP (Second iteration) prior to construction commencing.
- Design Approach Document – sets out how the Scheme has had due regard to good design principles and the local environment has been an integral part of the Scheme. This document has been prepared to support the DCO

examination and is included in Annex C 'Environmental Method Statements' as Annex C.1. The detailed Design Principles Document and will be included in the EMP (Second iteration) prior to construction commencing.

1.4.9 Note: the appointed Principal Contractor is to prepare / finalise and include detailed Environmental Method Statements and Management Plans in Annex B, C and D of the EMP (Second iteration) as required.

1.4.10 The REAC identifies the environmental commitments made when undertaking the environmental assessment to address the potential environmental effects of the Scheme. The EMP (First iteration) document will be refined at the Detailed Design stage and included in Section 3 of the EMP (Second iteration) by the appointed Principal Contractor. As the Scheme progresses, all dates and signatures for completed action / commitments shall be completed.

1.4.11 Unless otherwise stated, the above documents will be produced by the appointed Principal Designer and / or appointed Principal Contractor during the Detailed Design stage, and each shall be in place prior to the Construction stage commencing. The REAC will clearly state who is responsible for each Environmental Method Statement or Management Plan at each stage. All Environmental Method Statements and Management Plans will be developed to their full detail for the approved EMP (Second iteration) during the Detailed Design and Construction stages in accordance with Requirement 4 of the DCO.

1.4.12 All Environmental Method Statements and Management Plans will be further developed to their full detail for the EMP (Third iteration) during the Detailed Design and Construction stages.

1.4.13 Environmental Method Statements and Management Plans are live documents that are subject to updating and refinement as required changing needs of the works during construction.

1.4.14 In addition, the following Environmental Method Statements and Management Plans will be prepared for the Scheme as standalone documents:

- Archaeological Fieldwork Strategy (which will inform a Written Scheme of Investigation secured under Requirement 4 of DCO)
- Landscape and Ecological Management and Monitoring Plan (LEMP) (TR010034/EXAM/9.40) (secured under Requirement 4 of the Draft Development Consent Order (TR010034/APP/3.1)).

1.4.15 The Outline LEMP has been submitted as a standalone document for the DCO examination (TR010034/EXAM/9.40). This will be updated to become the Detailed LEMP prior to construction commencing.

1.4.16 Requirement 4 of the draft DCO sets out that relevant local authorities, the local highway authority and the Environment Agency will be consulted on the EMP (Second iteration) on relevant matters before it is submitted to the Secretary of State for Transport for approval. This will include all the Method Statements and

Management Plans (whether included in the Annexes or the standalone documents that are committed to by the EMP and REAC).

Evaluation of change process and register

1.4.17 Annex E of the EMP (Second iteration) will provide a copy of the Evaluation of Change Register. The purpose of this document is to provide transparency and support the evaluation of changes in assessment assumptions, project design, or mitigation and monitoring commitments set out in the Environmental Management Plan for the Scheme. This product will help to demonstrate consent compliance. Annex E of this EMP (First iteration) provides on outline table to show the process to follow, together with instructions to indicate inputs required.

2. Scheme Team Roles and Responsibilities

2.1 Competent Expert Statement

2.1.1 The environmental specialists who have authored this report are committed environmental professionals who are appropriately qualified and have a demonstrable knowledge, experience and competence in the environmental management field. They have worked in close collaboration with designers and engineers through the various stages of the Scheme's development to maximise the opportunity to avoid or reduce adverse environmental effects early in the design process and identified mitigation measures to address those effects that cannot be avoided or reduced at source. The production of this EMP (First iteration) report has been overseen by the Environmental Lead for the Applicant, who is a full member of the Institute of Environmental Management and Assessment (IEMA) and a Chartered Environmentalist (CEnv).

2.2 Roles and responsibilities involved in the delivery of the EMP

2.2.1 The site-based roles and responsibilities in relation to environmental management are summarised in Table 2.1 and Table 2.2. The appointed Principal Contractor 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 relevant Scheme documents and site files.

Project Management Organisation

2.2.2 The Applicant, or the Project Management Consultant appointed by the Applicant, will be responsible for overseeing management of the Scheme. Some of the site supervision roles such as the Engineering Clerk of Works and procurement specialist consultants to supervise, monitor or check the appointed Principal Contractor's Method Statements including sensitive activities, will be delegated where required by the Applicant.

2.2.3 The appointed Principal Contractor has control over the Construction stage of the Scheme however, they have also been involved in the Preliminary Design stage of the Scheme. The appointed Principal Contractor 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 relevant Scheme documents and site files.

2.2.4 A management structure that includes an organisational chart encompassing all staff responsible for environmental work is to be included within the EMP (Second iteration). This will set out the respective roles and responsibilities with regard to the environment and identify the nominated Construction

Environmental Manager. Illustrative key roles and responsibilities are set out in Table 2.1, below.

Table 2.1 Environmental Management Responsibilities

Role	Main Environmental Responsibilities
The Applicant's Project Manager	Overseeing implementation of whole Scheme and the individuals undertaking specific roles and duties. To be reported to as per contract requirements and internal organisation Environmental Management Systems
Principal Contractor's Construction Project Manager	Responsible for management of the construction phase of the Scheme. Has overall responsibility for the environmental performance of the Scheme. Communication with the Applicant and the relevant statutory environmental bodies on all environmental matters (as they arise).
Principal Contractor DCO Manager	Responsible for overseeing and maintaining the commitments register. Reporting and liaison to the local authorities. Produce and agree a process for implementing the requirements of the DCO with the local authorities. Assessing requirements of changes to the design approved by the DCO. Act as the focal contact for all DCO related queries and requests for information. Provide training and briefings to relevant staff on the implementation of the DCO. Monitor compliance with the DCO requirements. Assist in the review of design and construction methodology changes. Monitor compliances with the DCO. Liaise with the Principal Contractor Planner to enable the efficient running of the construction programme Work with the Principal Contractor Community Liaison Manager to respond to complaints, community liaison, and stakeholder consultations as outlined in DCO.
Principal Contractor's Construction Environmental Manager	Ensuring compliance with environmental legislation, consents, objectives, targets and other environmental commitments, including those arising from the ES Maintaining and updating of all environmental documentation, including refining the EMP and progressing it through the required iterations in accordance with DMRB LA 120 Management of environmental specialists and monitoring compliance of construction activities in line with the Environmental Method Statements and Management Plans and the relevant environmental legislation / licences, reviewing and developing the Environmental Method Statements and Management Plans throughout the construction period, and acting as the focal point of contact for all environmental issues on site Liaison with relevant consultees / stakeholders Accompany statutory authorities on site visits (with Environmental Clerk of Works (ECoW) if necessary) Compiling applications for unexpected authorisations with assistance of ECoW if necessary

Role	Main Environmental Responsibilities
	Identification of key environmental concerns on site as Scheme develops Instruction and confirmation of key requirements of each section on site as job progresses to site personnel Assisting with the delivery of environmental training to the workforce Assisting in review of method statements Investigation of environmental incidents Assessing and checking survey results and updating databases, Environmental Method Statements and Management Plans etc. with any new information Identification of cost savings and best practice activities Ongoing liaison with the appointed Principal Contractor site supervisors, site management team, and general construction workers
Principal Contractor's Environmental Clerk of Works	Supporting the Scheme team in delivering the environmental components of the works during the construction phase Recording the progress of the environmental works Delivering environmental training to the workforce Monitoring and supervising construction activities in relation to environmental aspects Walkover of all activities on the site and ongoing monitoring of works area to ensure compliance with key environmental legislation compliance and control plans Assisting in review of method statements Identification of key environmental concerns on site as Scheme develops Instruction and confirmation of key requirements of each section on site as job progresses to site personnel Monitoring and updating Environmental Manager on the progress of pre-construction surveys Assisting in monthly formal audits with Environmental Manager Assessing and checking survey results and updating databases, Environmental Method Statements and Management Plans etc. with any new information Identification of cost savings and best practice activities Immediate reporting of environmental incidents to the appointed Principal Contractor's Safety Health and Environment (SHE) department Ongoing liaison with the appointed Principal Contractor's site supervisors, site manager, and general construction workers Providing daily updates to Environmental Manager on site progress, compliance, issues, problems, threats, opportunities, successes, etc Accompanying statutory authorities on site visits (with Environmental Manager if necessary)
Environmental Specialists	As required, archaeologists, ecologists, geotechnical engineers, hydrologists, waste management, arboriculturist, noise and vibration, and others as required will be responsible for undertaking pre-construction surveys and watching briefs, as well as providing advice on specific issues (as they arise) throughout the construction phase. Landscape Manager to supervise planting and aftercare.

Role	Main Environmental Responsibilities
Principal Contractor Community Liaison Manager	Communications with the public and interested parties, outreach and education, where appropriate. Key liaison with all of the above and the Applicant's Public Liaison Officer: • Maintain and develop Community Relations Strategy. • Maintain comment and enquiries log, disseminate identified comments for response and implementation of action.

2.3 Key Scheme Environmental Contacts

2.3.1 Overseeing management of the Scheme will be directed by the Applicant. The Applicant may delegate some site supervision roles and procure specialist consultants to supervise, monitor or check the appointed Principal Contractor's procedures for sensitive activities where required.

2.3.2 Individual names and contact details for the Applicant and appointed Principal Contractor will be included in the EMP (Second iteration) by the appointed Principal Contractor for the construction stage.

2.3.3 The key Scheme contacts and responsibilities for the Applicant and the appointed Principal Contractor are listed in Table 2.2.

[Note: The details will need to be confirmed and inserted by the Applicant and the appointed Principal Contractor into Table 2.2 prior to commencement of the Construction stage.]

Table 2.2 General site contacts and responsibilities

Role	Scheme Stage requirement	Contact and organisation	Phone and email	Competent Expert Statement
The Applicant's Project Manager	TBC	TBC	TBC	TBC
Principal Contractor Construction Project Manager	TBC	TBC	TBC	TBC
Principal Contractor DCO Manager	TBC	TBC	TBC	TBC
Principal Contractor Environmental Manager	TBC	TBC	TBC	TBC
Principal Contractor Environmental Clerk of Works	TBC	TBC	TBC	TBC

Role	Scheme Stage requirement	Contact and organisation	Phone and email	Competent Expert Statement
Principal Contractor Environmental Specialist(s)	TBC	TBC	TBC	TBC
Principal Contractor Community Liaison Officer	TBC	TBC	TBC	TBC

2.4 Lines of Communication

2.4.1 The appointed Principal Contractor will direct all queries regarding the EMP and actions within it through the Applicant prior to initial contact with statutory consultees (e.g. the Environment Agency, Natural England, Greater Manchester Archaeology Advisory Service (GMAAS), Historic England and relevant Local Planning Authorities). The appointed Principal Contractor will typically then act as the primary contact with statutory consultees leading up to and during the construction phase.

2.4.2 The appointed Principal Contractor will establish and maintain procedures for internal communications between the various levels and functions of the team during construction. Internal communications include:

- Advising of non-conformances to relevant managers
- Communicating environmental commitments to the construction team
- Communicating the environmental policy to the construction team
- Raising awareness of environmental issues to the construction team
- Reporting incidents to relevant managers

2.4.3 The appointed Principal Contractor's Community Liaison Officer will document and respond to any relevant communications from external interested parties during construction. External communications may include, but will not necessarily be limited to:

- Dealing with complaints from members of the public
- Dealing with the media

2.5 Pre-construction detailed Principal Contractor responsibilities

2.5.1 The appointed Principal Contractor is responsible for approving the appointment of the site Environmental Manager, ECoW and any environmental specialists prior to any work starting on site.

2.5.2 The appointed Principal Contractor is responsible for the following prior to construction commencement:

- Developing this EMP
- Defining roles and responsibilities for their own and their key sub-contractors' personnel relating to environmental issues
- Developing and communicating an environmental training plan covering all personnel
- Developing a programme of internal and sub-contractor inspections/monitoring
- Developing Scheme-specific emergency procedures for environmental incidents
- Finalising and implementing a programme for works to allow all preconstruction surveys to be arranged and completed within the required timeframe
- Agreeing a non-compliance reporting procedure with the Applicant to manage any environmental incidents or non-compliance events for the Scheme
- Ensuring all personnel are made aware of all relevant risks and plans
- Developing the required Environmental Method Statements and Management Plans. These will be updated as required up to construction commencement to reflect any new, relevant information provided by the Applicant or other statutory consultees (e.g. further consent conditions, landowner agreements) or through design development, construction planning, preconstruction surveys, etc.

2.5.3 Immediately prior to construction, the Applicant's Employer's Agent (or equivalent) and the appointed Principal Contractor nominated person will undertake a site condition survey of each section of the Scheme. The condition survey will include a photographic record. This will be used to ensure effective reinstatement following completion of the works and provide a 'baseline' to assess any compensation claims with landowners.

2.6 Construction detailed Principal Contractor responsibilities

2.6.1 The appointed Principal Contractor is responsible on site for delivering the construction phase commitments in the ES and REAC, as described within the Scheme design construction models, drawings and specifications, and controlled by this EMP.

2.6.2 The appointed Principal Contractor will implement the procedures set out in this EMP with technical advice from competent environmental specialists.

2.6.3 The appointed Principal Contractor are responsible for all their subcontractors on site and for ensuring these sub-contractors comply with the requirements of the EMP. All sub-contractors are bound to the requirements set out within this EMP and will be given a site induction prior to entering the site.

2.6.4 The appointed Principal Contractor are responsible for ensuring that there are no breaches in legislation and that good practice is followed throughout the duration of the construction.

2.6.5 The appointed Principal Contractor must ensure that all on-site works are adequately monitored.

2.6.6 The Risk Assessments & Method Statements (RAMS) and Environmental Method Statements and Management Plans will be used to ensure all environmental commitments are delivered on site. The success of implementing the requirements of the RAMS, Environmental Method Statements and Management Plans and delivery of mitigation measures relating to the Scheme will be the responsibility of the appointed Principal Contractor.

2.6.7 Any improvements or deviations relating to environmental matters required to the RAMS and/or Environmental Method Statements and Management Plans shall be approved by the Environmental Manager and will be subject to the Applicant's consents, where required. These changes will be communicated to relevant personnel at the first available opportunity. The appointed Principal Contractor will provide feedback and information to the Applicant Project Manager and Environmental Advisor on the progress and success in delivering all mitigation and commitments on site. Time intervals for this will be agreed between all parties and shall be either monthly or fortnightly as a minimum depending on the project stage.

2.6.8 The REAC will be updated to demonstrate progress and will be kept by the Scheme for environmental auditing purposes, with updates periodically sent to the relevant management personnel representing the Applicant.

2.6.9 All site personnel have the responsibility and authority to halt works in any activity where environmental commitments are not being successfully delivered or where legal requirements are being breached.

2.6.10 All site personnel will be encouraged to draw attention to any environmental risk or potential environmental risk arising on site (for example, refuelling being carried out too close to a watercourse or working outside the agreed limits of deviation for any aspect of the works). This approach will be promoted in all site inductions and training.

2.6.11 Any incidents or non-compliance with commitments will be recorded using the management processes as per the appointed Principal Contractor's Business Management System (BMS) requirements.

2.6.12 The appointed Principal Contractor will also:

- Maintain responsibility for pollution prevention measures being successfully implemented although subcontractors are bound to the requirements set out within this EMP
- Take all reasonable precautions and undertake all reasonable measures within their control to ensure that all legal requirements are complied with and that there is no unnecessary disturbance from undertaking the works
- Be available for environmental audits on a monthly basis.

2.6.13 The appointed Principal Contractor is responsible for delivering the Scheme environmental training programme, including toolbox talks, throughout the construction works, ensuring all staff are adequately trained to the agreed level prior to starting work on site.

2.6.14 The environmental aspects of the works shall be inspected routinely at intervals outlined in the relevant Management Plans and Method Statements as per the processes outlined in the BMS documents.

2.7 Post construction detailed Principal Contractor Responsibilities

2.7.1 The appointed Principal Contractor is responsible for correcting defects (as defined under the main construction contract) for 52-weeks following substantial completion. This is known as the ‘defects period’.

2.7.2 The defects period applies to relevant works following completion of the main construction works and completion of a subsequent 5-year period where the appointed Principal Contractor has responsibility for the correction of any defects for all assets constructed or modified and management of environmental landscaping and planting. This does not include maintenance of the infrastructure; this will be handed back over to the local management team at the end of the scheme.

2.7.3 Once the commissioning activities have taken place, the Scheme will be open to traffic. The appointed Principal Contractor will be responsible for any construction defects that arise for a period of 52 weeks substantial completion. After this period the Scheme will be handed over to various asset owners who operate the road network (Highways England, Tameside MBC and Derbyshire County Council, please refer to section 6.3 and Table 6.1). The Applicant proposes that side roads and other rights of way will be handed over to the asset owner after opening, who will be responsible for ongoing maintenance.

2.7.4 Following this the Applicant will continue to monitor the effectiveness of the landscape establishment of the environmental works in line with the REAC.

2.7.5 Environmental works will be maintained by the Applicant for the 52-week aftercare period, following construction to ensure that they become appropriately established and maintained. This maintenance will then be handed over and carried out by the asset owner. These are outlined in the REAC (TR010034/APP/7.3). Following this the Applicant will continue to monitor the effectiveness of the landscape establishment of the environmental works in line with the REAC.

2.7.6 The EMP will be refined to become the Third iteration by the appointed Principal Contractor. The Third iteration of the EMP will contain environmental information needed to support the future maintenance and operation of the Scheme.

2.8 Communication

2.8.1 The appointed Principal Contractor will direct all queries regarding the EMP and actions within it through the Applicant, prior to initial contact with statutory consultees.

2.8.2 The appointed Principal Contractor will act as the primary contact with statutory consultees leading up to and during the construction phase.

2.8.3 The appointed Principal Contractor will establish and maintain procedures for internal communications between the various levels and functions of the team during construction. Internal communications include:

- Advising of non-conformances to relevant managers
- Communicating environmental commitments to the construction team
- Communicating the environmental policy to the construction team
- Raising awareness of environmental issues to the construction team
- Reporting incidents to relevant managers.

2.8.4 Through this process, the appointed Principal Contractor will be responsible for capturing the following within the EMP:

- a description of the main difficulties encountered in delivery of measures to mitigate and manage the environmental effects
- the main uncertainties involved in the forecasting of measures to mitigate and manage the environmental effects

2.8.5 The appointed Principal Contractor will also document and respond to any relevant communications from external interested parties during construction. External communications may include, but will not necessarily be limited to:

- Dealing with complaints from members of the public; and
- Dealing with the media.

2.8.6 The appointed Principal Contractor will maintain an ongoing liaison with the statutory/regulatory bodies during the construction phase. Table 2.3 outlines the proposed communication framework and should be used as an example when defining the communication processes within the detailed Environmental Method Statements and Management Plans.

Table 2.3: Outline Communication Processes

Stakeholder	Outline Communication Processes
The Applicant's Project Manager	The appointed Principal Contractor Project Director will be responsible for involving the Applicant in any safety and / or environmental meetings (as required). The minutes of the meetings will be issued to the Applicant where appropriate and a copy will be retained on site.
Statutory and Non-Statutory Bodies	Consultation with the statutory and non-statutory bodies will be undertaken as required. This will ensure that all the relevant parties have an opportunity to input to the operation of the site in order to minimise adverse environmental impacts.
The Public	The public shall be kept informed of any operations and developments that may influence them. This may include temporary loss of amenities, changes to pedestrian or vehicle access routes or vegetation clearance. Any such notification will set out the nature of the operations and the times at which they are to be carried out through the Applicant's Public Liaison Officer or the appointed Principal Contractor's Community Liaison Officer. Social media, letter drops and newsletters may be used to keep local residents informed of progress on construction and any new operations that are to be carried out. The Applicant's Scheme web-page provides up-to-date project progress and community liaison information. Before and during construction, the web-page would continue to provide updates regarding the pre-construction and construction activities, details of areas affected by construction, and mitigation in place to reduce adverse effects. The information provided will also include details of contacts within the Scheme team (should any issues arise).
Construction Staff	Construction staff shall be kept up to date on all operational matters that may have an impact on the safety and environmental factors on site. The site induction will form the basis for all relevant information provided to construction staff and will be supported at regular intervals by toolbox talks, especially where new or particularly sensitive operations are about to commence. Briefings to staff will be provided to update them on any changes in working methods and procedure. Audits and reviews of the effectiveness of the method statements will highlight any corrective measures and subsequent feedback to construction staff will serve as a means of regulating and ensuring best working practice.

2.8.7 Weekly construction team meetings will be held where environmental issues will be discussed and reported, as necessary.

2.8.8 Internal communications will be carried out through the use of toolbox talks with the site and site meetings, which will include sub-contractors.

2.9 Reporting

2.9.1 The following reports will be provided to the Applicant on the agreed basis as part of the monthly contract Progress Report:

- Monthly environmental reports of key issues
- Waste management volumes and recycling figures
- Carbon calculator submitted using the Applicant's template
- Environmental incidents and near misses.

2.9.2 These will form part of the agenda at formal monthly contract Progress Meetings between the Applicant and the appointed Principal Contractor.

3. Record of Environmental Actions and Commitments

3.1 Introduction

3.1.1 The REAC refers to sections of the ES (TR010034/APP/6.3) which contain detailed information on the assessment and mitigation of impacts and sets out the mitigation committed for the Scheme as part of the ES.

3.1.2 A REAC (TR010034/APP/7.3) has been submitted as a standalone document with the DCO application. This identifies the environmental mitigation commitments (both embedded and essential), to address potential environmental effects of the Scheme which are identified in each topic chapter of the ES. In accordance with the DMRB LA 120, the REAC forms part of this EMP (First iteration), and therefore the two documents should be read in conjunction with each other.

3.1.3 When the EMP (Second iteration) is prepared by the Principal Contractor in advance of construction, the REAC table will be incorporated into this section (Section 3) of the document. It will reflect the all mitigation for the consented Scheme.

3.1.4 Any remaining items from the REAC which relate to the post construction and operational stage of the Scheme will be part of the EMP (Third iteration). The REAC acts in part as a connection between the ES and the EMP in all its forms, i.e. iterations 1 - 3 through the lifecycle of the project.

3.1.5 The REAC is a live document and as such will be updated as the Scheme progresses and will be finalised at the end of construction on completion of the Scheme, where it will inform the development of, and be included within, the EMP (Third iteration) to support the future management and operation of the Scheme.

3.2 REAC requirements

3.2.1 In accordance with DMRB LA 120 the REAC will include:

- Clear and specific description of the action
- The objective of the action
- How the action is to be implemented/achieved
- The source of the action, including references for source documentation e.g. environmental statement
- Naming of the person responsible for the action
- Achievement criteria and reporting requirements
- The project stage, date or implementation and achievement
- Details of any monitoring required and corrective action.

3.2.2 The REAC is a working document and will be updated by the Environmental Manager as the Scheme progresses. It will be finalised at the end of construction on completion of the Scheme, as Section 3 of the EMP (Third iteration). This will be the main vehicle for passing essential environmental information to the Applicant's Maintenance Agent, Tameside MBC and Derbyshire County Council (CC), who will be responsible for the future maintenance and operation of the Scheme.

4. Consents and Permissions

4.1 Introduction

4.1.1 The appointed Principal Contractor will be required to obtain and implement all permits, consents and licences necessary before and during the construction phase. The appointed Principal Contractor will need to manage the submission and approval of those required prior to the commencement of any site works. Table 4.1 provides an anticipated list which will need to be reviewed and updated prior to construction commencing and, as required, as the Scheme progresses.

4.2 Consents and Agreements Position Statement

4.2.1 The Consents and Agreements Position Statement (TR010034/APP/5.5) sets out the Applicant's intended strategy for obtaining consents and associated agreements needed to implement the Scheme. It identifies at a high-level what consents are expected to be needed for the Scheme, together with how those consents will be obtained.

4.2.2 The principal consent for the Scheme will be a DCO itself, a draft version is submitted as part of this application (TR010034/APP.3.1). The DCO process provides development consent for the works and enables land acquisition and temporary possession, along with many consents and powers to be dealt with at the same time. However, the DCO application may need to be supplemented by other applications because:

a. A specific consent cannot be contained in the DCO

b. A consenting authority declines to allow a consent to be contained within the DCO

c. It is not desirable, or it is inappropriate, to include a consent within a DCO due to the stage of design development meaning the detail required is unavailable.

4.2.3 Table 4.1 provides details of the anticipated consents / permissions required to deliver the EMP. The table will be refined for the EMP (Second iteration) to confirm permissions required and / or obtained. At the completion of the Scheme it will be refined further for the EMP (Third iteration) to cover developments through the Detailed Design and construction planning phase, and throughout the construction phase, in order to capture all relevant items.

Table 4.1: Anticipated consents and permissions required for the Scheme

Scheme Delivery Requirements and Issuing Authority	Relevant Document	Details	Notes
Flood Risk Activity Permit (FRAP) – Environment Agency	Environmental Statement, Chapter 13: Road drainage and the water environment (TR010034/APP/6.3)	Required for: Erecting any temporary or permanent structure in, over or under a Main River. Any activity within 8m of the bank of a main river, or 16m if it is a tidal main river. Any activity within 8m of any flood defence structure or culvert on a Main River, or 16m on a tidal river. FRAPs will be required for the River Etherow	Consent applications need to be supported by Detailed Design drawings, construction method statements, and an environmental risk assessment.
Ordinary Watercourse Consent – Tameside Metropolitan and High Peak Borough Councils	Environmental Statement, Chapter 13: Road drainage and the water environment (TR010034/APP/6.3)	Required for works with the potential to impeded flow in any ordinary watercourse. Consent will be required for the proposed new culverts on 10 ditches.	Consent applications need to be supported by Detailed Design drawings and a construction method statement.
License for temporary dewatering (small scale dewatering in the course of building or engineering works) – Environment Agency	Environmental Statement, Chapter 13: Road drainage and the water environment (TR010034/APP/6.3)	An abstraction license is required unless exempted. Exempted if: • Lasting less than 6 consecutive months from commencement of first abstraction • Has no potential to cause impact at any conservation site • Has no potential to cause damage to protected species • Is immediately discharge to a soakaway • Is less than 100 m^3/day • If within 500 m of a conservation site, 250 m of a spring, well or borehole used to supply water for a lawful use, the volume restriction is reduced to 50 m^3/d from 100 m^3/day.	This permit will be applied for by the appointed Principal Contractor.

Scheme Delivery Requirements and Issuing Authority	Relevant Document	Details	Notes
Permit for discharge from excavations – Environment Agency or Water Company	Environmental Statement, Chapter 13: Road drainage and the water environment (TR010034/APP/6.3)	A permit to discharge is not required from the Environment Agency if the discharge is to foul sewer, however the discharge conditions must be agreed by the water company. However, a discharge permit is usually needed if the discharge is from an excavation to surface water. The permit is made to the Environment Agency if the discharge is to a main river and to the lead local flood authority if into a non-main river. A site can be exempted if the following is true: • have a short term, temporary discharge of uncontaminated water which is wholly or mainly rainwater, from an excavation to surface water (such as pumping water out of excavations on a building site) • complies with all the conditions listed in the relevant guidance document (*https://www.gov.uk/government/publications/temporary-dewatering-from-excavations-to-surface-water/temporary- dewatering-from-excavations-to-surface-water*)	This permit will be applied for by the appointed Principal Contractor.
Permit for discharge – Environment Agency/ Lead Local Flood Authority	Environmental Statement, Chapter 13: Road drainage and the water environment (TR010034/APP/6.3)	New outfall structures as part of the highway drainage may require Environmental Permit or a Land Drainage Consent if connecting into a Main River or Ordinary Watercourse respectively. Consent will be required for both the temporary works and the permanent outfall structure. The requirements for the permit or consent will be agreed in full consultation with the Environment Agency and/or Lead Local Flood Authority at the detailed design stage of the scheme.	This permit will be applied for by the appointed Principal Contractor.
Section 61 – Noise (Control of Pollution Act 1974)	Environmental Statement, Chapter 11: Noise and vibration (TR010034/APP/6.3)	If required, details to be included in the EMP (Second iteration) by the appointed Principal Contractor.	The requirement for (and details of if required) a s61 is to be agreed with relevant LPA by the appointed Principal Contractor prior to the start of the construction phase

Scheme Delivery Requirements and Issuing Authority	Relevant Document	Details	Notes
Removal of trees	Environmental Statement, Chapter 8: Biodiversity (TR010034/APP/6.3)	Removal of trees will be permitted under the DCO with exclusion of vegetation noted as being retained on the Environmental Masterplan (TR010034/APP/6.4).	
Removal of hedgerows	Environmental Statement, Chapter 8: Biodiversity (TR010034/APP/6.3)	Removal of hedgerows will be permitted under the DCO with exclusion of vegetation noted as being retained on the Environmental Masterplan (TR010034/APP/6.4).	Two hedgerows within the study area were assessed to meet the criteria of 'important hedgerow' in accordance with the Hedgerows Regulations 1997 (H18 and H24). Approximately 42 m of hedgerow H24 falls within the DCO boundary of the Scheme; hedgerow H18 is situated immediately north-east of the DCO boundary.
Temporary footpath closures	Environmental Statement, Chapter 12: Population and Human Health (TR010034/APP/6.3)	Temporary closure orders under the Road Traffic Regulations Act from Tameside Metropolitan Borough Council/Derbyshire County Council – closures will be required for PRoW LON/35/10,PRoW LON/50/10, PRoW LON/51/10, PRoW LON/52/10, PRoW LON/88/60, and PRoW LON/90/10.	Temporary closures will be authorised by the DCO but notification of works is required. Temporary footpath closures are identified on 2.4 Streets, Rights of Way and Access Plans (TR010034/APP/2.4).
Licence to carry out works affecting bats under Wildlife and Countryside Act 1981 (as amended) – Natural England	Environmental Statement, Chapter 8: Biodiversity (TR010034/APP/6.3)	Consent will be required for any works with potential to damage or disturb bats or their roosts. A 'letter of no impediment' will be submitted to Natural England prior to the DCO application being determined to agree acceptance of the licence in principal. An application for the final licence being submitted to Natural England after the DCO application has been approved.	Demolition of structures with confirmed bat roosts will required license to be in place prior to demolition. Details of the structures proposed for demolition can be found in Chapter 2: Description of the Scheme of the ES (TR010034/APP/6.5).
Licence to carry out works affecting badgers under Wildlife and Countryside Act 1981	Environmental Statement, Chapter 8: Biodiversity (TR010034/APP/6.3)	Consent will be required for any works with potential to damage or disturb badgers or their setts. A 'letter of no impediment' will be submitted to Natural England prior to the DCO application being determined to agree acceptance of the licence in principal.	The permanent closure and destruction of eight setts is required as these setts are located within the DCO boundary and cannot be avoided.

Scheme Delivery Requirements and Issuing Authority	Relevant Document	Details	Notes
(as amended) – Natural England		An application for the final licence being submitted to Natural England after the DCO application has been approved.	Details can be found in Appendix 8.2 of the ES, Confidential Badger Survey report (TR010034/APP/6.4) Note: The locations of these setts are confidential and details of the locations of these setts should only be shared with the necessary parties involved with the consenting and construction of the Scheme.

4.3 Recording

4.3.1 A register of environmental permits and a record of all consents, licences, etc. relating to construction activities will be maintained by the appointed Principal Contractor and made available for audit by the Applicant.

4.3.2 Any conditions related to each consent, permission or agreement can be found within the REAC (TR010034/APP/7.3) where appropriate.

5. Environmental Asset Data and As Built Drawings

5.1 The Applicant's Environmental Information System

5.1.1 The Applicant's Environmental Information System (EnvIS) consists of specific environmental data supplied by service providers, the Applicant and other bodies which is collated and displayed in the Highways Agency Geographic Information System (HAGIS). This data is used to assist in managing the environment, within and surrounding the strategic road network, and in the review and reporting of the environmental performance of both service providers and the Applicant.

5.1.2 The aim of EnvIS is to assist the Applicant and service providers, in designing and managing the strategic road network in an accurate, consistent and environmentally sound manner. Specifically, it aims to achieve the following key strategic and operational objectives:

- enable consistent and accurate recording and retrieving of specific environmental data about the strategic road network
- assist in the review and reporting of environmental performance of both the Applicant and service providers
- improve understanding of the environmental issues and opportunities that must be considered at different stages of trunk road and motorway management
- in line with ensuring a value for money approach, assist in the prioritisation of environmental management actions based on an understanding of the condition of the Element and environmental objectives
- assist in the handover of environmental data from designers to network management agents (and vice versa) and the transfer of environmental data from an outgoing network management agent to its successor
- assist designers and network management agents in the collection of environmental data and use this information to develop specific environmental management programmes and strategies, including EMPs

5.1.3 Further to the adherence to the Applicant's EnvIS, the appointed Principal Contractor will adhere to the Highways England Asset Management Development Group – Asset Data Management Manual Part 2 – Requirements and Additional Information which sets out the Applicant's asset data requirements to achieve both its corporate objectives as well as its asset management objectives.

5.2 Collection and submission of EnvIS data

5.2.1 The appointed Principal Contractor is responsible for identifying, recording, updating and auditing the EnvIS data on an ongoing basis. This should be stored in the appointed Principal Contractor's own system, as-and-when elements are identified, removed, or implemented as part of the Scheme improvements.

5.3 Submission of EnvIS data

5.3.1 EnvIS data is submitted in accordance with the interface file specifications set out in the environment data section within the Asset Data Management Manual. The appointed Principal Contractor shall ensure that the data is in a compatible format to enable supply of data to the maintenance contractor.

5.3.2 For designers, the frequency of EnvIS data submission (to the Applicant), shall be in line with the end point of the following milestones:

- Development phase (Preliminary Design) – Environmental Statement Publication - environmental data resulting from statutory or non-statutory assessment of the environmental implication of a proposed project. Designers collect and submit EnvIS data for all Elements that have influenced or are influenced by the Preferred Route
- Development phase (Construction Preparation) – Detailed Design drawings - environmental data detailing the final specification of the Scheme. Designers collect and submit EnvIS data detailing all Elements associated with the planning and design of the Scheme and planned environmental management actions that will be undertaken during the construction period and of the existing Elements likely to be affected.
- Construction phase (Construction) – As Built Drawings – environmental data detailing the completion of the Scheme prior to handover. Designers collect and submit EnvIS data detailing all Elements associated with the construction of the Scheme and planning environmental management actions that are required to be undertaken by the network managing agent as part of operating and maintaining the network area.

5.3.3 For the EMP (first iteration), EnvIS data has been submitted through the publication of the ES. This included the submission of all species surveys results undertaken to inform the ES.

5.3.4 EnvIS data for the Detailed Design stage will be submitted for all elements associated with the planning and design of the Scheme. This will have updated previous data arising from the Preliminary Design including any survey information / data that has already been provided e.g. species surveys.

5.3.5 Towards the end of the construction phase of the Scheme and prior to handover, EnvIS data detailing the completion of the Scheme will be collected by the appointed Principal Contractor and submitted. The data will detail all elements associated with the construction of the Scheme and planned environmental management actions that are required to be undertaken by the Network Management Agent as part of operating and maintaining the Network Area.

5.3.6 Consultation will be held with the Managing Agents to ensure that the agreed data in the correct format forms part of the handover package of information. The Managing Agents will then ‘upload’ this additional information as part of their standard submission to the Applicant.

5.3.7 The Evaluation of Change Register, identifying changes to the design as part of the change control process, will be provided by the appointed Principal Contractor in Annex E of the EMP (Second iteration) and submitted as part of the EnvIS process prior to handover.

[Note: This section should be updated at the next milestone stage (Development phase (Construction Preparation)) to detail the submission arrangements for the future EnvIS data]

5.4 As built drawings

5.4.1 In line with the Construction (Design and Management) Regulations a health and safety file will be produced for handover at the end of the Scheme. This will include pre-construction information, construction process details and Scheme plans including as built drawings.

5.4.2 As built drawings produced at the Preliminary Design stage by the appointed Principal Contractor and will be issued to the Applicant by the appointed Principal Contractor via Business Collaborator.

5.4.3 The following relevant engineering and environmental plans have been provided as follows:

- DCO boundary for the Scheme (Figure 2.1, TR010034/APP/6.4)
- Scheme General Arrangement (Figure 2.2, TR010034/APP/6.4)
- Environmental Constraints (Figure 2.3, TR010034/APP/6.4)
- Environmental Masterplan (Figure 2.4, TR010034/APP/6.4)
- Location Plan (TR010034/APP/2.1)
- Land Plans (TR010034/APP/2.2)
- Works Plans and DCO Schedule 1: Work Plan Schedule (TR010034/APP/2.3 and 3.1)
- Streets, Rights of Way and Access Plans (TR010034/APP/2.4)
- Scheme Layout Plans (TR010034/APP/2.6)
- Engineering Drawings and Sections (TR010034/APP/2.7)
- Temporary Works Plans (TR010034/APP/2.8)
- Culverts and Drainage Plans (TR010034/APP/2.12)

5.4.4 In addition, the following relevant DCO plans have been submitted:

- Nature Conservation Sites and Features Plan (TR010034/APP/2.9)
- Historic Environment Sites and Features Plan (TR010034/APP/2.10)
- TPOs and Hedgerows Regulations 5 (2)(o) (TR010034/APP/2.13)

5.5 Species survey drawings

5.5.1 During the Preliminary Design stage, Extended Phase 1 Habitat surveys have been undertaken for the whole site. In addition, the following ecological surveys have been undertaken

Table 5.1: Ecological Surveys undertaken to date

Survey	Date undertaken
NVC survey	July 2017
Biodiversity metric condition assessments	August and September 2020.
Hedgerow survey	October 2020
Watercourse and standing water body (ponds and lakes) walkover survey	March 2020
River Corridor Survey	May and June 2018
River condition survey	2020
Aquatic macroinvertebrate survey	October 2020
Predictive System for Multimetrics pond survey	August 2020
Great crested newt survey	April, May, and June 2017
Breeding bird surveys	March to July 2020
Reptile surveys	May to September 2017
Kingfisher survey	March 2020
Barn owl surveys	June and October 2020
Bat roost inspection survey	Throughout 2017 and 2018
Bat emergence surveys	Throughout 2017 and 2018
Bat activity surveys	Carried out in October 2019 and between March and September 2020
Bat tree surveys	Carried out between July and September 2020 and between January and February 2021 (for hibernation) by Ecus Ltd on behalf of the Applicant
Otter surveys	April and September 2020
Water vole surveys	April and September 2020
Badger walkover survey	February 2020 (updated walkovers throughout 2020 and 2021)
Badger camera survey	October-November 2020
Badger bait marking survey	Throughout March 2020
Arboricultural survey	September and October 2020

5.5.2 Reports and plans for these surveys are contained in the Figures and Appendix sections of the ES (TR010034/APP/6.4 – 6.5).

6. Details of maintenance and EMP monitoring activities

6.1 General requirements

6.1.1 The ES and REAC propose certain requirements 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. noise monitoring, others are more general, e.g. covered by routine inspection/audit or confirmation by the construction team that an element of the Scheme design has been completed as outline in the relevant Management Plans and Method Statements.

6.1.2 A summary of the monitoring requirements for the Scheme for those aspects where a monitoring requirement is identified will be set out in the EMP (Second iteration), based on recommendations and commitments that are outlined in the ES.

6.2 Detailed requirements

6.2.1 The details of specific monitoring and reporting requirements for the Scheme are still to be developed. These details will be confirmed during Detailed Design with the delivery arrangements included in this section of the EMP (Second iteration).

6.3 General asset maintenance requirements

6.3.1 The Applicant's Maintenance Agent, Tameside MBC and Derbyshire County Council (CC) will be responsible for the maintenance of the Scheme once operational. New assets shall be assessed, and maintenance requirements determined in accordance with requirements of the respective contract documents. Table 6.1, below, sets out high-level maintenance responsibilities for each asset.

Table 6.1: Existing and new assets including responsibility

Asset type	Description	New or Existing	Owner
Highways	Road restraint system (RRS) on the dual carriageway	New	Highways England
Highways	Traffic Signs	New/existing	Highways England Tameside MBC Derbyshire CC
CCTV	CCTV for the underpass	New	Highways England

Asset type	Description	New or Existing	Owner
CCTV	CCTV for Mottram Bypass and the Gun Inn interchange	New	Highways England
CCTV	Woolley Bridge junction traffic signals CCTV	New	Derbyshire CC
Drainage	Chamber	New/existing	Highways England Tameside MBC Derbyshire CC
Drainage	Headwall	New/existing	Highways England Tameside MBC Derbyshire CC
Drainage	Flow controller	New/existing	Highways England Tameside MBC Derbyshire CC
Drainage	Ponds	New	Highways England (pond 1 and 2) Tameside (pond 3)
Lighting	Chamber	New/existing	Highways England Tameside MBC Derbyshire CC
Lighting	Throughout	New/existing	Highways England Tameside MBC Derbyshire CC
Traffic signals and associated technology	Traffic signals and detectors (loops or radar, tbc10) at Mottram Moor, M67 J4 and the Gun Inn interchange	New	Highways England owned though Transport for Greater Manchester (TfGM) will maintain and operate
Traffic signals and associated technology	Traffic signals and detector loops at Woolley Bridge junction	New	Derbyshire CC
Geotechnical assets	Earthworks	New/Existing	Highways England Tameside MBC Derbyshire CC

[10] From a maintenance perspective the aspiration is radar based to avoid carriageway maintenance

Asset type	Description	New or Existing	Owner
Underpass	Underpass on the A57	New	Highways England
Underpass	Section above the underpass – flora	New	Tameside
De-trunked A57	The old section of the A57	Existing	Tameside
Carrhouse Lane underpass	Underpass that serves Carrhouse farm	New	Tameside
Old Mill farm underpass	Underpass that serves Old Mill farm	New	Highways England
River Etherow Bridge	Bridge	New	Tameside
Access track	Track used for access to maintain pylons and other assets adjacent to the A57 dual carriageway	New	Highways England
M67 through-link	The through-link of M67 J4	New	Highways England

6.3.2 Further details regarding maintenance responsibilities and requirements will be included in the EMP (Third iteration) prior to the Scheme opening.

6.4 Inspections and monitoring processes

6.4.1 The inspection and monitoring process will be detailed in full in Annex F of the EMP (Second iteration) by the Appointed Principal Contractor, ahead of the construction phase. Typical requirements are summarised below:

- The appointed Principal Contractor will carry out formal Health Safety Environment and Quality (HSEQ) inspections of all work areas at least every 7 days.
- The appointed Principal Contractor will implement a protocol for identification of near miss/good practice reporting.
- Inspections and Observations shall be categorised and distributed. The Inspections and Observations will detail realistic timescales for actions, and these will be monitored by the site team. Action Leaders will be appointed to discharge any corrective actions.
- Data from inspections shall be used for trend analysis purposes to allow pin-point targeting of recurring issues.

6.4.2 As a minimum, the following inspections will be completed:

- Weekly Inspections by a nominated employee from the appointed Principal Contractor
- Weekly Inspections carried out by appointed sub-contractor(s)

- Site Set Up Audit by the Environmental Manager
- Monthly HSEQ scored inspection by internal independent inspector or appointed senior member of the Principal Contractor's project management team

6.4.3 The appointed Principal Contractor will ensure that competent persons undertake all other statutory inspections at required intervals. Guidance and forms for other statutory inspections, e.g. Provision and Use of Work Equipment Regulations 1998, Lifting Operations and Lifting Equipment Regulations 1998, copies of which the appointed Principal Contractor should make available.

6.4.4 In addition to the above, the appointed Principal Contractor shall monitor health, safety and environmental standards and performance as follows:

- The appointed Principal Contractor's Supervisors will monitor their work area environmental conditions and performance daily.
- Monthly reviews of risk assessments/method statements will be undertaken to ensure compliance, monitored through the Applicant's Business Collaborator.
- Sample checks of compliance with method statements, work package plans, work briefings and Permits to Work will be undertaken.
- Sample checks of sub-contractors/ appointed Principal Contractor's briefing of own team on method statements will be completed through the use of stop shift audits.
- Sample checks will be performed on the training of staff by sub-contractors/ appointed Principal Contractor.
- Spot checks and environmental audits of sub contractors' inspections and documentation (including registers) verifying compliance will be undertaken.
- Periodic audits checks and inspections will be completed by the HSEQ Team.

6.4.5 Each sub-contractor must ensure their line managers, Supervisors or Health, Safety and Environmental Advisors monitor the health, safety and environmental standards of their activities as a normal part of their duties. In addition, each contractor should ensure that a formal and recorded safety and environmental inspection is carried out every week. Inspection records should include confirmation that previous remedial actions have been carried out. These reports will be copied to the Scheme Document Controller and will be reviewed at the monthly safety meeting.

6.4.6 The works areas will be registered with the Environment Agency Floodline Warnings Direct Scheme which will provide constant monitoring of flood risk.

6.5 Auditing

6.5.1 The appointed Principal Contractor's HSEQ Manager accompanied by the appointed Environmental Manager and internal independent ISO Auditor, will conduct an audit to examine Health, Safety and Environmental systems and

performance standards following mobilisation of the site. This will be undertaken on a 6-monthly basis.

6.6 Additional inspection and monitoring

6.6.1 Any consent/licence/permit monitoring inspection requirements shall be added into this section and the appropriate Environmental Method Statements and Management Plans within the annex.

6.7 Procedures in the event of failure to comply with the EMP

6.7.1 Any persons who disregard the safety, health or environmental rules and arrangements detailed in this plan will, in the first instance, receive a written warning from the appointed Principal Contractor or nominated person; subsequent misdemeanours will provoke the removal of the person from site. The appointed Principal Contractor reserves the right to remove from site instantly any person whose acts, or omissions, in his/her opinion constitute serious danger to people or property.

6.7.2 The appointed Principal Contractor may give reasonable directions to any contractor sharing the site for the purposes of construction (regardless of contractual arrangements) in order for them to comply with duties under Regulation 15(3)(a) of CDM 2015 to issue reasonable directions to contractors.

6.7.3 The relevant emergency procedures will be outlined by the appointed Principal Contractor and contained in Annex D of the EMP (Second iteration).

6.8 Review and close out reporting

6.8.1 The EMP can be reviewed as often as is necessary to include the significant changes in equipment, risk, and scope of works, circumstances, people or other organisational change.

6.8.2 Suitability and performance against the EMP will be reviewed to ensure that it remains valid and reflects the arrangements for managing current activities on site.

6.8.3 Sustainability and Environmental performance will be reviewed throughout the contract and discussed as appropriate at the following meetings:

- Scheme Board meetings
- Construction Management Team meetings
- HSEQ Co-ordination meetings
- HSEQ Workforce Committee meetings

6.8.4 Performance reviews shall identify trends in accidents and incidents highlighting areas that will be targeted for improvement.

6.8.5 The appointed Principal Contractor will complete sub-contractor's performance reviews at least every 3 months using the appointed Principal Contractor's commercial management system. Relevant members of the construction team should be consulted during each review. Close out reports will be prepared in accordance with the appointed Principal Contractor's Management System requirements.

6.8.6 All archiving will be carried out in accordance with the appointed Principal Contractor's archiving requirements.

7. Induction, training and briefing procedures for staff

7.1 General management

7.1.1 The process for the induction, training and briefing procedures for staff will be detailed in full in the EMP (Second iteration), ahead of the Construction stage. Typical requirements are summarised in this Chapter.

7.1.2 All personnel on site will be made aware of the company Environmental Policy by the appointed Principal Contractor, the relevant Environmental Legislation, the REAC and the relevant Environmental Method Statements and Management Plans included in the EMP. The team will be briefed on the following topics as a minimum / as appropriate:

- Company Environmental Policy
- General environmental awareness
- Waste management
- Working in or near watercourses
- Surface water pollution and control
- Ecology/European Protected Species
- Spills and emergency response procedures
- Dust management
- Vibration management
- Noise management

7.1.3 Specific training needs will be identified and provided for all personnel involved in work activities that have the potential to result in an adverse impact on the environment. The 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 (along with all other training) will be maintained on record as part of the appointed Principal Contractor's management system.

7.2 Site inductions

7.2.1 Prior to commencing work on site, all personnel will undergo a site induction, where the appointed Principal Contractor will communicate the environmental objectives, requirements and responsibilities to the workforce.

7.2.2 The appointed Principal Contractor will compile and communicate Environmental Site Rules which will detail site personnel's obligations while on site. This will help introduce accountability for personnel working on the Scheme.

7.2.3 The site induction and training will cover relevant parts of the following areas to a level of sufficient detail for the workforce:

- Environmental site rules
- Spill kit use and locations
- Emergency spill procedures
- Energy management
- Invasive species
- Asbestos
- Waste management
- Biodiversity protection
- Biodiversity enhancement
- Public interface
- Sustainability procedures

7.2.4 In addition, the site induction will include other beneficial advice and procedures to support all site workers, promoting a safe and healthy working environment, such as:

- First aid and accident procedures
- Fire and emergency procedures
- Mental health and wellbeing provisions (e.g. monthly communications and events on health, details of 'mental health first aiders' and wellbeing issues)
- Occupational health provision

7.2.5 All site personnel will be encouraged to report all unsafe events, practices and conditions as well as any exemplar site practices.

7.3 Evaluation of training effectiveness

7.3.1 As part of the appointed Principal Contractor's procedures, the Scheme shall appoint specific Management Environmental Representatives and Leaders to drive improvement in a number of areas and evaluate training effectiveness. These champions shall be appointed in the following areas:

- Resource Efficiency Leader
- Waste Reduction and Recycling Leader
- Health and Wellbeing Leader
- Mental Health First-Aiders
- Occupational Health

7.4 Internal training

7.4.1 The appointed Principal Contractor will develop an internal expert knowledge transfer scheme with environmental awareness sessions. All members of staff

employed on the scheme shall attend. The session shall cover topics including but not limited to:

- Setting in the environment
- Legislation relevant to the scheme
- Ecological impacts
- Environmental risks
- Archaeological awareness and risks (although it is understood that there is low archaeological potential within the site)

8. References and glossary

8.1 References

8.1.1 BSI (1996, as amended) BS EN ISO 14001: Environmental Management

8.1.2 Highways Agency (2020) DMRB LA 104 Environmental assessment and monitoring

8.1.3 Highways Agency (2010) Interim Advice Note (“IAN”) 84/10 Environmental Design and Management Section 10 Environmental Information System –EnvIS (IAN 84/10)

8.1.4 Highways Agency (2020) LA 120 Environmental management plans

8.1.5 IEMA (2008) Environmental Management Plans: Practitioner Best Practice Series, Volume 12

8.1.6 Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

8.2 Glossary and abbreviations

Term	Meaning
BMS	Business Management System
BSI	British Standards Institution
CDM	Construction Design and Management
CEP	Community Engagement Plan
CWMP	Construction Water Management Plan
EMP	Environmental Management Plan
DCO	Development Consent Order
DMRB	The Design Manual for Roads and Bridges
ECoW	Environmental Clerk of Works
EIA	Environmental Impact Assessment
EnvIS	Environmental Information System
ES	Environmental Statement
FRAP	Flood Risk Activity Permit
HSEQ	Health Safety Environment and Quality
IEMA	Institute of Environmental Management and Assessment
LEMP	Landscape and Ecological Management Plan
MMP	Materials Management Plan
NMP	Nuisance Management Plan
NVMP	Noise and Vibration Management Plan
PPP	Pollution Prevention Plan
RAMS	Risk Assessment and Method Statement
REAC	Register of Environmental Actions and Commitments
SHE	Safety, Health and Environment
SRP	Soil Resource Plan
SWMP	Site Waste Management Plan
TBC	To Be Confirmed

Annexes

ANNEX A:CONSTRAINTS MAP

BRUSHES VALLEY LNR

COPLEY CONSERVATION AREA

HUDDERSFIELD NARROW CANAL SSSI

SOUTH PENNINE MOORS SAC

PEAK DISTRICT MOORS (SOUTH PENNINE MOORS PHASE 1) SPA

DARK PEAK SSSI

PADFIELD CONSERVATION AREA

HADFIELD CONSERVATION AREA

MOTTRAM-IN-LONGDENDALE CONSERVATION AREA

GLOSSOP HOWARD PARK CONSERVATION AREA

OLD GLOSSOP CONSERVATION AREA

HURST CLOUGH LNR

GLOSSOP WREN NEST CONSERVATION AREA

GREAT WOOD LNR

GLOSSOP ST JAMES CONSERVATION AREA

WERNETH LOW LNR

SIMMONDLEY CONSERVATION AREA

CHARLESWORTH CONSERVATION AREA

ETHEROW COUNTRY PARK LNR

0 Kilometres

LEGEND

- DEVELOPMENT CONSENT ORDER (DCO) BOUNDARY
- 2KM STUDY AREA
- SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- SPECIAL PROTECTION AREAS (SPA)
- SPECIAL AREAS OF CONSERVATION (SAC)
- LOCAL NATURE RESERVES (LNR)
- LOCAL WILDLIFE SITES
- SCHEDULED MONUMENTS
- REGISTERED PARKS AND GARDENS
- HERITAGE AT RISK
- CONSERVATION AREAS
- AIR QUALITY MANAGEMENT AREAS
- NOISE IMPORTANT AREAS
- RIVER NETWORK

LISTED BUILDINGS

- GRADE I
- GRADE II*
- GRADE II

Description			
Status	Revision	Issue Date	
Description			
Status	Revision	Issue Date	
Description			
Status	Revision	Issue Date	
Description	DCO SUBMISSION		
Status A4	Revision P02	Issue Date 24/05/21	
Drawn SD	Checked BT	Reviewed LY	Authorised MR
Drawing Suitability DCO SUBMISSION			Status A4

Client: highways england

Scheme Name: A57 LINK ROADS

Drawing Title: FIGURE 2.3 ENVIRONMENTAL CONSTRAINTS

PINS Ref. No: TR010034/APP/6.4

Drawing Number: Scheme | Originator | Volume
HE551473 - BBA - EGN -
A57_AL_SCHEME - DR - LE - 020300
Location | Type | Role | Number

Scale: 1:25,000 | Original Size: A3 | Rev: P02

ANNEX B:RELEVANT MANAGEMENT PLANS

All Environmental Method Statements and Management Plans will be produced in response to the statutory process by the appointed Principal Contractor for the Scheme as part of the EMP (Second iteration)

Annex B1: Soil Resource Plan

A57 Link Roads

TR010034

7.2 Environmental Management Plan Annex B1: Outline Soil Resource Plan

APFP Regulation 5(2)(a)

Planning Act 2008 Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

January 2022

Table of contents

1. Introduction

1.1 Scheme location

1.1.1 The Scheme lies east of Manchester and mainly within the administrative boundaries of Tameside Metropolitan Borough Council (TMBC), up until the proposed River Etherow Bridge. To the east of this, the Scheme crosses over the boundary with High Peak Borough Council (HPBC) and Derbyshire County Council (DCC).

1.2 The Scheme

1.2.1 The A57 and A628 between Manchester and Sheffield currently suffer from heavy congestion creating unreliable journeys, which limits journey time reliability. This restricts economic growth due to the delays experienced by commuters and business users alike.

1.2.2 The Scheme to improve has been developed Journey time between Manchester and Sheffield, and has evolved over more than 50 years, as different improvements have been explored.

1.2.3 The Scheme includes the following components:

- A new offline bypass of 1.12 miles (1.8km) of dual carriageway connecting the M67 Junction 4 to the A57(T) Mottram Moore Junction.
- A new offline bypass of 0.81 miles (1.3km) of single carriageway connecting the A57(T) Mottram Moore Junction to the A57 Woolley lane Junction.
- Creating two new junctions, Mottram Moore and Woolley Bridge Junction improvement works to the existing M67 Junction 4.
- Creation of five new structures (Old Mill Farm Underpass, Roe Cross Road Overbridge, Mottram Underpass, Carrhouse Lane Underpass and River Etherow Bridge).
- One main temporary construction compound area located on agricultural land to the east of M67 Junction 4.
- Detruncking, including safety measures from the M67 Junction 4 to Mottram Moor Junction, to be agreed with TMBC.
- Safety measures and improvements to the A57 from Mottram Moor Junction to the Gunn Inn Junction and from the Gun Inn Junction to Woolley Lane Junction to be agreed with TMBC.

1.2.4 The Scheme is a Nationally Significant Infrastructure Project (NSIP) and this Outline SRP has been developed in support of National Highways' application for a Development Consent Order (DCO) to authorise construction, operation and maintenance of the Scheme. An Environmental Impact Assessment (EIA) has been carried out for the Scheme and is reported in the Environmental Statement (ES), which has been submitted to support the DCO application[1].

[1] https://infrastructure.planninginspectorate.gov.uk/projects/north-west/a57-link-roads-previously-known-as-trans-pennine-upgrade-programme/?ipcsection=overview

1.3 Aim of the Soil Resource Plan

1.3.1 This Outline SRP is based on the commitments set out in the ES for the Scheme, and specifically those detailed within the Environmental Management Plan (EMP) (First iteration) (APP-183) and Register of Environmental Actions and Commitments (REAC) (REP1-037), which details the requirement for a Soil Resource Plan (SRP) to be developed in order to:

- limit the permanent removal of soils during earthworks and foundation construction.
- provide instruction on how to maintain the quality of stockpiled soils, prevent erosion and how to protect soil structure during earthwork activities; and
- detail the method of reinstatement of soils to their original quality.

1.3.2 This Outline SRP sets out the principles and procedures that will be developed during the Detailed Design stage, as this document is developed into a final management plan.

1.3.3 An EMP (Second iteration) will be produced by the appointed Principal Contractor to manage environmental effects during the construction phase of the Scheme, at which stage the REAC will be combined so they become a single document. This will broadly follow the EMP (First iteration) and will reflect the mitigation measures set out in the REAC requirements. All environmental management plans, including this SRP, will be included in Annex C.

1.3.4 The SRP is applicable to soils that are currently under agricultural or landscaping use that are to be restored at the end of the construction period.

1.3.5 It was stated in Chapter 9: Geology and soils of the ES (APP-065) that the agricultural soil in the area affected by the Scheme is in Agricultural Land Classification (ALC) Grades 4 and 5 (poor and very poor quality) and so there is no best and most versatile (BMV) land requiring special protection. However, it is recognised that all affected soils have local agricultural value.

1.3.6 The land temporarily acquired for construction shall be restored to a condition equivalent to its original, following an aftercare period which would typically be five years. During this time problems with compaction, surface stones, drainage and settlement shall be rectified. This shall be achieved by means of a SRP following the best practice set out in Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

1.3.7 There is no mitigation for the permanent loss of agricultural soils, apart from conserving the soils that are stripped and using them elsewhere on the Scheme.

1.3.8 On the flood compensation area beside the River Etherow the topsoil shall be stripped and stockpiled before being replaced on the lowered ground surface. The resulting quality of this land will be poorer than before; the ALC grade being reduced from Grade 4 to Grade 5, making it suitable only for rough grazing and hay making.

1.3.9 The aim of this SRP is to provide a reference on soil management for site operators on the safeguarding of soil resources and ensure protection, conservation, appropriate reinstatement and aftercare.

1.3.10 Other types of land such as contaminated ground, embankment fill, etc. are not considered in this SRP.

1.4 Policy and legislation

1.4.1 The Site Waste Management Plans Regulations 2008 (now rescinded) required all construction projects exceeding £300k in value to produce a Waste Management Plan (WMP). Under the new voluntary code for waste management, the Definition of Waste: Development Industry Code of Practice, a Materials Management Plan (MMP) must be produced. These two documents are also required under the appointed Principal Contractor's Management System and form separate management plans to this Soil Management Plan.

1.4.2 The topsoil management shall adhere to Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites[2].

1.5 Sources of information

1.5.1 The following sources of information have been used in developing this SRP:

- British Standard 3882 Method of placement: 2015 Specification for topsoil
- The Department for Food and Rural Affairs (Defra) 2009 Code of Practice for sustainable use of soils on construction sites
- The University of Cranfield. Soil Survey Field Handbook: Describing and sampling soil profiles (Hodgson, 1997)
- A57 Link Roads Environmental Statement, available through the Planning Inspectorate project document library: TR010034-000603-A57 Link Road Examination Library Published.pdf (planninginspectorate.gov.uk)
- British Society of Soil Science (BSSS). Professional Competence Scheme Document 2 'Agricultural Land Classification of England and Wales' (2011)
- Natural England (2012). 'Agricultural Land Classification: protecting the best and most versatile agricultural land (TIN049)'
- Minister of Agriculture Fisheries and Food (MAFF) (1988). Agricultural Land Classification of England and Wales. Revised Guidelines and Criteria for Grading the Quality of Agricultural Land. Available from: Agricultural Land Classification of England and Wales: Revised criteria for grading the quality of agricultural land - ALC011 [redacted]
- Defra's Interactive Magic Map (2020). Available from [redacted]

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716510/pb13298-code-of-practice-090910.pdf

2. Intrusive soil survey and Testing

2.1 Method

2.1.1 Intrusive ground Investigation surveys will be undertaken by the appointed Principal Contractor during the Detailed Design and pre-construction stage, ahead of the Construction stage commencing.

2.1.2 This testing method will be developed and undertaken in advance of construction works. At that time, this section will be updated when the detailed SRP is produced.

3. Pre-construction and during construction work

3.1 General approach

3.1.1 Construction is planned to commence in Spring 2023 due to the suitability of the ground conditions at this time of year. Soil moisture during the summer months is most likely to be below field capacity and field drains are not likely to be flowing. It is the appointed Principal Contractor's intention to commence with pre-earthworks drainage works as one of the first activities. The condition is expected to be a heterogenous topsoil horizon to 0.30 m bgl.

3.2 Outline

3.2.1 The objective is to restore temporarily used land to its previous quality. Soil handling works should be carried out in accordance with guidance provided in other available management plans for the Scheme, including the Environmental Management Plan and consider ecological requirements and service installations. Surface water/ drainage management during the construction phase will be managed as per the Temporary Works Drainage Strategy.

3.2.2 The upper (approximately) 30 cm within the temporary land take area should be treated (stripped, stockpiled and replaced) as a loamy topsoil. Once the topsoil has been stripped and stored, the compound and access road can be levelled with stone cover to provide a firm, temporary working surface.

3.2.3 Any isolated areas not likely to be affected within the temporary land take (i.e. close to hedgerows) shall be fenced off. Exclusion zones should be considered around any hedgerows and beneath tree canopies, if present.

3.2.4 Restored land will be subject to an agreed aftercare period, during which time any problems with settlement, drainage and noxious weeds will be rectified.

3.3 Communication

3.3.1 Prior to the development and use of the construction compound, the following topics should be discussed with the landowner:

- The control of plant and animal diseases by retaining soil within the area of origin wherever reasonably practicable; and
- The location of known drains and any areas of potential surface water/ drainage issues during wet seasons to avoid whilst topsoil stockpiling

3.4 Soil stripping

3.4.1 Any vegetation taller than 1.0 m will be cut and removed from the site (in-line with the Precautionary Method of Working and Site Waste Management Plan), immediately before soil stripping.

- Topsoil must be kept in reasonably sized bunds for the duration of the required storage time.

- Topsoil must be dry when stripping is carried out (as a general rule when the material is below the plastic limit and not after heavy rainfall (i.e. >1 mm within 24 hours). If a 3 cm ribbon of soil cannot be formed by rolling it out by hand or if the ribbon cracks, then the soil is not sufficiently dry to strip. The soils can be deposited into temporary windrows prior to storage in bunds in order to dry out.
- Soil beneath the topsoil bund areas does not require stripping.
- Bunds will be located aware from stripped areas in order to prevent the migration of material back to the bare area.
- Protection measures should be used to isolate bunds to protect them from vehicles/ pedestrians potentially compacting the soils.

3.5 Topsoil storage

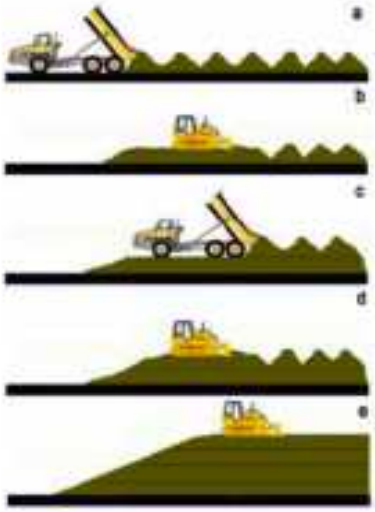
- It is anticipated the material will be stored for up to two years.
- The number of bund and the bund locations are outlined in the Temporary Works Plans (REP1-006), which have been submitted to support the DCO application.
- Tracked vehicles should be used to move the materials to the bund locations to reduce soil compaction and should be placed loosely on the bund.
- Once the bund is complete, the side and top of the bund should be firmed to reduce water infiltration.
- Grass mix should be sown onto the completed bunds if they are to remain in-situ for a period greater than six months.
- Once the soil has been stockpiled the compound can be laid down.

Soil stockpiling

Soil should be stored in an area of the site where it can be left undisturbed and will not interfere with site operations. Ground to be used for storing the topsoil should be cleared of vegetation and any waste arising from the development (e.g. building rubble and fill materials). Topsoil should first be stripped from any land to be used for storing subsoil.

Method 1 – Dry non-plastic soils

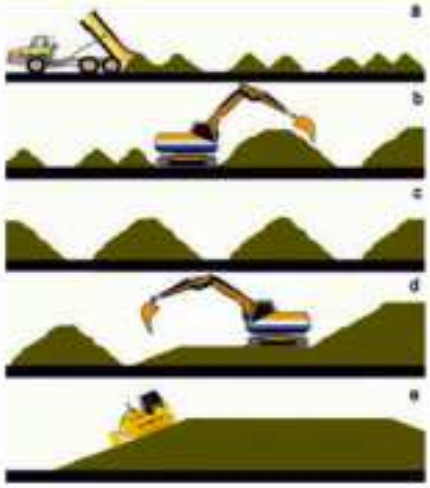
The soil is loose-tipped in heaps from a dump truck (a), starting at the furthest point in the storage area and working back toward the access point. When the entire storage area has been filled with heaps, a tracked machine (excavator or dozer) levels them (b) and firms the surface in order for a second layer of heaps to be tipped. This sequence is repeated (c & d) until the stockpile reaches its planned height. To help shed rainwater and prevent ponding and infiltration a tracked machine compacts and re-grades the sides and top of the stockpile (e) to form a smooth gradient.



Method 2 – Wet plastic soils

The soil is tipped in a line of heaps to form a 'windrow', starting at the furthest point in the storage area and working back toward the access point (a). Any additional windrows are spaced sufficiently apart to allow tracked plant to gain access between them so that the soil can be heaped up to a maximum height of 2m (b). To avoid compaction, no machinery, even tracked plant, traverses the windrow.

Once the soil has dried out and is non-plastic in consistency (this usually requires several weeks of dry and windy or warm weather), the windrows are combined to form larger stockpiles, using a tracked excavator (d). The surface of the stockpile is then regraded and compacted (e) by a tracked machine (dozer or excavator) to reduce rainwater infiltration.



Reference: *Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.*

3.6 Bund monitoring

3.6.1 Bunds should be inspected bi-annually, with the following conditions to be monitored/ maintained:

- The bunds should be weed-free
- Materials are monitored visually and any potential issues (i.e., instability, cross-contamination due to wash-off etc) are noted and escalated
- The quantity being stored has not exceeded the design proposal
- Testing may be required at the end of the storage period to ensure the soils are still fit for purpose. Any stockpiled excavated materials that fail to meet requirements may be considered as waste.

4. Post-construction and operation

4.1 Compound site clearance and replacing of soil

4.1.1 Once the Scheme has been completed, temporary buildings and services should be removed, along with any the stone and or geotextile layers. All temporarily used land should then be restored.

4.1.2 In preparation for the replacement of the topsoil, each bund should be sampled (throughout the depth of the bund) and tested to the agreed testing methods to be developed as stated in section 2.1 of this Outline SRP.

4.1.3 To protect soil quality:

- The soils should only be moved when they are dry/ below their plastic limit, to prevent compaction of the underlying soil.
- Herbicide such as glyphosate should be sprayed on the soil approximately 10 days prior to placing the soil back.
- Validation soil samples should be collected from the ground surface of the compound area and at locations along the temporary land take areas. Samples will be collected in near surface soils targeting high risk areas and tested for a standard suite of analysis to identify any potential pollution which may have occurred since baseline.
- The site will be litter picked to remove any remaining construction waste and stones larger than 100 mm diameter and the material treated as waste.
- The surface of the subsoil should be inspected to ensure that all construction material has been removed and that the site is in a state fit to receive the topsoil.
- If significant soil structural damage, or damage to existing land drains has occurred, install a suitably designed agricultural land drainage scheme into the subsoil and fill the trench with permeable back fill to the top of the subsoil.
- Remove compaction in the subsoil prior to replacing the topsoil unless the presence of utilities prevent deep cultivation in which case shallow harrowing is an alternative.
- Soils should be replaced with minimum vehicular movements to avoid re-compacting the loosened surface. Restoration should start at the furthest point from the exit to ensure that soils once deposited are not run on by earth moving machinery.
- Care should be taken to minimise compaction of the soil by carefully controlling traffic movement along defined routes and working only in dry conditions. If there are any wet patches on the haul roads, they should be covered with temporary metal tracks.
- Replace topsoil to its full depth, maintaining and tying into the original contours on either side of the disturbed area to allow surface water flow.

4.2 In-situ soil restoration

4.2.1 Once the soils have been restored, the works should be completed by:

- Loosening the soil to a suitable depth, to tie the topsoil and subsoil together. This can only be carried out in dry conditions and special care will be required to avoid damage to services and shallow drains if they are present.
- Soil loosening should be carried at an angle to the line of any drains and where possible, extended into the undisturbed soil on either side of the working area. The depth of working and the type of equipment used will be determined by the depth of compaction, which should be assessed by a suitably qualified person.
- The area will be observed, and any remaining construction waste and large stones will be removed. Any material removed during this stage will be disposed of correctly following the Waste Management Plan.
- If available, agricultural equipment should be used to loosen and aerate the topsoil and to provide connection with the subsoil.
- A seed bed should be established with secondary cultivation equipment such as discs, tines and press, as agreed with the landowner to help stabilise soil structure.

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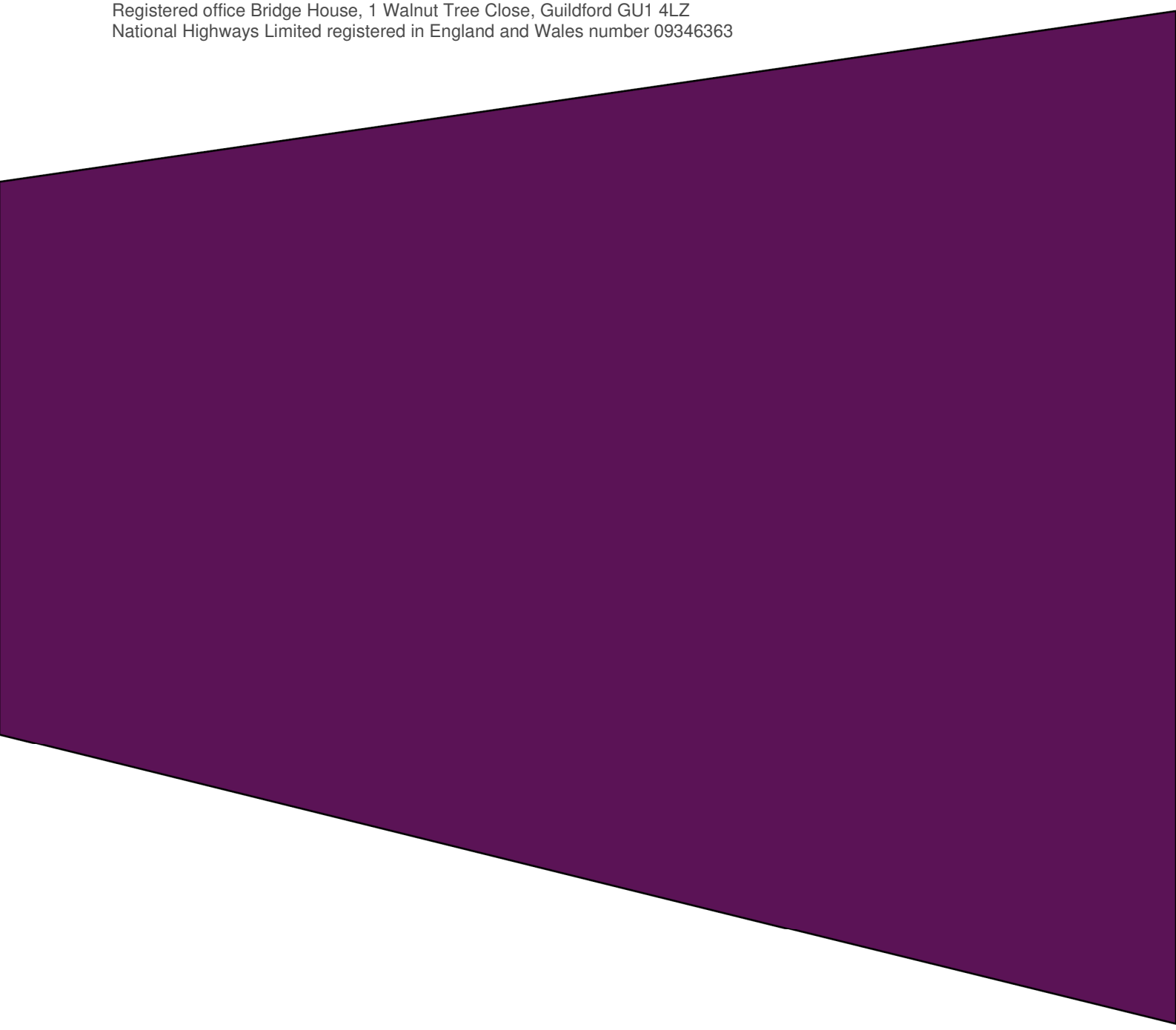

Annex B2: Noise and Vibration Management Plan

A57 Link Roads

TR010034

7.2 Environmental Management Plan (First iteration)

Annex B2: Noise and Vibration Management Plan

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

April 2022

Contents

Abbreviations

Term	Definition
BPM	Best Practicable Means
BS	British Standard
CoPA	Control of Pollution Act
DCO	Development Consent Order
dDCO	Draft Development Consent Order
DMRB	Design Manual for Roads and Bridges
ES	Environmental Statement
EMP	Environmental Management Plan
NVMP	Noise and Vibration Management Plan
REAC	Register of Environmental Actions and Commitments

1. Introduction

1.1. Objective

1.1.1. This Outline Noise and Vibration Management plan (NVMP) sets out a framework to be used by the appointed Principal Contractor when preparing the detailed NVMP for the A57 Link Roads Scheme prior to the commencement of works. It is based on the commitments set out in the ES for the Scheme, and specifically those detailed within the Environmental Management Plan (EMP) (First iteration) (REP6-007) and Register of Environmental Actions and Commitments (REAC) (REP6-008), which details the requirement for a NVMP to be developed.

1.1.2. The Scheme is a Nationally Significant Infrastructure Project (NSIP) and this Outline NVMP has been developed in support of National Highways' application for a Development Consent Order (DCO) to authorise construction, operation and maintenance of the Scheme. An Environmental Impact Assessment (EIA) has been carried out for the Scheme and is reported in the Environmental Statement (ES). The ES and other DCO documents prepared to support the application are available through the Planning Inspectorate project document library: TR010034-000603-A57 Link Road Examination Library Published.pdf (planninginspectorate.gov.uk).

1.1.3. In order to minimise the potential for noise and vibration nuisance, this Outline NVMP details the measures that the appointed Principal Contractor will be required to adopt to control and limit those emissions at residential properties and other sensitive receptors in the vicinity of the Scheme. This Outline NVMP applies to all construction activities occurring on the Scheme.

1.1.4. This Outline NVMP will be updated by the appointed Principal Contractor into a detailed NVMP prior to commencement of works in accordance with Requirement 4 in Schedule 2 of the draft Development Consent Order (dDCO) (REP1-041). The detailed NVMP will be one of a number of management plans that will be annexed to the EMP (Second iteration) under Requirement 4.

2. Noise and vibration

2.1. Introduction

2.1.1. This section will be updated by the appointed Principal Contractor for the purposes of the final version. It will set out the purpose of the final NVMP and set out the processes that will be adopted to minimise nuisance through the management, control and reporting of construction noise and vibration in accordance with relevant legislation, regulations and contractual requirements.

2.1.2. This Outline NMVP plan identifies the key items which will be included in the final NMVP as follows:

- Roles and responsibilities at project and site-specific levels
- The approach to construction noise and vibration management
- Section 61 Control of Pollution Act (CoPA) 1974 consent process
- Noise and vibration control measures
- Noise and vibration monitoring
- Communication and complaints arrangements
- Reporting requirements.
- The criterion for noise insulation and rehousing

2.2. Relevant legislation

[The appointed Principal Contractor will need to update this section prior to construction and provide an overview of the key legislation that the Scheme has to comply with.]

Control of Pollution Act 1974

2.2.1. The CoPA 1974 gives local authorities powers for controlling noise and vibration from construction sites and other similar works. These powers may be exercised either prior to, or during the works.

2.2.2. Best Practicable Means (BPM) will be applied during construction works to reduce noise and vibration impacts as far as is reasonably practicable.

Best practicable means

2.2.3. The BPM for noise control will be applied during construction works to minimise noise (including vibration) at neighbouring residential properties and other sensitive receptors arising from construction activities.

2.2.4. BPM are defined in section 72 of CoPA and section 79 of the Environmental Protection Act 1990.

2.3. Management of site activities

Main roles and responsibilities

2.3.1. In relation to the control and management of noise and vibration, the appointed Principal Contractor shall establish the main roles and responsibilities of site personnel to ensure the proposed control measures are being implemented during the construction activities. These will be set out in Section 2 of the EMP (Second iteration) and within the detailed NVMP.

Section 61 compliance

2.3.2. The appointed Principal Contractor will be responsible for developing a monitoring programme to ensure compliance with any Section 61 consents. Specific actions required to ensure compliance will be included within the detailed REAC at the Detailed Design stage.

Working hours

Normal working hours (NWHs)

2.3.3. Normal Working Hours will be defined as per Action reference GEM1.4 in Table 2-1of the REAC (REP6-008). All works will be undertaken during NWH only, unless otherwise consented.

Start-up and close down periods

2.3.4. To maximise productivity within the NWH hours; a period of up to one hour before core working hours is allowed for the start-up of activities as per Action reference GEM1.4 in Table 2-1of the REAC (REP6-008).

Additional working hours

2.3.5. Any additional working hours or out of hours working, will be identified within the Section 61 CoPA application which will require approval from the relevant local authority as per Action reference NV1.31.4 in Table 2-1of the REAC (REP6-008).

Consultation

2.3.6. Consultation will be carried out with the environmental health departments of the local authorities regarding the management of noise and vibration during construction of the Scheme.

2.3.7. The implementation of a Community Engagement Plan will ensure that local residents and other affected parties are kept informed of the progress of the works, including when and where the noisiest activities would be taking place and how long they are expected to last. Communication mechanisms include newsletters, newspaper and radio announcements, and communications from the appointed Principal Contractor.

2.4. Noise and vibration control

Noise control strategy

2.4.1. The general principles of noise management, considered as BPM, are given below:

2.4.2. Control at source:

- Equipment – newest, well maintained equipment with lower noise emissions
- Equipment – controlling plant and machinery noise e.g. by retrofitting controls
- Equipment - indirect methods of controlling noise e.g. acoustic screens
- Equipment - indirect methods of controlling noise e.g. using alternative construction methodologies; selection of quieter tools/machines; application of quieter processes.

2.4.3. Control across site by:

- Administrative and legislative control
- Control of working hours
- Control of delivery areas and times
- Careful choice of compound location
- Physically screening site
- Control of noise via contract specification of limits
- Noise monitoring to check compliance with noise level limits, cessation of works until alternative method is found
- Use of vehicles, plant and equipment that generate lower levels of noise or vibration should be selected over alternatives that produce higher levels of noise or vibration as far as reasonably practicable
- Many of the activities which generate noise can be mitigated to some degree by careful operation of machinery, use of tools and the management of personal behaviours. This may best be addressed by toolbox talks and site inductions.

2.4.4. Mitigation will be considered in the following order:

- BPM as identified above
- Specific noise and vibration control measures as identified below
- Where, despite the implementation of these measures, there are residents who would still be affected (e.g. shift workers, elderly, sick or disabled residents, etc.), the possibility of an offer of temporary relocation may be considered, if appropriate. These residents would be identified prior to works taking place. The recommendations of BS 5228: 2009+A1:2014 ‘Code of practice for Noise and Vibration Control on Construction and Open Sites’, will be implemented, together with the specific requirements of this management plan.

2.5. Specific noise and vibration control measures

2.5.1. To mitigate and understand the noise and vibration impact of the proposed works and to effectively implement controls, a noise and vibration specialist with relevant competences and resources, will be appointed. The noise and vibration specialist will be required to undertake or coordinate the preparation of noise and vibration risk assessments for all works that require a prior consent under Section 61 of CoPA.

2.5.2. Regular site inspections are to be undertaken to ensure that suitable and appropriate mitigation measures are being implemented to reduce noise and vibration emissions

2.5.3. The appointed Principal Contractor will consult with the Environmental Health Departments at the relevant Local Planning Authorities prior to the commencement of construction works. From this, guidance will be obtained on their requirements for managing and controlling noise and vibration from construction works, including communication preferences for updates during the construction phase.

2.5.4. The appointed Principal Contractor is a member of the Considerate Constructors Scheme that is recognised by industry and the Government for encouraging firms to be sensitive to the environment.

2.5.5. Piling methods will be selected to carefully minimise noise and vibration impacts at receptors. Although the Applicant's preference is to use a rotary bored method at all piling locations, which results in low levels of vibration, it may not be possible due to the ground type or other engineering constraints. The piling methods that will be used for the Scheme will be confirmed during the detailed design stage.

2.5.6. Alternative piling methods such as vibratory piling or the Giken method will be considered at locations where methods producing the lowest levels of vibration are not feasible at certain locations. Methods that generate high levels of vibration such as percussive piling shall be avoided as far as practicable.

2.5.7. In proximity to the proposed Mottram Underpass, the use of percussive piling should be avoided unless geologically essential. If the use of percussive piling cannot be avoided, the following measures should be considered to lessen the impact of noise:

- Pre-boring to reduce the duration of impulsive sounds and vibration
- Enclosing the pile driving system in an acoustic shroud,
- Preventing metal-to-metal contact during hammer strikes by introducing a non-metal dolly between the hammer and the driving helmet
- Appropriate measures to minimise disturbance from 'other' sources of piling noise, such as the screeching of pulleys or guides, clanking of locking kelly bars and ringing of piles
- Consideration of working hours required for piling and the acceptability of these to local residents

- Reducing the energy input per hammer strike, which would decrease vibration but increase the duration of the piling
- Setting noise and vibration control targets, accompanied by monitoring for compliance

2.5.8. In addition to specific requirements of the relevant local authority, the following more specific control measures will be adopted:

- The equipment and construction plant will comply with relevant EC Directives and corresponding UK legislation on noise emissions.
- Plant certified to meet the current EU legislation and should be not be louder than the noise levels provided in Annex C and D of BS 5228-1
- The methodology / technique for noisy operations will be carefully considered to ensure that noise is kept to a practicable minimum. This includes the reduction of the level of the working platform used in the construction of the Mottram Moor Link Road so that the cutting slopes provide additional screening of noise
- Undertaking only one noise-generating operation in sensitive areas at one time.
- Without prejudice to the other requirements of this section, the appointed Principal Contractor shall comply with the recommendations set out in BS 5228:2009 + A1:2014 Code of practice for noise and vibration control on construction and open sites, Part 1: Noise.
- Vehicles and mechanical plant, and their exhausts, will be fitted with effective exhaust silencers and maintained in a good and effective working order and operated in a manner to minimise noise emissions.
- All ancillary pneumatic percussive tools should be fitted with mufflers or suppressors as recommended by the manufacturers which should be kept in a good state of repair
- Machines in intermittent use will be shut down or throttled down to a minimum during periods between working.
- The site compound and static machines be sited as far as is practicable from noise sensitive buildings
- Consideration will be given to the ‘off network’ haulage routes that fall within the footprint of the Scheme, with specific reference made to the predicted number of vehicle movements to and from temporary welfare and storage sites, and location of the off network routes.
- Where demolition and other breaking out activities are necessary, percussive or impact breaking equipment / methods will only be used where other less noisy techniques are not reasonably practicable.
- Care would be taken when loading and unloading vehicles to avoid unnecessary noise.
- The speed of vehicle movements will be required to be reduced.
- Ensure that operations are designed to be undertaken with any directional noise emissions pointing away from noise-sensitive receptors.
- All generators and compressors will be “sound reduced” models fitted with acoustic linings / sealed acoustic covers where appropriate.
- Drop heights will be minimised when loading vehicles with rubble.

- Vehicles will be prohibited from waiting within the site with their engines running or alternatively, located in waiting areas away from sensitive receptors.
- Vehicles will not be permitted to wait or queue on the public highway with engines running
- Local hoarding, screens or barriers will be erected to shield particularly noisy activities. The relevant locations include the boundary of the construction compound and work sites close to sensitive receptors. The appointed Principal Contractor has indicated the planned use of a 3 m bund along the perimeter of the compound.
- Piling will be carried out with the method that minimises both noise and the transmission of vibration to sensitive receptors.
- Hours of operation will be strictly enforced, and will be in line with the Section 61 application agreed with the local authority and enforceable under this agreement.
- Wherever practicable, fabrication will be undertaken off site.
- As far as reasonably practicable noise from reversing alarms will be controlled and limited. Broadband reversing alarms will be used where possible.
- Plant and equipment liable to create noise and/or vibration whilst in operation will, as far as reasonably practicable, be located away from sensitive receptors.
- Where practicable, plant and materials will arrive on site during normal working hours.
- Where practicable plant will be left in position at the end of the day, thus minimising vehicle trips and minimising the required ‘start up’ and ‘close down’ durations.
- Cleaning of concrete mixers to not be undertaken by hammering the drums.

2.6. Noise monitoring

2.6.1. Noise monitoring will take the form of either unattended long-term noise monitoring, or short-term attended noise monitoring. The decision to use either type of monitoring will be based on the nature and location of the works being undertaken, and subject to discussion and agreement with the Local Planning Authority.

Unattended continuous noise monitoring

2.6.2. Noise monitors utilised will be Class 1 IEC 61672-1:2013 compliant. All monitoring equipment will be calibrated in accordance with either the relevant standards or the manufacturer / supplier recommendations as appropriate, but it is anticipated that this will be at least annually.

2.6.3. Unattended monitoring is considered to be required only when a risk of SOAEL exceedances is present at a given location. A maximum of 5 unattended noise monitors are envisaged at any one time during the construction programme. The following locations have been identified as potential sites for noise monitoring as works progress and the potential of disturbance arises:

- Four Lanes
- Old Hall Lane / Old Road
- Tollemache Close
- Meadowcroft / Littlefields
- Carrhouse Lane
- Woolley Bridge

2.6.4. Noise monitors may be set up at other locations in consultation with the relevant local authority.

Attended noise monitoring

2.6.5. To supplement the agreed unattended noise monitoring, attended noise measurements will be carried out on a risk-based approach. A programme of attended noise monitoring would be developed by the appointed Principal Contractor in consultation with the relevant local authority, for example at the commencement of a new significant activity. Any of the locations identified above (paragraph 2.6.3) may be subject to attended noise monitoring. However, attended monitoring is likely to focus on other areas with potential for adverse effects, such as A57 Hyde Road, Lodge Court, and Edge Lane.

2.7. Noise Insulation and Temporary Re-housing

2.7.1. Noise Insulation or temporary re-housing, or the reasonable costs thereof, will be offered to residential receptors which meet the following criteria:

2.7.2. Noise Insulation or temporary re-housing will be offered where construction noise levels exceed trigger level criteria for a time period exceeding either;

- 10 days in any consecutive 15 day period, or
- any 40 days in any consecutive 6 month period.

2.7.3. Noise insulation would be triggered by the higher of;

- a noise level 5 dB above the pre-construction ambient noise levels, or
- the noise insulation trigger levels presented in Table 2-1

2.7.4. Temporary re-housing would be triggered by the higher of;

- a noise level 10 dB above the pre-construction ambient noise levels, or
- the temporary rehousing trigger levels presented in Table 2-1.

Table 2-1 – BS 5228 Noise insulation and temporary re-housing noise thresholds

Day	Time period	Averaging time, T	Noise insulation trigger level ($L_{Aeq,T}$ dB)	Temporary rehousing trigger level ($L_{Aeq,T}$ dB)
Monday to Friday	07:00 – 08:00	1 hour	70	80
	08:00 – 18:00	10 hours	75	85
	18:00 – 19:00	1 hour	70	80
	19:00 – 22:00	3 hours	65	75

	22:00 – 07:00	1 hour	55	65
Saturday	07:00 – 08:00	1 hour	70	80
	08:00 – 13:00	5 hours	75	85
	13:00 – 14:00	1 hour	70	80
	14:00 – 22:00	3 hours	65	75
	22:00 – 07:00	1 hour	55	65
Sunday and Public Holidays	07.00 – 21.00	1 hour	65	75
	21.00 – 07.00	1 hour	55	65
All noise levels are predicted at 1m in front of the most exposed of any windows and doors in any façade of any eligible dwelling				

Table Source: British Standards Institution (2014). BS 5228 Part 1, Table E2.

2.8. Vibration control strategy

2.8.1. The appointed Principal Contractor will use BPM to control groundborne vibration and any consequent groundborne noise. The appointed Principal Contractor will undertake vibration risk assessments and identify where significant impact thresholds are expected to be exceeded. The relevant thresholds for determining significant impacts (for both building damage risk and human disturbance) will be sourced from relevant standards and guidance including BS 5228 Code of practice for noise and vibration control on construction and open sites. Part 2: 2009+A1:2014 Vibration, BS 7385 Parts 1 and 2, and BS 6472 Part 1, and the DMRB. Where relevant, other stakeholder imposed threshold values will also be complied with**,** particularly in the case of buried utilities infrastructure.

2.8.2. Peak Particle Velocity (PPV) magnitudes in excess of 1 mms^{-1} external to a building will be used as an indicator of a potential significant impact on occupants of a residential building (although higher levels will be tolerated in certain circumstances).

2.8.3. The appointed Principal Contractor will use BPM to control vibration levels so that the PPV measured at the base of any building in accordance with BS 7385 does not routinely exceed a level of 5 mms^{-1} (or 3mms^{-1} for vulnerable buildings). Where these levels are predicted to be exceeded a more detailed assessment in accordance with the guidance provided in BS 7385 Parts 1 and 2 will be undertaken to further inform the level of risk of damage which may result in the commissioning of an appropriate defects survey.

2.8.4. Works expected to generate component PPVs above 1 mms^{-1} within buildings will be notified to the relevant local authority in the relevant Section 61 application along with enhanced monitoring proposals.

2.8.5. In addition, The appointed Principal Contractor will apply any appropriate measures to protect medical, scientific and commercial premises, or properties that merit increased protection due to their structure or status that are especially sensitive to vibration.

2.8.6. Vibratory rolling will be minimised where practicable within 20m of sensitive receptors to avoid perceptible vibration.

2.9. Vibration monitoring

2.9.1. Vibration impacts generated by the works will be managed on a risk-based approach as outlined above. Vibration monitoring may be undertaken during significant vibration generating construction activity.

2.9.2. Vibration monitoring will take place in proximity to any impact piling activities that occur close to the proposed Mottram Underpass and where specified by the design. The following locations have been identified as potential sites for vibration monitoring as works progress and the potential of disturbance arises:

- Old Road
- Tollemache Close

2.9.3. Additional vibration monitoring locations may be established at other locations in consultation with the relevant local authority.

2.10. Section 61 applications and compliance

Development of Section 61 consent applications

2.10.1. For noise and vibration, the appointed Principal Contractor will seek formal consent in accordance with Section 61 of the Control of Pollution Act 1974 to their proposed methods of work and to the steps proposed in order to minimise noise and vibration nuisance. Formal consent will be sought for any out of hours working and for any daytime works which have potential to generate significant effects.

2.10.2. The appointed Principal Contractor will consult on minimising nuisance through the proposed noise and vibration control measures with the relevant local authority through the development of the EMP (Second iteration).

2.10.3. Section 61 applications will contain the key construction working methods and the proposed mitigation measures, a plant list and information on the predicted noise and vibration levels generated by the works.

2.11. Communications

Stakeholder communication

2.11.1. The appointed Principal Contractor will maintain and develop a Community Engagement Plan in consultation with stakeholders.

Complaints

2.11.2. All complaints received will be recorded. All complaints will be investigated, and feedback will be given to the complainant. Where necessary, corrective actions will be implemented. The relevant local authority will be advised of any justified complaint, actions taken to investigate, and any actions found necessary to put in place.

Records

2.11.3. Documentation and records will be produced, filed and maintained to record the activities and processes used to manage noise and vibration.

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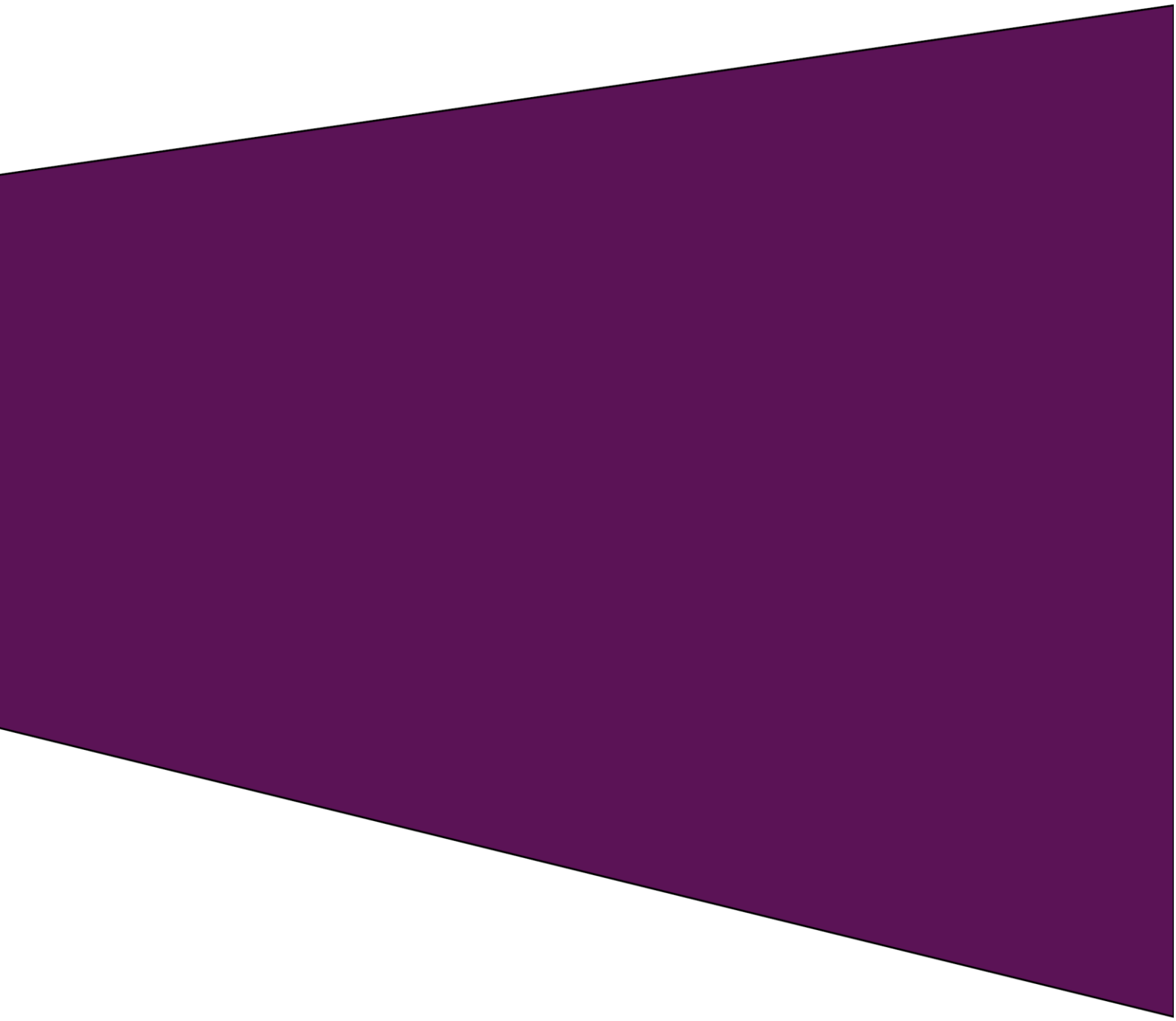

Annex B3: Construction Water Management Plan

A57 Link Roads

TR010034

7.2 Environmental Management Plan (First iteration)

Annex B3: Outline Construction Water Management Plan

APFP Regulation 5(2)(a)

Planning Act 2008 Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

January 2022

Table of contents

1. Introduction

1.1 Purpose of document

1.1.1 This Outline Construction Water Management plan (CWMP) sets out a framework to be used by the appointed Principal Contractor when preparing the final CWMP for the A57 Link Roads Scheme prior to the commencement of works.

1.1.2 The Scheme is a Nationally Significant Infrastructure Project (NSIP) and this Outline CWMP has been developed in support of National Highways' application for a Development Consent Order (DCO) to authorise construction, operation and maintenance of the Scheme. An Environmental Impact Assessment (EIA) has been carried out for the Scheme and is reported in the Environmental Statement (ES). The ES and other DCO documents prepared to support the application are available through the Planning Inspectorate project document library: TR010034-000603-A57 Link Road Examination Library Published.pdf (planninginspectorate.gov.uk).

1.1.3 This Outline CWMP is based on the commitments set out in the ES for the Scheme, and specifically those in the Environmental Management Plan (First iteration) (APP-183) and the Register of Environmental Actions and Commitments (REAC) (REP1-037).

1.1.4 The CWMP is one of a number of management plans that must be included in the EMP as required by Requirement 4 in Schedule 2 of the draft Development Consent Order (DCO).

1.1.5 The principal purpose of a CWMP is to set out how construction works will be managed in a way that minimises the risk of adverse effects on receptors in the water environment. Receptors include watercourses, lakes, groundwater bodies and surface water features and associated habitats and species. The CWMP will also cover management of flood risks to (and generated by) the Scheme.

1.2 Overarching guidance

1.2.1 All construction activities due to the Scheme will be undertaken in accordance with the relevant best practice guidance. These include the 'Guidance for Pollution Prevention (GPPs) and CIRIA C532 'Control of Water Pollution from Construction Sites' (refs 1 and 2). In particular the Scheme will follow the good environmental practice guidance detailed in GPP5: 'Work and maintenance in or near water' (ref. 3).

2. Receptors

2.1 Introduction

2.1.1 This section of the CWMP will set out the receptors in the surface water environment potentially exposed to the effects of construction activities. In accordance with the source, pathway receptor model, the relevant pathways and receptors will be assessed in order to develop suitable and effective control measures. This will allow specific hotspots for surface water pollution and contamination to be identified efficiently, including those area liable to flooding, thereby reducing risk of adverse effects on surface waters.

2.2 Surface water feature

2.2.1 This section of the CWMP will map and list in summary form the surface water features that are receptors to the Scheme. The River Etherow, Hurtsclough Brook and Glossop Brook (Main Rivers), Tara Brook and a number of smaller unnamed watercourses (Ordinary Watercourses) are the principal surface water receptors.

2.3 Groundwater feature

2.3.1 This section of the CWMP will map and describe the groundwater that is a receptor to the Scheme. The Manchester and East Cheshire Carboniferous Aquifers Water Framework Directive water body is the underlying groundwater body.

2.4 Areas of fluvial and surface water flood risk

2.4.1 This section of the CWMP will summarise flood risks associated with the Scheme. It will provide sufficient spatial context for people planning works in high risk areas to ensure minimal effects on the surface water environment, and to implement effective and safe responses to flood events. It will be informed by the Scheme Flood Risk Assessment (APP-056) and subsequent updates of that document.

3. Management Plan

3.1 Introduction

3.1.1 This section of the CWMP will set out the details of how construction activities will be managed to protect the surface water environment from adverse effects. Key components of this plan are briefly set out below.

3.2 Regulation of construction activities affecting the surface water environment

3.2.1 Authorisation to undertake temporary and permanent works in the Main River, bylaw distance of the Main River, ordinary watercourses and (where appropriate) floodplain will be sought under the appropriate protective provisions for the protection of the Environment Agency (EA) and drainage authorities (for this Scheme, Tameside Metropolitan Borough Council and Derbyshire County Council). Drafts of these protective provisions are set out in Schedule 9 parts 3 and 7 of the draft Development Consent Order (REP1-041). These permissions will set out how any adverse effects of construction activities on the water environment will be managed.

3.3 Methods of work

3.3.1 Methods of works for construction activities with the potential to affect the surface water environment will be prepared. These will include instructions on how these activities will be undertaken in a way that effectively manages their potential adverse effect on surface waters. These methods of work will be informed by a) the guidance set out in the CWMP, and b) the implementation of best practice by the Principal Contractor.

3.4 Fluvial and surface water flood risk

3.4.1 Authorisation for temporary or permanent works will be sought from the relevant regulatory body (as set out in section 3.2 above).

3.4.2 The information supporting applications for all works in Flood Zone 3 (shown in Figure 13.4 of the Environmental Statement (APP-148)), or areas known to be vulnerable to surface water flooding will describe how the effects of flood risk to (and generated by) the Scheme will be managed effectively. Measures will include:

- Registering with EA Floodline Warnings Direct and implementing an appropriate response strategy.
- Having signs to clearly demarcate the flood zone extent.
- Ceasing works during flood events in areas of know flood risk.
- Not storing any hazardous materials or concrete washout facilities in areas prone to flooding.
- Removing all waste immediately and having spill kits nearby.

3.5 Abstraction from surface waters

3.5.1 If construction activities require abstraction of water from surface sources, assessments will be completed and, where exemptions do not apply, licences sought from the EA (ref. 6).

3.6 Abstraction from groundwater

3.6.1 It is expected that abstraction of groundwater will be required as part of the construction activities and groundwater drainage during the operational phase of the Scheme. This section will outline the locations where dewatering is likely to be required and associated mitigation measures and monitoring that will be implemented.

3.6.2 Licences for these abstractions (where exemptions do not apply) will be sought from Tameside Metropolitan District Council and the Environment Agency (ref. 6).

3.7 Discharge to surface waters

3.7.1 If construction activities involve discharge of water to surface (or ground) authorisation will be sought from the Environment Agency and Tameside Metropolitan District Council in accordance with advice on (and exemptions from) environmental permits (ref. 5).

3.7.2 In particular, guidance from the regulatory position statement on excavations to surface water (ref.6) will be followed when undertaking dewatering activities.

3.8 Sewage effluent

3.8.1 The appointed Principal Contractor will manage the disposal of foul and sewage effluents appropriately. It will be preferable to connect to a local foul sewer system, but if this is not possible then a local package treatment works will be deployed, and appropriate authorisation will be sought.

3.9 Managing surface water runoff

3.9.1 Rainfall onto construction sites will generate ‘dirty’ (most often sediment laden) surface water runoff. Wherever practical clean and dirty runoff will be kept separate to minimise the volume of dirty water. Appropriate water treatment measures (e.g. attenuation) will be implemented to ensure runoff returned to natural surface waters does not cause pollution or damage the water environment. Where appropriate, methods of works will set out how surface water will be managed. Dynamic risk assessments will be undertaken for temporary/unplanned works; appropriate methods of work will be developed and implemented.

3.10 Pollution prevention measures

3.10.1 Best practice and guidance will be applied to prevent pollution. Where appropriate, pollution prevention guidelines will be adhered to (e.g. ref 1).

- Fuel will be handled and stored in accordance with the Control of Pollution Regulations.

- The run-off of silt and contaminants will be controlled by minimising land disturbance and digging earthworks to retain, filter and cut off flows of surface water.
- Maintenance of plant, vehicles and equipment will be carried out at least 20 m from any watercourse or drain where possible. Spill kits, drip trays and drain seals will be used where this is not possible.

3.11 Water use minimisation measures

3.11.1 The Scheme will apply the water use minimisation hierarchy. The highest reasonably practicable option will always be adopted. The hierarchy is as follows (from most to least preferred option):

- Eliminate
- Substitute
- Reduce
- Reuse
- Recycle
- Disposal

3.12 Monitoring

3.12.1 Monitoring will be developed by the appointed Principal Contractor and would comprise regular visual inspection of construction sites and receiving watercourses to assess the effectiveness of mitigation measures to avoid and minimise pollution risk to the water receptors.

3.12.2 Groundwater levels will be monitored during any periods of dewatering along with water quality of any discharged groundwater. The groundwater monitoring strategy will be developed during the Detailed Design stage by the appointed Principal Contractor in consultation with the Environment Agency.

3.13 Long term maintenance and management of drainage network

3.13.1 To achieve an efficient and effective maintenance regime, a catchment-based approach will be developed by National Highways, targeting all detention ponds, sediment catchpits and all ditches along the whole road catchment rather than individual sediment catchpits/ditches.

3.13.2 Based on industry guidance (ref 6.) the following cyclic regime is proposed:

- Sediment catchpits – Clear/empty silt and debris from catchpits annually.
- Ditches – Clear ditches by removing material that could impair operation – every 5 years.
- Balancing / attenuation ponds – Clear silt and all material that could impair operation – every 10 years.

3.13.3 The long-term management and maintenance regime of drainage assets including sediment catchpits, ditches, and attenuation ponds will be developed

by National Highways and contained within the Environmental Management Plan (Third iteration) which relate to the post construction and operational stage of the Scheme. The EMP (Third iteration) will comprise a cyclic maintenance of drainage assets to:

- Prolong asset life
- Deliver sustained performance
- Keep assets safe for customers

3.13.4 Highways England has a legal obligation under the Highways Act 1980 and the Infrastructure Act 2015 to maintain its assets appropriately.

4. Emergency measures

4.1.1 The works will follow an Emergency Spillage Response Plan and an Emergency Flood Response Plan developed by the appointed Principal Contractor before the start of construction and secured under Requirement 4 of the DCO (REP1-041).

5. References

1	NetRegs, undated. Guidance for Pollution Prevention (GPPs) - Full list. [online] Available at: < [redacted] [Accessed 02 February 2021].
2	Ciria., 2001. Control of water pollution from construction sites - Guidance for consultants and contractors. [online] Ciria. Available at: < [redacted] > [Accessed 23 July 2005].
3	NetRegs, 2018. Works and maintenance in or near water: GPP 5. [online] Available at: < [redacted] > [Accessed 02 February 2021]
4	Environment Agency, 2016. Guidance - discharges to surface water and groundwater: environmental permits. [online] Available at: < Discharges to surface water and groundwater: environmental permits - GOV.UK (www.gov.uk)> [Accessed 04 February 2021]
5	Environment Agency, 2014. Guidance - Water management: abstract or impound water. [online] Available at: < Water management: abstract or impound water - GOV.UK (www.gov.uk) > [Accessed 04 February 2021]
6	Design Manual for Roads and Bridges (DMRB), GM 701 Asset delivery asset maintenance requirements, March 2020 [online] Available at: < [redacted]

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Annex B4: Site Waste Management Plan

A57 Link Roads

TR010034

7.2 Environmental Management Plan Annex B4: Outline Site Waste Management Plan

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

January 2022

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Chapter Pages

Tables

1. Introduction

1.1.1 This Outline Site Waste Management plan (SWMP) sets out a framework to be used by the appointed Principal Contractor when preparing the detailed SWMP for the A57 Link Roads Scheme prior to the commencement of works.

1.1.2 The Scheme is a Nationally Significant Infrastructure Project (NSIP) and this Outline CWMP has been developed in support of National Highways' application for a Development Consent Order (DCO) to authorise construction, operation and maintenance of the Scheme. An Environmental Impact Assessment (EIA) has been carried out for the Scheme and is reported in the Environmental Statement (ES). The ES and other DCO documents prepared to support the application are available through the Planning Inspectorate project document library: TR010034-000603-A57 Link Road Examination Library Published.pdf (planninginspectorate.gov.uk).

1.1.3 This Outline SWMP is based on the commitments set out in the ES for the Scheme, and specifically those detailed within the Environmental Management Plan (First iteration) (APP-183) and Register of Environmental Actions and Commitments (REAC) (REP1-037).

1.1.4 An EMP (Second iteration) will be produced by the appointed Principal Contractor to manage environmental effects during the construction phase of the Scheme, at which stage the REAC will be combined so they become a single document. This will broadly follow the EMP (First iteration) and will reflect the mitigation measures set out in the REAC requirements.

1.1.5 In December 2018, the Government published the Resources and Waste Strategy for England. The strategy aims to put sustainable resource management at the centre of its ambitions on resources and waste. This includes the preservation of material resources by minimising waste, promoting resource efficiency and moving towards a Circular Economy.

1.1.6 The strategy provides longer-term policy direction in line with the United Kingdom's 25 Year Environment Plan, the United Kingdom's goals for improving the environment.

1.1.7 Drafting and adhering to a SWMP ensures measures are taken during the design stage to support the Circular Economy and move waste up the waste hierarchy, both of which support the ambitions of the Resources and Waste Strategy. During the construction stage, a SWMP ensures the Scheme it is written for records all relevant waste Duty of Care information, helping to prevent waste crime from occurring, which protects human health and the environment.

1.1.8 This outline SWMP supports Chapter 10 Material assets and waste of the ES (APP-066) and has been prepared to demonstrate how waste generated during the Scheme will be minimised and controlled to reduce impacts during the construction phase.

1.1.9 Preliminary information included in this outline SWMP will be updated and used by the Principal Contractor to develop the SWMP at Detailed Design stage. The detailed SWMP will be included within Annex C of the Scheme's EMP (Second iteration).

1.1.10 The detailed SWMP will ensure that all waste streams are dealt with appropriately and as sustainably as possible. It will identify the types of waste to be produced by the Scheme and forecast the amounts to be generated (see **Table 1**). In Chapter 10: Material assets and waste of the ES (APP-066), the material assets used, and waste generated through construction of the Scheme were estimated from the available design information (contained in the Bill of Quantities). These quantities have been included in Table 1; however they will be updated at the Detailed Design stage as the design and construction programme becomes more advanced.

1.1.11 Throughout construction, quantities of waste produced will be recorded and the SWMP updated accordingly (see **Table 2**).

2. Waste Hierarchy

2.1.1 The EU Waste Framework Directive 2008/98/EC (WFD, 2008) sets out the basic concepts and definitions in relation to waste management. Article 4 of the directive sets out five steps for dealing with waste, ranked according to environmental impact - the 'waste hierarchy'.

2.1.2 Prevention, which offers the best outcomes for the environment, is at the top of the waste hierarchy, followed by preparing for reuse, recycling, other recovery and disposal, in descending order of environmental preference. These principles will be applied in waste prevention and management for the Scheme.

2.1.3 The waste hierarchy aims to ensure delivery of the best environmental outcome, by gaining the maximum benefits from material assets and generating the minimum amount of waste.

2.1.4 The mitigation section of ES Chapter 10 details specific measures that will be carried out on the Scheme, following the priority order of the waste hierarchy. The sections below set out generic steps that can be taken to follow the waste hierarchy.

Waste Prevention

2.1.5 Prior to the start of any works, primary aims will be to avoid the creation of waste. Actions taken during the detailed design phase and prior to construction have the greatest potential to reduce waste.

2.1.6 The appointed Principal Designer and Principal Contractor will work together to seek to optimise material efficiency, in accordance with the Waste and Resources Action Programme (WRAP) design out waste principles. Such efficiencies may include:

- use of standardised components and prefabricated materials
- avoidance of using hazardous materials, which could become hazardous wastes
- specifying materials for design which generate limited wastes
- prioritising use of secondary or recycled materials over primary materials
- consideration of the life cycle for all materials used.

2.1.7 Waste prevention will also be achieved by putting measures in place to minimise and/or reduce the potential for waste such as:

- ensuring only correct amounts of materials are delivered
- use of 'just in time' deliveries onto the Scheme to reduce storage requirements and minimise the potential for accidental damage or weather damage
- maintaining good communication with suppliers and trades people (ensuring returns are acceptable, and no abortive works are undertaken)
- management of subcontractors to ensure they adhere to appropriate waste minimisation procedures (consider penalties for non-compliance)

2.1.8 These waste prevention measures will be detailed in full and secured by the detailed SWMP.

Preparing for reuse

2.1.9 Once waste generation has been prevented or minimised wherever possible, then opportunities for the reuse of excavated materials will be considered. Opportunities may include:

- the reuse of road surfacing, paving, concrete and rubble in temporary haul roads or as make-up for the new road layout
- use of soil improvement techniques to improve the engineering properties of excavated materials to increase their potential for retention on the Scheme
- seeking opportunities to reuse unsuitable or surplus excavated materials outside of the DCO boundary on local developments concurrent to the construction phase of the Scheme.

2.1.10 An environmental permit or a registered exemption under the Environmental Permitting (England and Wales) Regulations 2010 or management in accordance with the CL:AIRE Definition of Waste: Code of Practice (DoW CoP) will be required to enable reuse of suitable excavated materials in accordance with the current waste regulatory framework (both on or outside of the Scheme's redline boundary).

Recycle

2.1.11 Following best endeavours to prevent generation of waste and promote the reuse of excavated materials, waste may still be generated as a result of the Scheme. In this case, recycling of waste will be considered to allow use either on or off the Scheme.

2.1.12 To promote recycling of waste during construction it will be segregated onsite (through provision of containers for plastics, cardboard, timber, metal, and rubble) and/or by waste management contractors at offsite waste sorting facilities.

3. Proximity Principle

3.1.1 As part of their construction assessment, the appointed Principal Contractor will include the option of using local facilities for waste management, in line with the Proximity Principle, which is to manage waste as close to the point of generation as possible, so as to reduce the carbon footprint of managing waste from the Scheme.

4. Waste targets

4.1.1 As identified in ES Chapter 10, there are several targets already in place for the Scheme, these include:

- 99% of the excavated soil to be reused onsite, which would reduce the need for materials and generation of waste to be managed or disposed of offsite and would ensure the Scheme achieves a cut/fill balance
- a commitment to achieve, at minimum, 30% recycled content in material assets used on the Scheme
- a commitment to recycle or recover 95% of wastes that leave site, therefore diverting them from landfill

4.1.2 At detailed design or during construction further targets and/or Key Performance Indicators may be added to those above.

5. Waste storage onsite

5.1.1 Wastes will require segregation on the Scheme. To facilitate this:

- an appropriate number of segregation areas will be established.
- at these areas, waste streams will require segregation into separate containers and be removed to a suitably licensed waste facility.
- each container will require clear labelling, indicating the type of waste contained within
- waste must be stored in a safe and controlled manner, without causing harmful impacts to human health and the environment. Containers used to store waste must prevent leaks or spills.

Hazardous Waste

5.1.2 Although contaminated soil from excavations are not expected, if any is encountered, risks to human health and controlled waters from encountering it will be mitigated by the Principal Contractor as detailed in the EMP.

6. Waste licensing and transport

6.1.1 The reuse or treatment of waste onsite will require an environmental permit or a registered exemption under the Environmental Permitting (England and Wales) Regulations 2010 or management in accordance with the CL:AIRE DoW CoP.

6.1.2 Wastes requiring off-site management shall be transported from the Scheme by a waste carrier registered under the Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations 1991.

6.1.3 The appointed Principal Contractor and registered carrier will complete descriptions of each load of waste removed using either a Waste Transfer Note or a Hazardous Waste Consignment Note, as appropriate.

6.1.4 Where multiple loads of waste, having identical physical and chemical characteristics, are to be removed from site, the Environment Agency may agree to such movements being covered by a single Waste Transfer Note or Hazardous Waste Consignment Note, where they are all transferred to the same permitted facility.

7. Waste documentation and monitoring

7.1.1 The appointed Principal Contractor will ensure that all waste management is undertaken in accordance with the current waste regulatory framework, following appropriate 'duty of care' procedures and that waste management subcontractors are operating under the appropriate procedures and or licences, in accordance with Section 34 of the Environmental Protection Act 1990. This includes:

- preventing unauthorised or harmful treatment, placement or disposal of waste
- preventing the escape of waste from their control
- ensuring the transfer of waste is only to an authorised person or a person for authorised transport purposes where there is a written description of the waste to avoid a contravention of any environmental permits.

7.1.2 Detailed records will be kept onsite and reviewed periodically (biannually as a minimum). These records include:

- the SWMP, updated throughout construction when required.
- environmental permit, registered exemption or CL:AIRE DoW CoP documentation.
- copies of licences, registration numbers and/or permit numbers obtained from each waste contractor
- waste transfer notes and/or consignment notes to include all the following details:
  - the type of waste
  - list of waste (LoW) code
  - type of container waste is in
  - name of company collecting the waste
  - carrier licence number and vehicle registration
  - date, time and location where the waste was collected
  - waste transfer and or consignment note number

  - amount (by estimated volumes and calculated weight where applicable) of material
  - name of the licensed facility to which the waste has been transferred (including contact details and licence number)
- details of checks and or audits carried out on waste management procedures and details of any changes implemented as a result

7.1.3 A register of all named waste carrier and management facilities will be recorded within the SWMP during the construction stage (**Table 3** provides an example of the record sheet that will be used). No waste carrier or management facility will be used unless they are listed in the SWMP and their licensing and documentation checked and verified.

8. Materials Management Plan

8.1.1 Material excavated from the Scheme will also be recorded and managed using a Materials Management Plan (MMP) which will form part of the EMP (Second iteration). An Outline MMP has been prepared and included as Annex C5 of the EMP (First iteration) (APP-183). The MMP shall be developed in accordance with the CL:AIRE DoW CoP and detail:

- where material is excavated from and the amount (by estimated volumes and calculated weight where applicable) of material
- any treatment and or remediation undertaken
- the verification sampling and analysis undertaken to demonstrate chemical and geotechnical suitability for reuse
- mitigation measures implemented to minimise the amount of material removed from the Scheme
- the final placement of materials (including reuse on and offsite or disposal)

9. Roles and responsibilities

9.1.1 Clear staff responsibilities will be defined for the SWMP. Reference will also be made to the roles and responsibilities defined in the EMP, these are included in Chapter 2 of the EMP (First iteration) (APP-183) and will be updated for the EMP (Second iteration).

9.1.2 The environmental manager appointed by the Principal Contractor will be responsible for updating and distributing the SWMP.

9.1.3 The environmental manager will ensure that the SWMP is communicated to staff, through site inductions and toolbox talks, to ensure that procedures are implemented.

10. Training and Awareness

10.1.1 All subcontractors and staff will be made aware of the SWMP and their responsibility to ensure compliance with it, during their induction. Copies of the SWMP will be available in all site offices and/or compounds.

10.1.2 Additional training, toolbox talks, or briefings will be undertaken periodically to inform staff of any updates to the SWMP, current legislation requirements and to provide feedback following reviews and audits, particularly where there have been any issues identified.

Table 1 – Forecast Site Waste

Waste stream	LoW code	Forecast amount m^3	Forecast amount (breakdown) m^3					
			Reused onsite	Reused offsite	Recycled onsite	Recycled offsite	Recovered offsite	Landfilled
Soil & stones	17 05 04	531,543	531,543					
Soil & stones	17 05 04	2,143				2,035.85		107.15
Mixed waste	17 09 04	575				546.25		28.75
Mixed municipal waste	20 03 01	381				361.95		19.05
Plastic	17 02 03	171				162.45		8.55
Timber	17 02 01	529				502.55		26.45
Mixed metals	17 04 07	286				271.7		14.3
Paper and cardboard	20 01 01	25				23.75		1.25

Quantities provided by the appointed Principal Contractor for outline design. See paragraph 1.1.10 in Section 1 of this Outline SWMP for details.

Table 2 – Actual Site Waste (example table)

Waste stream	LoW code	Actual amount m^3	Actual amount (breakdown) m^3					
			Reused onsite	Reused offsite	Recycled onsite	Recycled offsite	Recovered offsite	Landfilled

Table 3 – Register of waste carriers and management facilities (example table)

Waste details		Waste carrier/broker			Management facility		
Waste stream	LoW code	Name	Registration No	Expiry date of registration	Facility name	Licence or permit No	Conditions of licence checked?

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Annex B5: Materials Management Plan

A57 Link Roads

TR010034

7.2 Environmental Management Plan (First iteration)
Annex B.5 - Outline Materials Management Plan

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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1. Introduction

1.1 Purpose

1.1.1 This Outline Materials Management Plan (MMP) sets out a framework to be used by the appointed Principal Contractor when preparing the detailed MMP for the A57 Link Roads Scheme prior to the commencement of works.

1.1.2 The Scheme is a Nationally Significant Infrastructure Project (NSIP) and this Outline MMP has been developed in support of National Highways' application for a Development Consent Order (DCO) to authorise construction, operation and maintenance of the Scheme. An Environmental Impact Assessment (EIA) has been carried out for the Scheme and is reported in the Environmental Statement (ES). The ES and other DCO documents prepared to support the application are available through the Planning Inspectorate project document library: TR010034-000603-A57 Link Road Examination Library Published.pdf (planninginspectorate.gov.uk)..

1.1.3 It has been prepared to describe how material resources will be managed in accordance with best practice requirements. The appointed Principal Contractor will use this Outline MMP as a framework for producing the detailed Materials Management Plan (MMP) for use during the construction of the Scheme.

1.1.4 This Outline MMP is based on the commitments set out in the ES for the Scheme, and specifically those detailed within the Environmental Management Plan (First iteration) (APP-183) and Register of Environmental Actions and Commitments (REAC) (REP1-037).

1.1.5 An EMP (Second iteration) will be produced by the appointed Principal Contractor to manage environmental effects during the construction phase of the Scheme, at which stage the REAC will be combined so they become a single document. This will broadly follow the EMP (First iteration) and will reflect the mitigation measures set out in the REAC requirements.

1.1.6 The purpose of the MMP is to describe the procedures by which site generated materials will be managed during the construction of the Scheme in accordance with the current regulatory regime and the requirements of the CL:AIRE Definition of Waste: Code of Practice (DoWCoP).

1.1.7 This Outline MMP will be updated by the appointed Principal Contractor into a detailed MMP prior to commencement of works in accordance with Requirement 4 in Schedule 2 of the draft Development Consent Order (dDCO) (REP1-041). The detailed MMP will be one of a number of management plans that will be included in Annex C to the EMP (Second First iteration) under Requirement 4.

1.1.8 The appointed Principal Contractor will take all reasonable steps to ensure that materials are handled efficiently and managed appropriately. Procedures will be adopted by the appointed Principal Contractor during construction to control the use of materials and further reduce any impact. An MMP Verification Report (as required by DoWCoP) will be produced to demonstrate compliance with the MMP and record material use.

1.1.9 An Outline Site Waste Management Plan (SWMP) is provided as Annex C4 of the EMP (First iteration), which describes how waste will be managed in line with legal and best practice requirements.

1.2 Structure of the Materials Management Plan

1.2.1 This Outline MMP includes:

- Section 1: provides an introduction, description of the purpose of this document and roles and responsibilities in its implementation.
- Section 2: details the estimated quantities of earthworks materials expected to be generated by the Scheme and the material resources required for construction.
- Section 3: outlines how materials will be assessed to confirm they are suitable for use in the Scheme.
- Section 4: details procedures for the management and tracking of materials.

1.3 Project team roles and responsibilities

1.3.1 This Outline MMP provides the framework to be used as a basis from which to develop the MMP (construction stage). The appointed Principal Contractor will confirm exact roles and responsibilities however, key likely roles and responsible are summarised in Table 1-1. These will be set out in Section 2 of the EMP (Second iteration) and within the detailed MMP.

Table 1-1: MMP specific roles and responsibilities during construction

Role	MMP responsibility
Principal Contractor's Construction Project Manager	• Approval for sign off of the MMP for the relevant phase of works. • Ensure that all controls specified within the MMP are implemented by employees and sub-contractors.
Principal Contractor's Environmental Manager	• Ensure that all materials and waste elements of the EMP are complied with during construction, including implementation and updating of the MMP, communication the requirements of the MMP to all parties involved and the collation of tracking and verification data required under the MMP and producing the Verification Report and submitting to CL:AIRE • Undertake site inspections to monitor compliance with the environmental licences/consents for the works and the measures within the MMP. • Implementation of the SWMP throughout the construction of the Scheme.
Qualified Person (registered with CL:AIRE)	• Review of MMP and supporting documentation and submission of declaration to CL:AIRE.

1.4 Design decisions

1.4.1 Decisions made in the Detailed Design stage of the Scheme will impact on the quantity and types of materials used.

1.4.2 In general, the following measures will be implemented during the design and construction phases of the Scheme, where technically, financially and environmentally practicable:

- Design-out and prevent waste arising
- Re-use excavated earthworks materials within the Scheme
- Recycle demolition materials arising from the construction of the Scheme and reuse within the Scheme whenever possible
- Divert waste from landfill through offsite recycling and recovery.
- Use recycled and secondary materials in the construction of the Scheme.

1.4.3 Construction of the Scheme will require excavation in the form of cuttings for the highway and reuse of material to form embankments. The design aims for a 'cut and fill' balance as far as practicable. This will reduce the requirement to import fill materials and remove materials from site as waste.

1.4.4 Opportunities will be sought to maximise the use of site won materials through the re-use, recycling and recovery of site won materials in line with the waste hierarchy.

1.4.5 It has been assumed, that all fill will be sourced from excavations within the Scheme.

1.4.6 During the Detailed Design stage and construction of the Scheme, the contractor will make decisions regarding to efficient material resource use and management and record those decisions appropriately as described in Section 4 of this MMP.

2. Earthworks materials

2.1 Overview

2.1.1 A variety of different materials will be required for the Scheme. The Scheme has been and, through detail design will continue to be, designed to reduce the volumes of both the waste materials generated and the imported construction materials, where practicable, by reusing or recycling the available existing materials within the Scheme.

2.1.2 This Outline MMP provides estimates of the quantities of earthworks materials arising during construction of the Scheme, the likely cut and fill balance and any surplus requiring alternative management.

2.2 Earthworks balance

2.2.1 The Scheme has been designed to maximise the reuse of site won materials and to reduce the quantity of imported materials required. In addition, the design seeks to reduce the volume of material requiring removal from site.

2.2.2 In Chapter 10: Material assets and waste of the ES (APP-066), the material assets used, and waste generated through construction of the Scheme were estimated from the available design information (contained in the BoQ). These quantities will be updated at the Detailed Design stage as the design and construction programme becomes more advanced. As such, Chapter 10 of the ES was based on the preliminary Scheme cut, fill and surplus quantities which arise from the earthwork figures are as follows:

- Cut: 533,686m^3
- Fill: 531,543m^3

- Removal off site: 2,143m^3

2.2.3 2,143m^3 of material will require removal from site and is comprised of three types of material including clay, mudstone and limestone. Measures will be taken to reduce the volume of material requiring removal off site. These measures include:

- Highway alignment changes to reduce cut volumes.
- Changes to landscape earthworks cross section and slope design to utilise site-won materials through detailed design.
- Changes to cut slope design and cross sections at locations in deep cutting to reduce cut volumes.
- Utilisation of excavated limestone materials in pavement construction.

2.3 Classification of materials

2.3.1 The appointed Principal Contractor will develop a geotechnical and chemical specification/s for material suitable to be reused on site, in accordance with the Specification for Highway Works[3]. Testing will be undertaken during construction to confirm that the materials used meet the specification requirements.

2.3.2 Any site won materials requiring off-site disposal (i.e. not meeting the specification/s or surplus to requirements) will be characterised in accordance with the Environment Agency's Technical Guidance WM3. The management of such waste will be governed by relevant waste legislation and recorded in the SWMP.

2.3.3 Materials unsuitable for reuse on site will be managed in accordance with the Outline SWMP in Annex C4 of the EMP (First iteration).

2.3.4 The specification/s will be derived so the reused materials are suitable for their intended use and do not pose a significant risk to end site users or controlled water receptors. The earthworks specification will also set out a verification system ensuring that only materials found suitable for use will be classed as acceptable for construction works.

2.4 Land contamination

2.4.1 There is potential for unsuitable materials to be encountered during construction works due to levels of contamination. Details of areas of concern with respect to land contamination are presented in ES Chapter 9 Geology and soils (APP-065). In addition, unexpected contamination may be encountered during construction.

2.4.2 To date, no significant sources of contamination have been identified on site. However, any required remediation works will be undertaken during construction followed by a verification process set out in a remediation implementation and verification plan. Verification may involve monitoring or targeted investigations to confirm that the remediation works have achieved the objectives. On completion of the works, a verification report will be prepared. The remediation strategy, remediation implementation and verification plan and verification report will feed into the detailed MMP.

Unexpected contamination

2.4.3 Areas of unexpected contamination may be encountered during construction. An action plan will be developed to set out procedures and responsibilities when unexpected contamination is encountered. This will form part of the contingency plans identified in the MMP. As a minimum the action plan should allow for assessment of encountered contamination in liaison with a suitably qualified land contamination specialist, revision of health and safety measures, identification of a designated storage area within the site compound, sampling and testing of the potentially contaminated materials part of materials classification process and verification process.

3. Materials management on site

3.1 Materials storage and segregation options

3.1.1 The contractor will store excavated soils and earthworks materials on site in stockpiles with location and volume recorded. Movement of soils into and out of stockpiles will be recorded via the tracking system

3.1.2 Demolition materials that are to be recycled for use onsite shall be separated at source and stored separately both before and after the recycling process.

3.2 Reporting and auditing

3.2.1 The effectiveness of the MMP depends upon enforcement on site by the Environmental Manager and Site Materials and Waste manager. Responsibility for the formal recording of material movements lies with the Site Materials and Waste Manager.

3.2.2 The contractor will maintain a record of all materials that come to site. The quantity of re-used, recycled and secondary aggregate should be recorded, alongside details of the supplier, the producing facility and records that demonstrate that the material meets all relevant technical and regulatory requirements.

3.2.3 The contractor will continually review the types of surplus materials being produced and amend the site set up to minimise wastage rates and maximise reuse or recycling.

3.3 Movement and Tracking System

3.3.1 The movement and reuse of materials within the site will be tracked via the tracking system that will include (but not be limited to):

- Annotated plans of the site identifying excavation areas, stockpile locations, any treatment areas and placement locations
- Inspection and testing procedures and records used to verify materials are suitable for reuse on site
- Tracking forms and control sheets to record the movement of materials, including delivery tickets if materials are moving between sites

- Duty of Care documentation for any materials removed from site as waste (as recorded in the SWMP).

3.4 Review of the MMP

3.4.1 The contractor will review the MMP and update it accordingly. In the case of any significant design changes or significant changes to the volume of materials to be reused (e.g. ±10%) the MMP will be updated and redeclared to CL:AIRE.

3.4.2 In the absence of significant design or other changes, the contractor will review the MMP at least once every four months during the construction of the Scheme.

3.4.3 Minor changes to the MMP and its implementation will be captured via the Verification Report.

3.5 Site inspections

3.5.1 The site manager or nominated deputy will undertake a daily inspection of the construction areas including all areas used for materials management. Any issues will be recorded in the daily log along with any corrective action taken.

3.6 Training

3.6.1 The contractor will incorporate the MMP requirements into the site induction and provide on-site instruction of appropriate separation, handling, recycling, re-use and return methods to be used by all parties at all appropriate stages of the Scheme.

3.6.2 The contractor will ensure that all personnel working on the site, including subcontractors, are inducted and understand the requirements of the MMP in relation to the work they are undertaking.

3.7 Supporting documentation

3.7.1 The following provides a non-exhaustive list of the expected documentation requirements to support the completion of an MMP for the Scheme:

- Invasive Species Management Plan
- Earthworks Strategy
- Remediation Strategy including a verification plan
- Earthworks Specification
- Cut/Fill requirements and earthworks movements plan
- Tracking System
- Qualified Person Declaration
- Verification Report Plan
- Soils Handling Management Plan

3.7.2 The supporting documentation referenced will be prepared separately and references incorporated into the MMP as it becomes available. The MMP will be reviewed and updated during detailed design of the Scheme.

3.7.3 No excavation works will commence on site before the detailed MMP has been written and agreed by all relevant parties.

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Annex B6: Community Engagement Plan

A57 Link Roads

TR010034

7.2 Environmental Management Plan Annex B6: Outline Community Engagement Plan

APFP Regulation 5(2)(a)
Planning Act 2008 Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

January 2022

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1. Introduction

1.1.1. The route between the Manchester and Sheffield city regions currently suffers from heavy congestion which creates unreliable journeys. This restricts potential economic growth, as the delivery of goods to businesses is often delayed and the route is not ideal for commuters, limiting employment opportunities. Much of this heavy traffic travels through local roads, which disrupts the lives of communities and makes it difficult and potentially unsafe for pedestrians to cross the roads. These issues will only get worse over time if significant improvements aren't made.

1.1.2. At the western end of the A57/A628 Trans-Pennine route, we're going to create two new link roads:

- Mottram Moor Link Road – a new dual carriageway from the M67 junction 4 roundabout to a new junction on the A57(T) at Mottram Moor
- A57 Link Road – a new single carriageway link from the A57(T) at Mottram Moor to a new junction on the A57 in Woolley Bridge.

1.1.3. This scheme is classed as a 'Nationally Significant Infrastructure Project' which need consent to build by way of a Development Consent Order (DCO).

1.1.4. There has been considerable communication and consultation, both statutory and non-statutory in respect of the Scheme. Background on the consultation can be found in the A57 Link Roads Consultation Report which is held on the Planning Inspectorate website, as submitted with the DCO application.

1.1.5. Over a number of years, the Scheme has been developed following consultation with arange of stakeholders, and more detailed assessments of traffic, engineering, buildability and environmental factors.

1.1.6. The Outline Community Engagement Plan (CEP) will set out the steps to be undertaken by National Highways to make sure that those living in the vicinity of the scheme are informed of activities and developments relating to its construction.

1.1.7. This Outline CEP sets out:

- The approach for delivering joined up communications and engagement.
- Communications and engagement with identified stakeholders andcustomer groups.
- How we will work with all parties involved with the scheme collaboratively todeliver customer focused communications and engagement.

1.1.8. The objectives of the Outline CEP are:

- To ensure our customers feel informed and know where to go forinformation.
- To continuously improve the customer experience by providing clear

andtimely information to allow customers to plan their journeys.

- To ensure stakeholders can engage and work with us to promote thebenefits of the scheme and work through any challenges.
- To ensure everyone working on the scheme understands the importance oftheir contribution to customer service and that we put the customer at the heart of everything we do.
- We drive a lasting legacy and leave the community better placed for thefuture through engagement with local schools, charities and communitygroups.

1.1.9. This Outline CEP will form the basis of the CEP to be prepared by National Highways as part of its National Highways into Construction Environmental Management Plan (CEMP) to be prepared under Requirement 4 of the DCO and approved thereunder by the Secretary of State.

2. Engagement and communication team

2.1.1. National Highways' appointed Principal Contractor has a Community Liaison Manager who will maintain and develop the Community Relations Strategy throughout development and delivery of the Scheme. This will focus on customer experience, stakeholder's engagement, communications, correspondence and opportunities to support the local community.

2.1.2. The Community Liaison Manager will assist in developing the detailedCEP, and maintain a comment and enquiries log, disseminate identified comments for response and implementation of action.

2.1.3. Through all our communications and engagement activities, the Community Liaison Manager will aim to tell the wider story of the Scheme, to demonstrate the environmental, safety, economic and social benefits that it will bring to the area and the lasting legacy it will leave.

3. Our customers

3.1.1. The geographic and economic location of the Scheme means it impacts a wide range and number of customers.

3.1.2. The statutory and non-statutory activity to support the DCO application requires communication and engagement with key bodies including the relevant local authorities.

3.1.3. The Scheme falls within or near or is closely connected to the area of the following local authorities:

- Tameside Metropolitan Borough Council
- Derbyshire County Council
- High Peak Borough Council
- Peak District National Park Authority.

3.1.4. Our customers and stakeholders have been categorised by National Highways as follows:

- Road users
- Non road users (pedestrians, cyclists, and horse riders)
- Local government
- Transport
- Political representatives
- Media
- Emergency services
- Statutory
- Operational
- Vulnerable road users
- Local businesses
- Landowners and occupiers
- Local residents
- Local community users.

3.1.5. We want to ensure that our customers receive information in an accessible way and to help them plan safe and reliable journeys.

3.1.6. Within this scope, there is an over-arching awareness of the need to ensure that communication methods are utilised fully and adapted to the needs of the following protected characteristics:

- Age

- Disability
- Gender reassignment
- Race
- Religion or belief
- Sex
- Sexual orientation
- Marriage and civil partnership
- Pregnancy and maternity.

4. Our approach to customer engagement and communication

4.1.1. The CEP aims to ensure that the benefits of the Scheme are well known and understood by local, regional and national stakeholders.

4.1.2. We aim to ensure that our customers, stakeholders, local businesses, roadusers, landowners and communities are given the facts, opportunities, and reassurance they need to plan their journeys.

4.1.3. The Scheme webpage and social media channels will be used to inform customers of road closures in advance, diversion routes and to promote the benefits of the Scheme. Social media will be monitored daily (Monday to Friday) and comments from the public will be responded to promptly.

4.1.4. All customers and stakeholders can get in contact at any time during development and delivery of the Scheme, if they have any questions or concerns either by calling the National Highways Customer Contact Centre on 0300 123 5000 or by email at A57LinkRoads@highwaysengland.co.uk.

4.1.5. Correspondence will be logged and managed by the National Highways project support staff, who will forward on any correspondence that requires a response to the Scheme Community Liaison Manager, who will manage the development of an answer with the appropriate specialists.

4.1.6. Customer responses are marked each month by National Highways Public Liaison Officer for the North West using the Road Investment Programme scorecard which looks at ensuring all responses adhere to such matters as tone of voice, style guide, and customer service.

4.1.7. The National Highways Engagement Van will be located at a number of locations prior to the start of works to highlight how customers can access the website and how they can contact us if they have any questions.

4.1.8. A number of channels and platforms have been identified as methods of engaging pre/during/post construction. The list will be reviewed and developed as further opportunities arise.

4.1.9. Table 4.1 sets out the proposed channels for informing customers and stakeholders of construction plans, progress or related information.

Table 4.1: Proposed engagement channels

Product	Product summary	Target Audience
A57 Link Roads web page	National Highways scheme webpage will be used to communicate information about the Scheme, such as why the works are happening, when they will be taking place and the diversion routes. When required, webpage bulletins will be issued to highlight significant changes to the website content. Where possible, stakeholder websites will also be used to communicate information about the scheme.	All
Bi-monthly newsletters	Bi-monthly scheme wide newsletters providing an overall update on the scheme will be shared by email (or post where requested) Customers will need to sign up to alerts to receive a copy.	All
Local and community briefings	Quarterly briefings arranged (either online or at existing meetings) to provide updates on the Scheme and developments.	Local authorities Parish councils Community/ resident groups
Engagement van	The Highways England engagement van will be located, prior to the start of works, in key locations around the Scheme to raise awareness of the Scheme.	Local residents Communities Road Users
Social media	Social media will be used, working with local government and community groups, to maximise the reach of communication, specifically to reach pre-existing communities that may not be aware of the Scheme.	Local residents Communities Road Users

Product	Product summary	Target Audience
Information boards and signs	Where work is taking place in areas of public use, a notice will be placed in a safely accessible location, such as on existing information boards or fencing or use signage.	Local residents Communities Road Users
Direct mail	Leaflets or letters will be sent at least one week before works start in any local area. These will include explanation of works, timings and duration as well as contact details.	Properties 50m from the works and directly affected properties
Community deposit points	Using the same venues as we displayed consultation materials and the DCO application, ask for those venues (mainly libraries and community centres) to display Scheme updates (either letters, signs or newsletters)	Local residents Communities
Media	Regular media releases to local and national newspapers and other media outlets	All
Outreach and education	Ongoing engagement with schools, colleges and community groups	All

5. Stakeholder engagement

5.1.1 Stakeholder mapping is pivotal to delivering an effective strategy. The mappingof stakeholders using purely the influence / interest model assumes the level of engagement our stakeholders want/needs/expects.

5.1.2 Stakeholder engagement will be tailored to each stakeholders' requirements andto ensure the engagement encourages two-way dialogue, meeting agendas will be proposed in advance of meetings. Meeting minutes and actions will be shared following the meetings for comments and updates.

5.1.3 To ensure we deliver on all stakeholder commitments, a stakeholder commitments log will be maintained and regularly reviewed.

5.1.4 The Scheme and its construction will have an impact on affected landowners,necessitating land acquisition both permanent and temporary. Landowners, lessees, tenants, occupiers and those with an interest in the land affected aretherefore a significant group of stakeholders.

5.1.5 Those who are not directly affected by the Scheme but may still have an interest in it will be engaged through the monthly newsletters, webpage and social media.

6. Evaluation

6.1.1 The success of our CEP will be regularly reviewed to ensure we are achieving our objectives and improving our communications approach.

6.1.2 We will gather qualitative feedback via evaluation forms to help us measure and improve our communications.

6.1.3 We will request feedback from stakeholders to help us measure and improve our engagement.

6.1.4 This information helps us analyse impact, review lessons from completed activities and inform future planning as well as share insight with other communications teams within National Highways.

Appendices

Appendix A. Community Engagement Plan stakeholders

[To completed before Scheme delivery after an integrated team mapping session. Contact details will be included in the Stakeholder Tracker]

Host local authorities
District, town and parish councils
Businesses
Communities

Emergency services

Environmental bodies

Health

Non motorised users (NMUs)

Residents/landowner
Road users
Transport
Utilities

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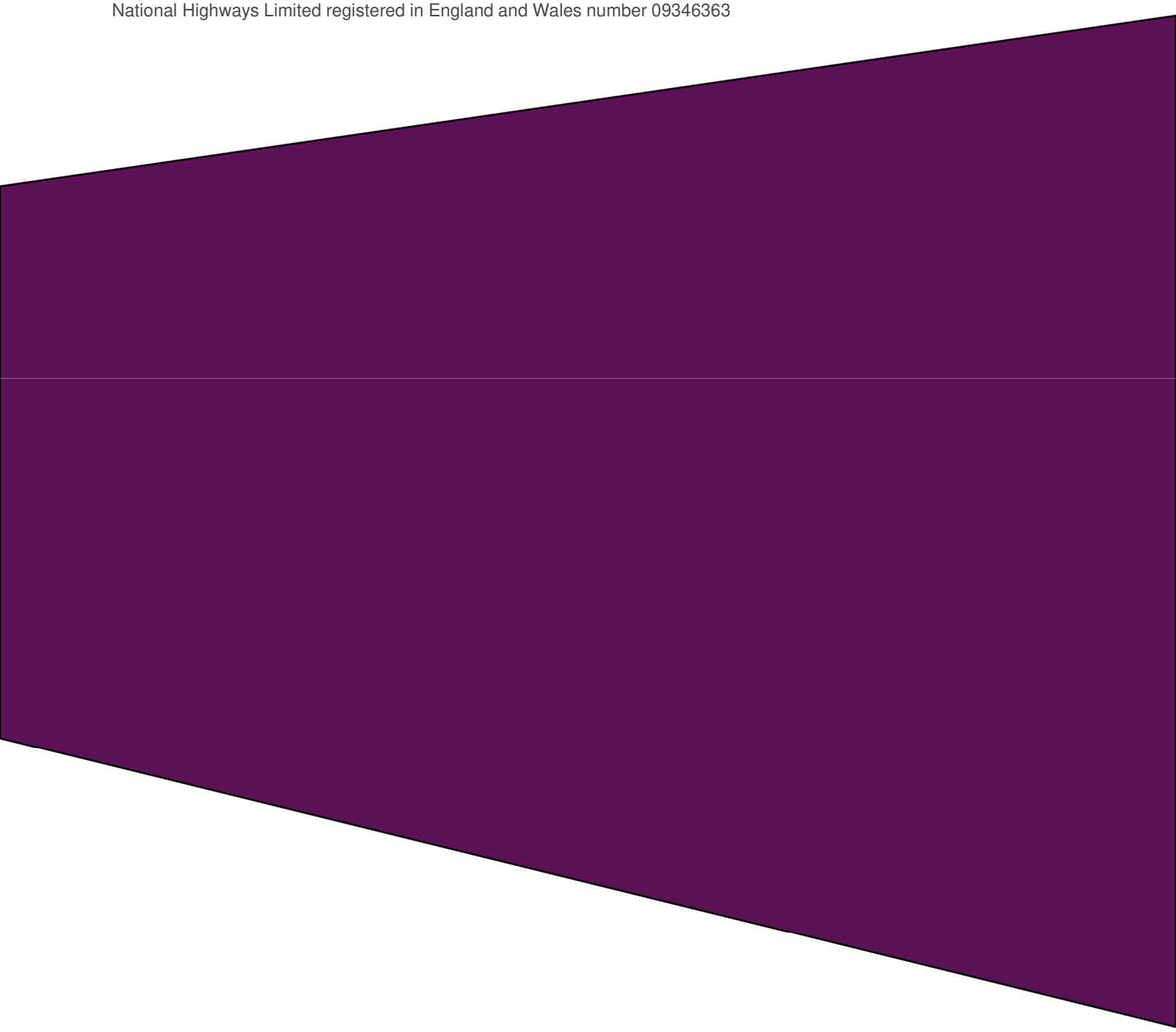

Annex B7: Nuisance Management Plan

A57 Link Roads

TR010034

Environmental Management Plan (First iteration)

Annex B7: Nuisance Management Plan

APFP Regulation 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

January 2022

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A57 Link Roads Scheme

Development Consent Order 2021

Annex B7 OUTLINE NUISANCE MANAGEMENT PLAN

Regulation Number:	Regulation 5(2)(q)
Planning Inspectorate Scheme Reference	TR010034
Application Document Reference	TR010034/APP/7.2
Author:	A57 Link Roads Scheme Project Team, Highways England

Version	Date	Status of Version
Rev 1.0	January 2022	Outline draft 0.1

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1. Introduction

1.1.1 This Outline Nuisance Management Plan (NMP) sets of the framework to be used by the appointed Principal Contractors when preparing the detailed NMP for the A57 Link Roads Scheme (hereinafter referred to as the 'Scheme') prior to the commencement of works.

1.1.2 The Scheme is a Nationally Significant Infrastructure Project (NSIP) and this Outline NMP has been developed in support of National Highways' application for a Development Consent Order (DCO) to authorise construction, operation and maintenance of the Scheme. An Environmental Impact Assessment (EIA) has been carried out for the Scheme and is reported in the Environmental Statement (ES). The ES and other DCO documents prepared to support the application are available through the Planning Inspectorate project document library: TR010034-000603-A57 Link Road Examination Library Published.pdf (planninginspectorate.gov.uk).

1.2 Objective

1.2.1 This Outline NMP is based on the commitments set out in the ES for the Scheme, and specifically those detailed within the Environmental Management Plan (EMP) (First iteration) (APP-183) and Register of Environmental Actions and Commitments (REAC) (REP1-037), which details the requirement for a NMP to be developed.

1.2.2 In order to minimise the potential for nuisance from dust and emissions to air, this Outline NMP details the measures that the appointed Principal Contractor would be required to adopt to control and limit nuisance at residential properties and other sensitive receptors in the vicinity of the Scheme. This Outline NMP applies to all construction activities related to the Scheme.

1.2.3 This Outline NMP will be updated by the appointed Principal Contractor into a detailed NMP, as appropriate and necessary, prior to commencement of works in accordance with Requirement 4 in Schedule 2 of the draft Development Consent Order (dDCO) (REP1-041). The detailed NMP will be one of a number of management plans that will be annexed to the EMP (Second Iteration) under Requirement 4.

1.2.4 An EMP (Second iteration) will be produced by the appointed Principal Contractor to manage environmental effects during the construction phase of the Scheme, at which stage the REAC will be combined so they become a single document. This will broadly follow the EMP (First iteration) and will reflect the mitigation measures set out in the REAC requirements. All environmental management plans, including this NMP, will be included in Annex C.

2. Dust and Emissions to Air

2.1 Introduction

2.1.1 This section will be updated by the appointed Principal Contractor for the purposes of the detailed version. It will set out the purpose of the detailed NMP and set out the processes that will be adopted to minimise nuisance through the management, control and reporting of dust and emissions to air during construction in accordance with relevant legislation, regulations and contractual requirements.

2.1.2 This Outline NMP plan identifies the key items which will be included in the detailed NMP as follows:

- Roles and responsibilities at project and site-specific levels
- The approach to dust and emissions management during construction
- Dust and emissions control measures
- Inspections and Monitoring
- Communication and complaints arrangements
- Reporting requirements.

2.2 Relevant Legislation

[The appointed Principal Contractor will need to update this section prior to construction and provide an overview of the key legislation that the Scheme has to comply with.]

Environment Act 2021

2.2.1 The Environment Act 2021 gained royal assent in November 2021. The Act will deliver cleaner air for all by requiring the government to set targets on air quality, including for fine particulate matter ($PM_{2.5}$), the most damaging pollutant to human health. The Act introduces a legally binding duty on the government to bring forward at least two air quality targets by October 2022. The first is to reduce the annual average concentrations of $PM_{2.5}$ in ambient air. The second air quality target must be a long-term target (set a minimum of 15 years in the future), which will encourage long-term investment and provide certainty for businesses and other stakeholders.

2.2.2 The Act requires the Councils and other relevant public bodies to work together more closely to tackle local air quality issues, and it will be easier for local authorities to impose restrictions on smoke emissions from domestic burning, which pollutes our towns and cities. The government will also be required to regularly update its National Air Quality Strategy (AQS).

2.2.3 The Bill gives the government the power to compel vehicle manufacturers to recall vehicles and non-road mobile machinery if they do not comply with

relevant environmental standards, ensuring illegally polluting vehicles are taken off the road quickly.

Part IV of the Environment Act 1995

2.2.4 Part IV of the Environment Act 1995 set out the responsibilities of local authorities in the UK to review air quality in their area and designate an Air Quality Management Areas (AQMA) if improvements are necessary. Where an AQMA is designated, local authorities are required to work towards achieving the AQS objectives by developing and implementing an air quality action plan describing the pollution reduction measures.

2.2.5 Part IV of the Environment Act 1995 is amended by The Environment Act 2021 to enable greater cooperation at local level and broaden the range of organisations that play a role in improving local air quality and require regularly review of the AQS at least every 5 years, and to publish an annual statement to Parliament on progress towards achieving air quality standards and objectives.

Clean Air Act 1993

2.2.6 Clean Air Act 1993 makes provisions on prohibition of dark smoke emissions from chimneys, industrial and trade premises and prohibition on emission of dark smoke from burning materials on construction sites, as well as provisions for only allowing burning of authorised fuels in smoke control areas.

2.2.7 Clean Air Act 1993 gives the power to the Secretary of State to make regulations on the control of certain forms of air pollution including regulations about motor fuels, the sulphur content of oil fuels for furnaces and engines and cable burning.

2.2.8 The amendments to the Clean Air Act 1993 by The Environment Act 2021 will allow local authorities to take more effective actions to reduce pollution from domestic burning.

Environmental Protection Act 1990

2.2.9 The Environmental Protection Act 1990 makes provision for the improved control of pollution to the air, water and land by regulating the management of the control of emissions. The Act places the duty on local authority to inspect their area to detect any statutory nuisances and investigate the complaints where it is reasonable practicable.

2.2.10 Environmental Protection Act 1990 is amended by The Environment Act 2021, which enable the local authorities to take more substantive action against those who repeatedly emit smoke and harm to human health by extending the system of statutory nuisance to private dwellings in Smoke Control Areas.

The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018

2.2.11 The Regulation, as amended for EU exit, sets out emission standards and type-approval procedures for engines to be installed in non-road mobile machinery. These Regulations make provision in connection with Regulation (EU) 2016/1628 of the European Parliament and of the Council on requirements.

Health and Safety at Work Act 1974

2.2.12 Health and Safety at Work Act makes provisions for protecting others against risks to health or safety in connection with the activities of persons at work, and preventing the unlawful acquisition, possession and use of dangerous substances, and controlling certain emissions into the atmosphere.

Control of Substances Hazardous to Health Regulations (COSHH) (SI 2002/2677)

2.2.13 COSHH is the law that requires employers to prevent or reduce exposure for employees, contractors and other people to hazardous substances by providing control measures, information, instruction and training for employees and others.

2.3 Management of Site Activities

Main roles and responsibilities

2.3.1 In relation to the control and management of dust and emissions to air, the appointed Principal Contractor shall establish the main roles and responsibilities of site personnel to ensure the proposed control measures are being implemented during the construction activities. These will be set out in Section 2 of the EMP (Second iteration) and within the detailed NMP.

Consultation

2.3.2 Consultation will be carried out, where necessary, with the environmental health departments of the local authorities regarding the management of dust and emissions to air during construction of the Scheme.

2.3.3 The implementation of a Community Engagement Plan (CEP) will ensure that local residents and other affected parties are kept informed of the progress of the works. Communication mechanisms include newsletters, newspaper and radio announcements, and communications from the appointed Principal Contractor. An Outline CEP has been included in Annex C7 of the EMP (First iteration).

2.4 Control Measures

2.4.1 Table 2-1 sets out activities, and examples of the works and associated risks of emissions from site activities that could give rise to poor air quality and the risk level in accordance with DMRB LA 105 – Air Quality. Table 2-2 sets out examples of the specific controls that will be applied. The measures that are set out in Table 2-2 are considered appropriate for a high-risk site as identified in the Dust Risk Assessment, presented in Chapter 5 Air Quality of the Environmental Statement (REP2-006).

2.4.2 The appointed Principal Contractor shall observe the requirement to use Best Practical Means (BPM) by providing for and adopting all necessary means to prevent a statutory nuisance occurring from the site.

Table 2-1 – Summary of Key Construction Activities and Sources of Dust from Each Activity and Risk Level

Activity	Dust type and risk	Risk level*
General Site Operations	Potential for fugitive dust/ PM_{10} arising from general site operations	High
Muck away/ trackout	Potential for fugitive dust/ PM_{10} arising from activities on site including stockpiles, and movement of vehicles on haul roads and off site	High
Demolition	Potential for fugitive dust/ PM_{10} arising from demolition of the a number of existing buildings	High
Excavation	Potential for fugitive dust/ PM_{10} arising from earthworks	High
Construction	Potential for fugitive dust/ PM_{10} arising from construction of the new roads, Old Mill Farm Underpass, Mottram Underpass, Carrhouse Farm Underpass, River Etherow Bridge and Roe Cross Road overbridge	High
*The risk level can be High or Low according to DMRB LA105 guidance (Table 2.58b) depending on the distance of the sensitive receptor to the construction activities. For projects with a large construction dust risk potential such as this one, the risk level is high where receptors are within 100 metres, and low where they are within 100 – 200 metres.		

Table 2-2 – Control Measures to be Implemented During the Construction Activities and Residual Risks

Activity	Control	Residual Risk
General Site Operations	Control of Dust Emissions from General Site Operations: • Implement a no burning policy on site	Low

Activity	Control	Residual Risk
	• Equipment that is likely to generate excessive quantities of dust will be enclosed, shielded or where appropriate fitted with dust extractors, filters or scrubbers, which shall be maintained in accordance with manufacturer's specifications • Keep the number of material handling operations to a minimum • Undertake cutting and grinding operations using equipment and techniques which suppress and reduce dust emissions • Where appropriate, erect and maintain windbreaks, netting screens or semi-permeable fences to effectively reduce dust emissions from working areas and/or to screen sensitive location • Where necessary employ water sprays to control dust generated during earthworks • Minimise drop heights of soils and excavated material into vehicles • Sheet vehicles taking soils and friable material from site at all times • Avoid site runoff of water or mud • Damping down of surfaces prior to their being worked • Control of dust emissions from materials storage/ stockpiling and handling areas • Store aggregates, sand and spoil with adequate protection from the wind and, where practicable, within buildings • Storing dusty materials away from site boundaries and in appropriate containment (e.g. sheeting, sacks, barrels etc.). • Maintain slopes of stockpiles, tips and mounds at an angle not greater than the natural angle of repose and avoid creating sharp changes of shape • Aim to minimise any double handling of soils and other friable materials • Minimise the amount of excavated material stockpiled and dampen the surfaces of stockpiles of dry friable materials by controlled application of water sprays or alternatively, shroud or screen stockpiles • Maintain handling areas to reduce the risk of dust emissions using static misting systems, bowsers and other watering methods as necessary to reduce or prevent dust emissions. Control of Dust Emissions from Haul Roads and Vehicle Movements on Site:	

Activity	Control	Residual Risk
	• Enforcing speed limits for vehicles on unmade surfaces and site haul roads to minimise dust entrainment and dispersion • Sheeting vehicles carrying dusty materials to prevent materials being blown from the vehicles whilst travelling • Ensure all vehicles switch off engines when stationary Control of Exhaust Emissions from Vehicles and Plant/ Equipment: • Select a suitable supplier in accordance with the Procurement Policy • Select and procure plant and equipment with the least potential for dust and other pollutant emissions, allowing for economic constraints and practicability • Use plant and equipment powered by mains electricity or battery powered whenever practicable • Request the power output and EU staged emissions classification of the equipment. Where equipment is under 37kW output no action is required, but where it is above 37 kW output the supplier is informed of the need to fit Diesel Particulate Filter (DPF) device • Use low emission fuels such as ultra low sulphur fuels for all non-road mobile machinery (NRMM) • Use plant fitted with catalysts, DPF and similar devices as listed by the Energy Saving Trust for NRMM with a power output greater than 37kW. Ensure the process for managing this is detailed in the contractor's relevant plans and procedures • Ensure project suppliers' commercial vehicles comply with the necessary legislative requirements including Regulation (EC) No 715/2007 • Ensure that no vehicle or equipment emitting visible black smoke from its exhaust system other than during ignition is used on any construction site or public highway • Ensure that combustion engines are not left running unnecessarily • Ensure that all vehicles and equipment engines and exhaust systems are maintained so that exhaust emissions do not breach statutory limits set for vehicle/ equipment type and mode of operation.	

Activity	Control	Residual Risk
	• Ensure all vehicles and equipment are maintained in accordance with manufacturer's specifications and statutory requirements.	
Muck away/ trackout	• Locate haul roads and access points as far away as practicable from sensitive receptors • Undertake wet cleaning of any large-scale concrete hard standing. • Restrict dry sweeping to small areas only • Inspect haul road condition at least weekly and repair as soon as possible if damage is identified • Apply water to site roads (including haul roads) using bowsers at an appropriate rate to effectively suppress dust • Maintain unpaved roads and verges in a compacted condition • Regular water-spraying and sweeping of unpaved and paved roads to minimise dust and remove mud and debris • Provide easily cleaned hard standings for vehicles • Using wheel washes, shaker bars or rotating bristles for vehicles leaving the site where appropriate to minimise the amount of mud and debris deposited on the public highway • Ensuring any temporary site roads are no wider than necessary to minimise their surface area	Low
Demolition	• Fully sheet all vehicles carrying loose or potentially dusty material to or from the working areas • Use effective water suppression during demolition operations • Screen buildings where dust producing activities are taking place with debris screens or sheeting, where appropriate	Low
Excavation	• Ensure regular cleaning of hard standings using wet sweeping methods • Fully sheet all vehicles carrying loose or potentially dusty material to or from the working areas • Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment • Avoid carrying out earthworks during dry weather if reasonably practicable having regard to programme, or provide and ensure appropriate use of water sprays to control dust	Low

Activity	Control	Residual Risk
	• Re-vegetate earthworks and exposed areas/ soil stockpiles to stabilise surfaces as soon as practicable	
Construction	• Avoid scabbling (roughening of concrete surfaces) if possible • Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery • Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place • For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust generation	Low

2.5 Inspections and Monitoring

2.5.1 A daily construction report log will be completed on a daily basis for each area where work is being undertaken by the Site Supervisor and recorded within the daily diary. The site will also be inspected by the Environment Manager (or delegate) at least weekly.

2.5.2 On identification of a non-conformance where inspections, surveillance, or auditing identify a failure to implement this management plan and/ or a substantiated complaint is received, a full review of working practices will be undertaken to ensure corrective and preventative measures are implemented.

2.5.3 Inspection will also be undertaken in the event that a complaint is received. When investigating an incident, the following information will be gathered:

- Wind direction and strength
- Weather conditions
- Operations at the site at the time of the exceedance
- Any abnormal operations both inside the worksite and outside (by both the contractor and/or others)
- Any air quality controls being applied
- Identification of additional controls required

2.6 Communications

Stakeholder communication

2.6.1 The appointed Principal Contractor will maintain and develop a Community Engagement Plan in consultation with stakeholders.

Complaints

2.6.2 All complaints received will be recorded, investigated and corrective actions implemented and feedback given to the complainant. The relevant local authority will be advised of any justified complaint, actions taken to investigate and any actions found necessary to put in place.

Records.

2.6.3 Documentation and records will be produced, filed and maintained to record the activities and processes used to manage dust and emissions to air.

3. References and glossary

3.1 References

- Clean Air Act 1993 (as amended)
- Control of Substances Hazardous to Health Regulations 2002 (as amended)
- Environment Act 1995 (as amended)
- Environmental Protection Act 1990 (as amended)
- Health and Safety at Work Act 1974 (as amended)
- Highways Agency (2019) DMRB LA 105 Air Quality
- Regulation (EC) No 715/2007 of the European Parliament and of the Council 2007
- Regulation (EU) 2016/1628 of the European Parliament and of the Council 2016
- The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018 (as amended)

3.2 Glossary and abbreviations

3.2.1 The Glossary and abbreviations used in this document are provided in Table 3-1 below.

Table 3-1 – List of Glossary and Abbreviations

Term	Definition
AQMA	Air Quality Management Area
BPM	Best Practicable Means
COSHH	Control of Substances Hazardous to Health Regulations
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
DPF	Diesel Particulate Filter
EC	The European Commission
EU	The European Union
NMP	Nuisance Management Plan
ES	Environmental Statement
LA	Local Authority
LAQM	Local Air Quality Management
mph	Mile Per hour
NRMM	Non-Road Mobile Machinery
PM2.5	Fine Particulate Matter with an average aerodynamic diameter not exceeding 2.5 micrometers
PM_{10}	Particulate Matter with an average aerodynamic diameter not exceeding 10 micrometers
REAC	Register of Environmental Actions and Commitments

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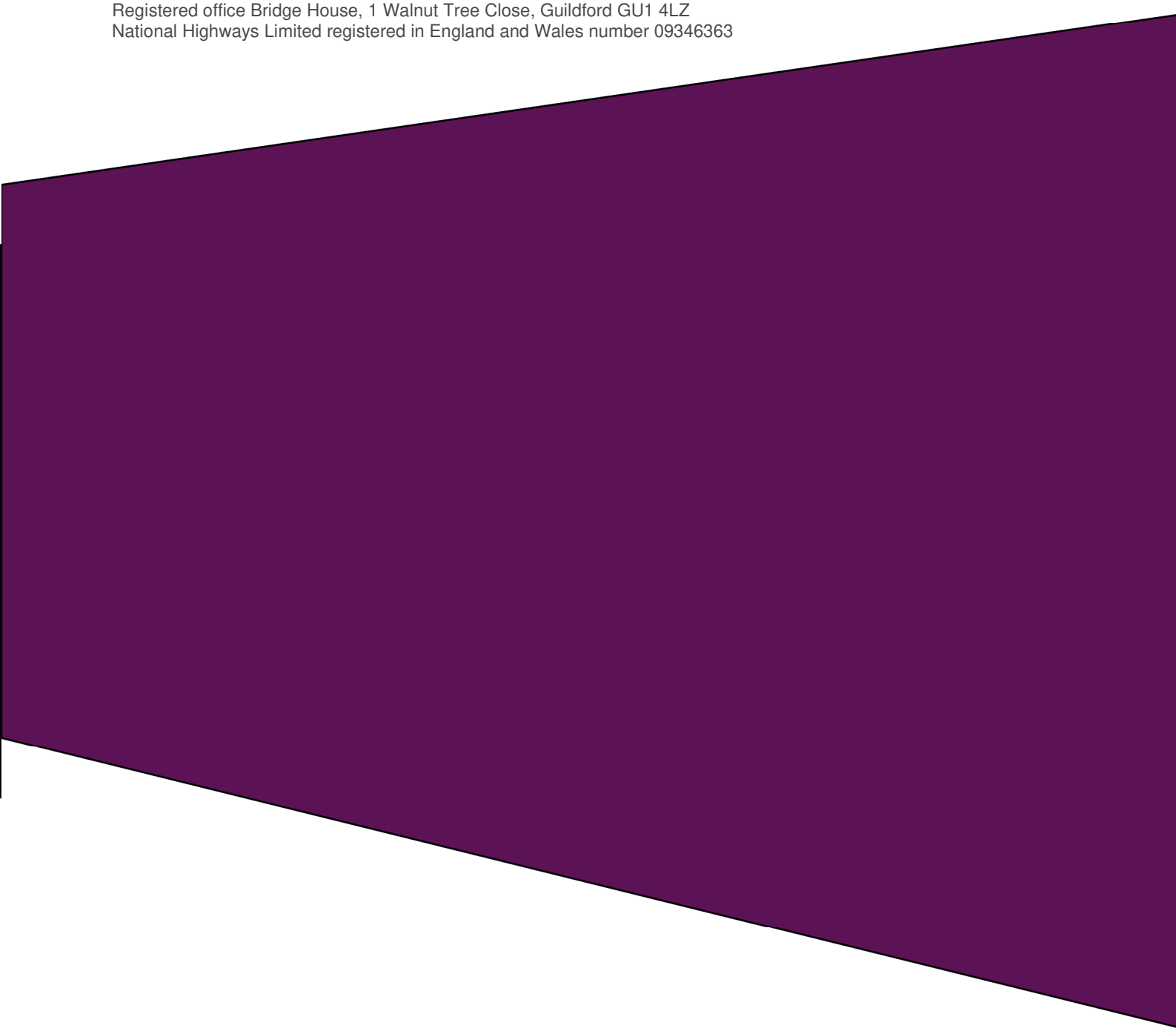

Annex B8: Dewatering Management Plan

A57 Link Roads

TR010034

7.2 Environmental Management Plan Annex B8: Outline Dewatering Management Plan

APFP Regulation 5(2)(a)
Planning Act 2008 Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

April 2022

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1. Introduction

1.1. Purpose of document

1.1.1. This Outline Dewatering Management Plan (DWMP) sets out a framework to be used by the Principal Contractor when preparing the final DWMP for the Scheme prior to the commencement of works.

1.1.2. The DWMP is one of several management plans that must be included in the Environmental Management Plan (EMP) as required by Requirement 4 in Schedule 2 of the draft Development Consent Order (DCO).

1.1.3. The principal purpose of a DWMP is to set out how dewatering will be managed in a way that minimises the risk of adverse effects on receptors in the groundwater environment. Receptors include groundwater abstractions, groundwater bodies and associated habitats and species.

1.2. Relevant guidance

1.2.1. This section will lay out the relevant guidance for the DWMP.

2. Environmental setting

2.1. Introduction

2.1.1. This section of the DWMP will provide baseline environmental information and detail receptors in the groundwater environment potentially exposed to the effects of dewatering activities.

2.2. Geology and hydrogeology

2.2.1. This section will give a brief overview of the geology and hydrogeology of the area.

2.3. Potential contaminative sources

2.3.1. This section will summarise any potential sources of contamination.

2.4. Receptors

2.4.1. This section will detail groundwater receptors identified across the study area. An updated Water Features Survey (WFS) will be completed to inform this section of the report.

3. Dewatering requirements and procedures

3.1. Introduction

3.1.1. This section will detail the extent of the proposed dewatering scheme, during and post construction.

3.2. Temporary dewatering during construction

3.2.1. This section will provide details of the proposed active dewatering system during construction, including:

- Active dewatering well locations
- Abstraction rates
- Discharge locations
- Duration of active dewatering

3.3. Permanent dewatering post construction

3.3.1. This section will provide details of the proposed passive dewatering system post construction, including:

- Passive dewatering well locations
- Drainage rates
- Discharge locations

3.4. Permitting requirements

3.4.1. This section will provide consenting details for the dewatering operations, including any abstraction licences and environmental (discharge) permits.

4. Potential environmental Impacts

4.1. Introduction

4.1.1. This section of the DWMP will summarise potential adverse impacts to the groundwater environment from dewatering, as identified in the Hydrogeological Risk Assessment (HRA) and any subsequent updates to this document.

4.2. Impacts during construction

Drawdown impacts

4.2.1. This section will detail potential construction impacts from groundwater drawdown caused by active dewatering abstraction.

Flow impacts

4.2.2. This section will detail potential construction impacts on surface water flows caused by active dewatering abstraction and discharge.

Water quality impacts

4.2.3. This section will detail potential construction impacts on surface water quality caused by active dewatering discharge.

4.3. Post construction impacts

Drawdown impacts

4.3.1. This section will detail potential post construction impacts from groundwater drawdown caused by passive dewatering.

Flow impacts

4.3.2. This section will detail potential post construction impacts on surface water flows caused by passive dewatering abstraction and discharge.

Water quality impacts

4.3.3. This section will detail potential post construction impacts on surface water quality caused by passive dewatering discharge.

5. Management plan

5.1. Introduction

5.1.1. This section of the DWMP will lay out the details of how dewatering activities will be managed to protect the groundwater environment from adverse effects. Key components of this plan are briefly set out below.

5.2. Mitigation of impacts during construction

Drawdown impacts

5.2.1. Where adverse impacts on receptors are associated with groundwater drawdown during construction, the planned mitigation measures will be detailed here.

Flow impacts

5.2.2. Where adverse impacts on receptors from surface water flows during construction are predicted, the planned mitigation measures will be detailed here.

Water quality impacts

5.2.3. Any proposed mitigation measures for adverse impacts to surface water quality during construction will be detailed here.

5.3. Post Construction Mitigation

Drawdown impacts

5.3.1. Where adverse impacts on receptors are associated with groundwater drawdown post construction, the planned mitigation measures will be detailed in this section.

Flow impacts

5.3.2. This section will detail proposed mitigation measures for adverse impacts to surface water flows post construction, where required.

Water quality impacts

5.3.3. This section will detail proposed mitigation measures for adverse impacts to surface water quality post construction, where required.

6. Monitoring

6.1. Introduction

6.1.1. This section will include a groundwater monitoring plan for pre- (baseline), during and post- construction. The groundwater monitoring plan will be designed to help identify, and mitigate against, actual impacts of the Scheme. This groundwater monitoring plan will build on the strategy outlined in Section 5.1.5 of the HRA and will include the following:

- Monitoring locations
- Monitoring schedule
- Types of monitoring

6.2. Baseline monitoring

6.2.1. This section will detail baseline monitoring completed and planned prior to the start of construction. This will include key receptors identified during the updated WFS.

6.2.2. Baseline groundwater sampling and groundwater level measurements commenced in summer 2021 as part of the additional ground investigation and form the start of the baseline monitoring record.

6.2.3. Continuous groundwater level monitoring along the Scheme was installed at ten locations in spring 2022 and will remain in place for at least one year to establish a baseline record of seasonal variability in groundwater levels.

6.3. Construction monitoring

6.3.1. This section will detail proposed monitoring during construction. This will include, but not be limited to, monitoring of key groundwater receptors and sampling of abstracted groundwater prior to discharge to surface watercourses, in line with any permit requirements.

6.4. Post-construction monitoring

6.4.1. This section will detail proposed monitoring post construction.

6.5. Long term maintenance and management of dewatering systems

6.5.1. This section will detail the required maintenance associated with both construction and long-term dewatering system.

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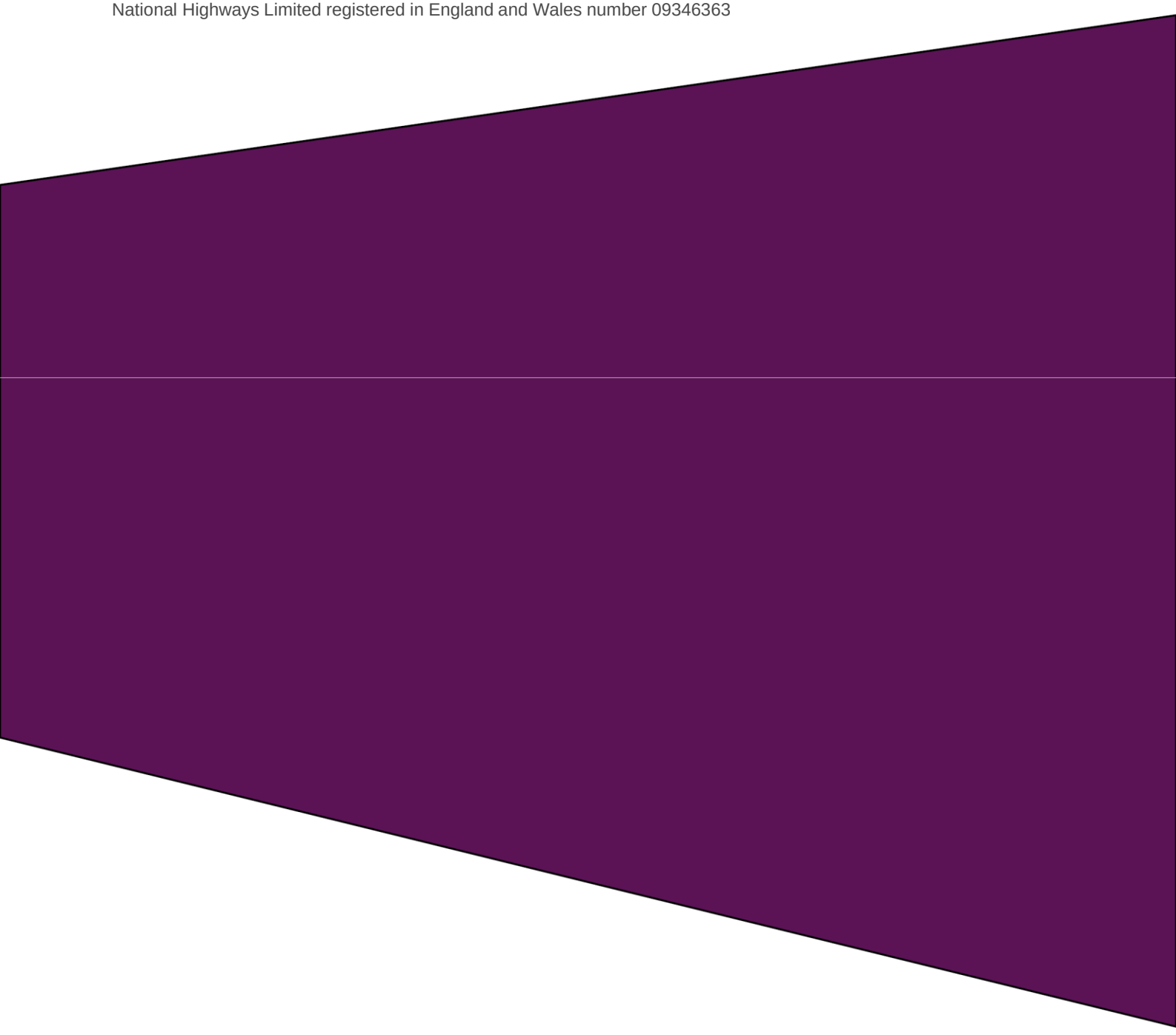

Annex B9:Carbon Management Plan

A57 Link Roads

TR010034

7.2 Environmental Management Plan (First Iteration)

Annex B9: Outline Carbon Management Plan

APFP Regulation 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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Chapter Pages

Tables

1. Introduction

1.1.1 This Outline Carbon Management Plan (CMP) has been prepared for the A57 Link Roads scheme (hereby referred to as the 'Scheme') to set out how whole life carbon emissions will be managed and reduced during the Detailed Design stage, to ensure that the objectives are met or exceeded.

1.1.2 The Scheme's carbon management approach is aligned with PAS 2080:2016[1] – *Carbon Management in Infrastructure* technical standard which ensures that carbon reduction is fully integrated into the project team's culture.

1.1.3 It is applicable to all design development, construction planning, procurement, and value chain engagement for the Scheme, and is specified for use by:

- the appointed Principal Designer and Contractor
- sub-contractors, sub-consultants and material suppliers working on the Scheme, to guide their carbon management activities
- the Scheme's National Highways management team

1.1.4 It is designed to inform all relevant parties of:

- how the appointed Principal Designer and Contractor will implement carbon reduction for the Scheme; and
- the requirements to support implementation of the CMP.

1.1.5 The Scheme is a Nationally Significant Infrastructure Project (NSIP) and this Outline CMP has been developed in support of National Highways' application for a Development Consent Order (DCO) to authorise construction, operation and maintenance of the Scheme. An Environmental Impact Assessment (EIA) has been carried out for the Scheme and is reported in the Environmental Statement (ES). The ES and other DCO documents prepared to support the application are available through the Planning Inspectorate project document library: TR010034-000603-A57 Link Road Examination Library Published.pdf (planninginspectorate.gov.uk).

1.1.6 This Outline CMP has been prepared to support the DCO application by the appointed Principal Designer and Contractor to detail the approach and methodology for carbon management at Scheme level for the Detailed Design and Construction stages. At Detailed Design stage it will be developed into a detailed CMP for the Scheme.

Background

1.1.7 As stated in paragraph 2.2.9 in Chapter 2 The Scheme of the ES (REP1-014), the appointed Principal Designer and Contractor has set Scheme specific targets. This includes the following target:

- Support reductions in carbon emission by adhering to the principles of the PAS 2080:2016 – *Carbon Management in Infrastructure Verification* certification. This will help the Scheme reduce its carbon emissions across the whole value chain through effective and innovative design, construction

[1] https://www.carbontrust.com/what-we-do/assurance-and-certification/pas-2080-carbon-management-in-infrastructure

and use. It would also ensure that carbon is consistently and transparently quantified at the key stages of the design process.

1.1.8 There are multiple technical requirements in the PAS 2080 standard, key of which are:

- implement a carbon management process to help an organisation meet PAS 2080 when delivering assets and/or programmes of work
- follow the carbon reduction hierarchy
- quantify, assess and report a Scheme's carbon emissions to inform scheme development and overall asset management
- engage with other value chain members, as early as possible, in a collaborative way of working to identify whole life low carbon solutions, including the selection of relevant low carbon materials and products, innovative design solutions and construction methods.

1.1.9 It defines the specific carbon management actions to be undertaken, and defines the key strategies and approaches to implement the culture and behaviour changes necessary for delivering carbon reduction, specifically:

- collaborative working across the value chain
- implementation of the carbon reduction hierarchy when identifying potential opportunities to reduce carbon
- raising major carbon challenges to design development and construction planning, where key carbon risks are identified.

1.1.10 This would follow a data collection and analysis methodology which adheres to the requirements of the PAS 2080. This would assess carbon use for the whole lifecycle of the project and promote embodied carbon management and commit to achieving carbon reductions.

2. Roles and responsibilities

2.1.1 Commitment from the whole project team and all stakeholders is a key aspect to successful implementation. All members of the project team and the value chain from National Highways to specific materials suppliers and fabricators have the potential to influence low-carbon outcomes.

2.1.2 However, some roles have key responsibilities in leading the efforts to implement low-carbon solutions during design and delivery. These are set out below in Table 2.1. Further details of roles and responsibilities will be integrated into the carbon management process in the detailed CMP.

Table 2.1 – Roles and responsibilities

Role	Main Responsibilities
Appointed Principal Contractor Project Director	• The Project Director has overall responsibility for carbon reduction. • The Project Director will hold responsibility for driving the carbon reduction agenda, leading by example by presenting progress internally and externally. • Empower the project staff to challenge design, specification, procurement, and construction processes. • Ensure early engagement with the supply chain, holding workshops and events to upskill, knowledge share and unlock innovation to whole life cost and carbon • They will attend the carbon reduction workshops, provide opening and closing statements to set their expectations and priorities for carbon reduction, and actively engage in the direction and decision making of the workshops. • They are to lead by example by pro-actively discussing carbon reduction at all relevant opportunities, as part of their day-to-day role, in accordance with the expectations and priorities that they set. • Ensure the project team has the skills and resource to deliver on the carbon objectives of the CMP, and the expectations and priorities that are set. • Participate in all review activities and/ or ensure through delegation that carbon is correctly considered, and decision-making progresses towards achieving the carbon reduction opportunities. • Provide a level of challenge to make sure that focus is given to low carbon opportunities. • Maintain an active relationship with National Highways management team for the Scheme, ensuring they are aware of their responsibilities to support low carbon decision making, carbon reduction progress, and are prepared to discuss challenges that arise.
Appointed Principal Designer Project Director	• Ensure the project team are clearly informed of the carbon objectives of this plan, and the expectations, priorities and challenge of the Project Director, and are empowered to undertake their roles. • Ensure the carbon performance of options are consider and recorded in the Design Decision Log (DDL).

Role	Main Responsibilities
	• Ensure their own knowledge of the carbon performance of options is correct to enable effective participation in design development discussions and reviews. • Ensure the design team has the skills and resource to deliver on the carbon objectives of this plan, and the expectations and priorities that are set.
Appointed Principal Designer Design Manager:	• Through day-to-day running, ensure compliance with and directly support the design team with implementation of objectives of this plan, in particular the carbon reduction hierarchy, and the expectations, priorities and challenge that are set. • Ensure knowledge of the carbon performance of options is correctly developed and recorded in the DDL. • Ensure the carbon assessment of options are carried out to the required level of detail. • Through on-going implicit monitoring, ensure the carbon knowledge or resource issues of the project team are sufficient to meet the objectives.
Appointed Principal Contractor Engineering Manager:	• To provide strategic engineering and design management, strong leadership and control of a multi-disciplinary team comprising engineering resources at all levels. • Ensure full design integration between all design disciplines is achieved and assessed for all build ability aspects during both the development stage and construction stage of a scheme. • To lead, support and implement digital design and carbon integrated method-led construction. • To support and advise the design manager throughout the hotspot review and carbon design optioneering stage.
Appointed Principal Contractor Construction Manager:	• To provide strategic operational management, strong leadership and control of a multi-disciplinary team comprising engineering and supervisory resources at all levels and facilitation of strong links with other teams within and external to the project. • To support and advise the engineering and design manager throughout the hotspot review and carbon design optioneering stage, to ensure carbon in construction is considered. • To implement the low carbon in construction plan in all works packages. • Ensure the on-site workforce complete the relevant carbon training.
Appointed Principal Contractor Supply Chain Manager:	• To provide strategic operational and supply chain management, strong leadership and control of our supply chain data and operational performance. • To collaborate with our vendors and suppliers to ensure all operations meet carbon, quality, and safety standards. • To support and advise the sustainable procurement manager throughout the carbon integrated procurement.

Role	Main Responsibilities
Appointed Principal Contractor Sustainable Procurement Manager:	• To provide strategic operational management, strong leadership and control of a multi-disciplinary team comprising engineering and supervisory resources at all levels and facilitation of strong links with other teams within and external to the project. • To lead, support and implement, carbon integrated procurement throughout the Scheme design and pre-construction.
Appointed Principal Contractor Programme Manager:	• Ensure carbon management actions are included in the programme to ensure that they are undertaken at the required time, to enable the required design decision making, and performance reporting.
Appointed Principal Designer Carbon Manager	• Develop and document the carbon management plan for the Scheme. • Support the Directors and Managers with implementation of this plan, through day-to-day working to assist them with understanding: - The actions required from the project team. - Pragmatic, but effective levels of options assessment. • Lead modelling the carbon performance of the completed designs.
All Project Team Staff	• As part of day-to-day activities and aligned with the objectives, expectations, priorities and challenges, minimise carbon through challenging design, buildability, planning and integration of activities, logistics and procurement. • Ensure that the potential carbon reduction benefits of all innovations are voiced to relevant project leads, and suitably recorded, along with the other parallel benefits.

3. Carbon reduction objectives

3.1 Plans, policies and requirements

3.1.1 This Outline CMP is underpinned by national policy as well as plans, policies and requirements of National Highways. These are detailed below.

The Government's Transport Decarbonisation Plan (TDP) 2021

3.1.2 In response to the UK's net zero emissions target by 2050, the Department for Transport (DfT) published "Decarbonising Transport: A Better, Greener Britain" – referred to as the Transport Decarbonisation Plan (TDP) on 14 July 2021. The TDP is framed by the Climate Change Act 2008, amended in June 2019 to commit to achieving Net Zero by 2050 for territorial (or "domestic") Greenhouse Gas (GHG) emissions.

3.1.3 The TDP outlines a number of commitments by the Government to remove all emissions from road transport to achieve net zero target by 2050. It sets out this vision for decarbonised transport emissions through three strategic priorities:

- Accelerating modal shift to public and active transport
- Decarbonisation of road vehicles
- Decarbonising how we get our goods

3.1.4 Commitments that will have a direct impact on road user emissions from the Scheme will include:

- An end to the sale of new petrol and diesel cars and vans by 2030
- All new cars and vans to zero emissions at the tailpipe by 2030
- All new L-category vehicles to be fully zero emissions at the tailpipe by 2035

3.1.5 The Scheme supports the TDP through managing whole life carbon in transport infrastructure and reducing associated embodied emissions. Alongside the TDP, the DfT has initiated a Carbon Management Programme to embed an integrated system for managing whole life carbon of infrastructure projects at a portfolio level. The framework will include capital carbon, i.e. emissions associated with the creation or major modification of an infrastructure asset and be guided by the principles of PAS 2080.

National Highways' Roads Investment Strategy 2

3.1.6 The Scheme design will be carried out in accordance with the National Highways Delivery Plan 2020-2025 (the second roads period)[2], which also sets out Key Performance Indicator targets, including:

- Reduce National Highways' carbon emissions as a result of electricity consumption, fuel use and other day to day operational activities during the second road period to levels defined by baselining and target setting activities in 2020-21.

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/951100/road-investment-strategy-2-2020-2025.pdf

3.1.7 This will be assessed against the following Performance Indicator:

- Supply Chain Carbon emissions: emissions from National Highways' contractors (including embodied carbon from construction) per million pounds spent.

National Highways' Net Zero Highways Plan

3.1.8 National Highways published its 'Net Zero Highways Plan' ('the Plan')[3] in July 2021. The Plan, which is aligned with the TDP, sets out new aspirational greenhouse gas reduction targets. The Plan sets out a roadmap with targets to cut corporate emissions (100% of corporate emissions to be net zero without purchased offsetting by 2030), maintenance and construction emissions (40-50% reduction in emissions compared to 2020 by 2030, and 100% of schemes net zero by 2040), and road users (100% of the network will be net zero by 2050).

3.1.9 The construction and maintenance emissions are of most relevance to the Scheme. Here, the Scheme can already show proactive actions that directly contribute to the commitments National Highways has set out. In particular, the commitment to implement PAS 2080 compliant carbon management system throughout detailed design and into construction is ahead of the commitment to certify a carbon management system by 2022 and could play a role in informing how that system is specified.

3.1.10 The Plan sets out a wide range of objectives covering all of its activities. For construction the key objectives are:

- 0-10% reduction in emissions by 2025 compared to 2020, and 40-50% by 2030 compared to 2020
- Tier 1 and Tier 2 suppliers have certified carbon management systems by 2025
- By 2022 carbon reduction is a key metric within National Highways innovation and research programs
- By 2022 National Highways have a continually improved database of low carbon solutions by asset type in place.

DMRB GG 103 Introduction and general requirements for sustainable development and design

3.1.11 The principles outlined in the Design Manual for Roads and Bridges (DMRB) GG103 *Introduction and general requirements for sustainable development and design*[4] discuss how different engineering and environmental constraints identified throughout design development and assessments have influenced the design.

3.1.11.1 The specific requirements specified in DMRB GG 103 are:

- Design shall aspire to minimise greenhouse gas emissions.

[3] https://nationalhighways.co.uk/media/eispcjem/net-zero-highways-our-2030-2040-2050-plan.pdf
[4] https://www.standardsforhighways.co.uk/prod/attachments/89d10ef2-7833-44df-9140-df85cd6382b9?inline=true

- Carbon emissions (greenhouse gases or carbon dioxide equivalents) associated with the whole life of a project shall be minimised.
- The minimisation of carbon emissions may be achieved by working in accordance with a recognised standard or specification agreed with National Highways, e.g. Carbon Management in Infrastructure PAS 2080

3.2 DMRB LA 114 Climate assessment and Register of Environmental Actions and Commitments

3.2.1 DMRB LA 114 Climate states that: '*Projects shall seek to minimise carbon emissions in all cases to contribute to the UK's target for net reduction in carbon emissions*'. This requirement applies whether or not the Scheme is anticipated to generate a significant effect on climate.

3.2.2 Chapter 14 Climate of the ES (REP1-019) included an assessment of GHG emissions during the construction phase, which was prepared in accordance with DMRB LA 114.

3.2.3 Tables 14.11 and 14.12 of Section 14.8 of Chapter 14 of the ES includes the mitigation measures that were included in the carbon assessment for the Scheme.

3.2.4 Emissions are mitigated by applying the carbon reduction hierarchy set out in DMRB LA 114: Avoid / Prevent, Reduce, Remediate. Items at the top of the hierarchy have a greater potential to reduce emissions and are prioritised.

- Avoid / prevent:
  - Maximise potential for re-using and / or refurbishing existing assets to reduce the extent of new construction required
  - Explore alternative lower carbon options to deliver the project objectives (i.e. shorter route options with smaller construction footprints).
- Reduce:
  - Apply low carbon solutions (including technologies, materials and products) to minimise resource consumption during the construction, operation, user's use of the project, and at end-of-life
  - It is recommended that as far as possible, materials are locally procured to minimise transportation emissions
  - Construct efficiently, using techniques (e.g. during construction and operation) that reduce resource consumption over the life cycle of the project
- Remediate:
  - After addressing avoid/prevent and reduce measures projects will identify, assess and integrate measures to further reduce carbon through on or off-site offsetting or sequestration.

3.2.5 Through the commitment to adhere to the principles of the PAS 2080, this hierarchy is now embedded in the project team's ways of working.

3.2.6 The Register of Environmental Actions and Commitments (REAC) (REP1-037), which forms part of the Environmental Management Plan (EMP) (REP3-010) identifies the environmental mitigation commitments (both embedded and essential), to address potential environmental effects of the Scheme which are identified in each topic chapter of the ES. In particular, actions C1.8, C2.6 and C3.4 of the REAC refers to implementing a comprehensive CMP from the Detailed Design stage and through construction.

3.2.7 The commitments within the REAC are secured by Requirement 4 in Schedule 2 of the draft Development Consent Order (dDCO) (REP3-013).

3.3 Carbon management objectives

3.3.1 The requirements of PAS 2080 and the plans, policies and requirements set out in section 3.1 and 3.2, a consistent requirement of carbon reduction for highways schemes.

3.3.2 In response to and aligned with these, the objectives of this plan are to:

- Reduce the whole life carbon footprint of the Scheme as low as reasonably practicable by applying the carbon reduction hierarchy, with unlimited thinking, to promote innovation and carbon reductions, through development of clever and collaborative design develop and construction planning proposals, with direct value chain engagement.
- The appointed Principal Designer and Contractor will actively identify and pursue carbon reduction opportunities and risks through all means as part of the integrated scheme development.
- A baseline carbon model will be produced, and the model will be used to:
    - identify carbon hotspots to inform design development and construction planning
    - as the basis for determining performance improvements achieved during the Detailed Design stage.
- An output carbon model and report will be produced to fully quantify and document the carbon reductions that have been achieved.

4. Carbon management principles

4.1 Carbon reduction hierarchy

4.1.1 Cost and carbon reductions have been widely shown to be comparatively closely linked, i.e. the carbon reduction hierarchy set out in PAS 2080, which specifies:

- **Build nothing**: evaluate the basic need for an asset and/or programme of works and explore alternative approaches to achieve outcomes set by the asset owner/manager
- **Build less**: evaluate the potential for re-using and/or refurbishing existing assets to reduce the extent of new construction required
- **Build clever**: consider the use of low carbon solutions (including technologies materials and products) to minimise resource consumption during the construction, operation and user's use stages of the asset or programme of work
- **Build efficiently**: use techniques (e.g. construction, operational) that reduce resource consumption during the construction and operation phases of an asset or programme of work 'Build nothing' and 'build less' are the two primary carbon reduction mechanisms.

4.1.2 The carbon reduction hierarchy specifies 'build nothing' and 'build less' as the two primary carbon reduction mechanisms.

4.1.3 Secondary to build nothing and build less are 'build clever' and 'build efficiently'. These relate to clever use of technology, and alternative materials. These are emerging areas for which there is not extensive best practice, primarily because lower carbon materials and technology relevant to road schemes is only just maturing, or are in development, e.g. warm asphalt and low carbon concrete. However, where prices are not excessive, significant reductions can potentially be achieved, due to the extensive use of relevant materials, i.e. recycled sub-base, warm asphalt, lower carbon concrete through alternative ingredients, and lower carbon steel from energy efficient production.

4.2 Carbon management at the Preliminary Design stage

4.2.1 The starting point for the PAS 2080 assessment will consider carbon management opportunities that were undertaken during the Preliminary Design. It will be based on estimated construction data from the available design information based on the proposals that were available during the preliminary design stage. The assessment will therefore use the Preferred Route Announcement (PRA)[5] as a baseline to measure carbon savings against.

4.2.2 Construction processes are estimated based on previous project data for a similar scope of work and therefore are based on conventional materials and methods, as data on alternative low carbon methods are not currently available.

[5] The Preferred Route Announcement (PRA) was made by the Applicant on 2 November 2017. Option A was selected as the Preferred Route to be progressed to the next stage of development. This design was taken forward into Preliminary Design and was

4.2.3 Since the PRA was made in November 2017, the Scheme has been amended, based on consultation with stakeholders, and more detailed assessments of traffic, engineering, buildability and environmental factors.

4.2.4 A substantial quantity of emissions embodied within materials will be saved from the Scheme, compared with this baseline. These amendments are illustrated in Insert 4.1.

Insert 4.1: Examples of Scheme carbon reductions

Roe Cross Link	Mottram Underpass	Mottram Moor Junction	River Etherow Bridge
› Removal of Roe Cross Link › Significant reduction in earthworks, pavement, drainage & lighting › Avoided construction of Cricket Ground Roundabout	› Relocation of underpass › Reduced diameter of piles › Reduced reliance on specialist piling plant, which has limited availability	› Roundabout replaced with crossroads junction › Reduction in junction footprint and extent of earthworks, pavement and drainage › Operational performance improved	› Span of structure reduced › Removal of central pier › Resulted in reduced size of overall structure

4.2.5 The removal of Cricket Ground Roundabout and Roe Cross Road junction, as well as the conversion of Mottram Moor junction from a roundabout, has resulted in a reduced need for materials associated with such junctions. The design modifications from the PRA design have resulted in reduced number of compound areas and less land uptake. There is opportunity for further savings, if risks regarding use of recycled materials for pavements can be resolved. The use of Warm Mix Asphalt (WMA) as best practice also offers further savings.

4.2.6 During the Detailed Design stage, the PAS 2080 process will be used to identify opportunities for carbon savings, e.g. design and construction options for the Mottram Underpass will include consideration of carbon performance, and it is the intent that the lowest carbon solution will be progressed as the preferred choice for detailed design.

4.2.7 The assessment to be undertaken will include reviewing the Design Decision Log against the Carbon Management Hierarchy.

4.2.8 For the construction stage of the Scheme, calculations will be undertaken using Highways England's Carbon Tool (herein after referred to as 'The Carbon Tool'). This is reported in Chapter 14 of the ES, and used the Preliminary Design, as submitted with the DCO application, as the baseline.

4.3 Project team engagement

Incorporating Low-Carbon Ideas

4.3.1 Commitment to the CMP from all project stakeholders is vital. Workshops have been hosted by relevant leads to improve joined-up thinking and generate opportunities to make GHG emission savings during all stages of the design.

4.3.2 To initiate and embed the carbon management process into the project team's way of working the following were undertaken at an early stage of the Preliminary Design:

- carbon briefing – a value chain meeting was held to initiate the carbon management process and secure buy in from all project stakeholders
- engagement session – an initial workshop held with the whole project team followed soon after to capture ideas to reduce carbon within the design. These ideas will be carried forward in the Carbon Management Process (see section 5 of this Outline CMP).

4.3.3 Regular calls at the Preliminary Design stage, which included the design, construction, and environmental disciplines, as well as the supply chain, have been held. These have led to a more thorough understanding of the environmental and engineering constraints across the team, and identified opportunities to introduce more carbon efficient options, leading to a better considered design. The discipline leads attended weekly online design meetings where design developments were communicated to the team and discussions around constraints and opportunities could be held. This allowed the team to draw on experienced team members, whilst contributing to driving efficiencies that would lead to carbon emissions savings.

Whole life costing and low-carbon targets

4.3.4 Whole life costing has been thoroughly considered in the major disciplines that could drive cost in the project, and the principles have formed the basis of design thinking, e.g. pavements and structures. Carbon savings are not prioritised against cost and programme, rather cost, programme and carbon are three multiple project metrics that must be considered collectively. Each project development consideration is assessed in its own right and against the performance of the overall scheme, and the metrics are balanced accordingly.

4.3.5 Across all disciplines, a balance has had to be maintained between whole-life costing and other major considerations, such as construction cost and practical maintenance complications. In a small number of cases, such as with structures, the preferred option favours durability over total costs. The whole life cost savings are made through value engineering and optioneering. One example of the savings was scoping out a junction, thus reducing six months of earthworks and construction costs.

4.3.6 Value engineering at the Preliminary Design stage was therefore applied to the baseline scenario as options were explored to build minimum (the ‘build less’ principle) rather than use of low-cost materials (the ‘build clever’ principle). The ‘build clever’ and ‘build efficiently’ principles will be fully integrated into the design as the detailed CMP is developed.

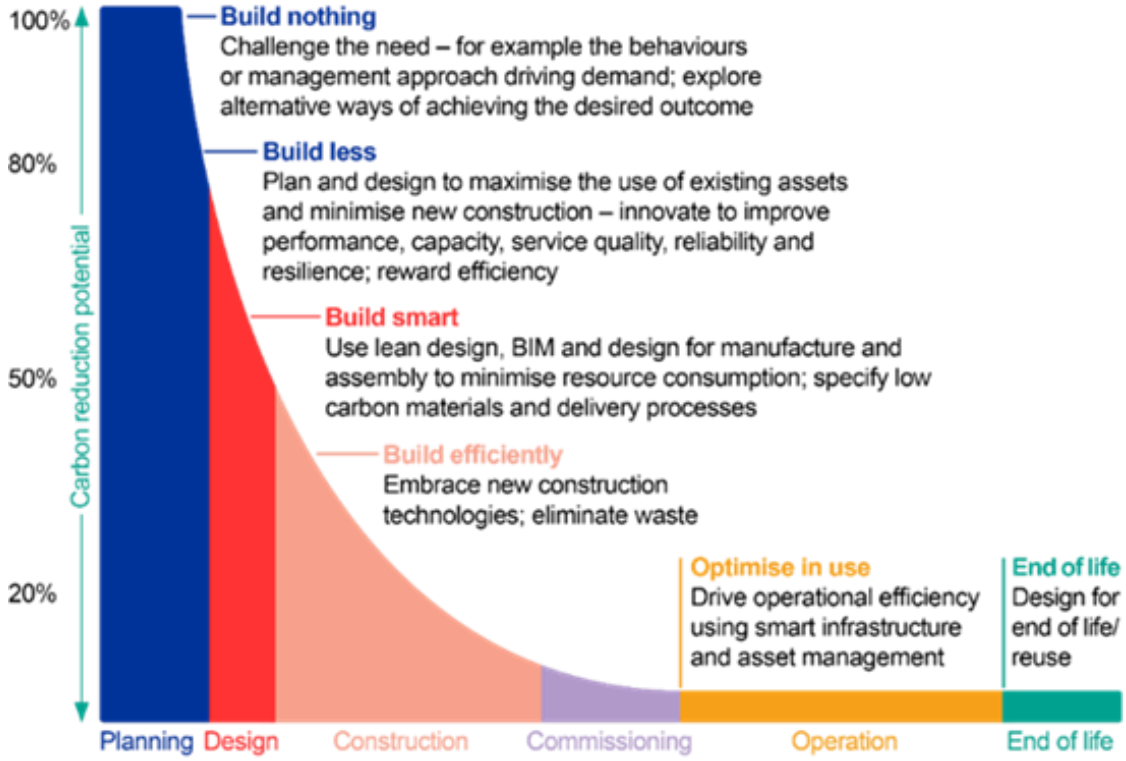
4.3.7 Furthermore, the Scheme will be planned around low-carbon construction principles and targets. Low-carbon target setting will consider the use of electric construction plant, carbon efficient power supplies, use of local materials to reduce road haulage, and using standardised products build off site to reduce construction durations. As part of the detailed CMP, a low carbon in construction plan will be developed setting low carbon construction principles, processes and targets. The plan will prioritise on the most carbon intensive aspects of construction include plant, compound, material logistics and construction method.

5. Carbon management process

5.1 Whole life carbon management approach

5.1.1 Taking a whole life carbon management approach to reducing GHG emissions identifies the best combination of opportunities across the project lifecycle using the PAS 2080 carbon reduction hierarchy (Insert 5.1) shows the greatest opportunity to reduce whole life carbon emissions is at the early stages of the project.

Insert 5.1 The PAS 2080 Carbon Reduction Hierarchy

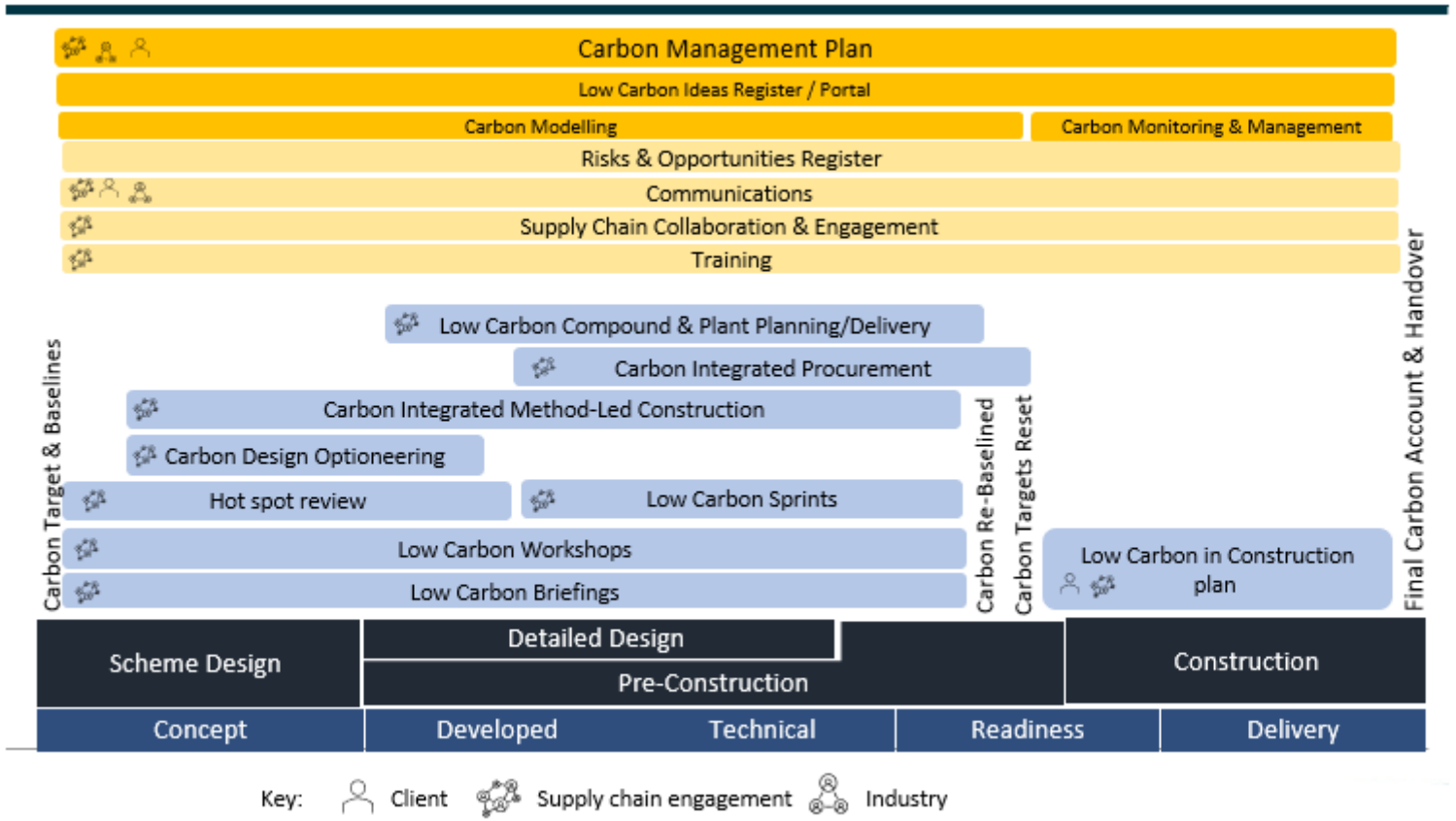


5.1.2 The CMP processes are shown in Insert 5.2. The greatest opportunities to reduce carbon are considered earlier in the project life cycle. The project team will work collaboratively to ensure:

- design options fully consider low carbon alternatives, utilising the strengthen of the supply chain. This will be undertaken through **low carbon workshops and sprints**[6]
- carbon in construction is considered as early as possible through our **method-led construction assessments** (see section 5.3), e.g. enabling the selection of low carbon plant or local materials
- carbon in construction is accurately **calculated to ensure low carbon design and construction methods are selected**.

[6] A short/accelerated multi-disciplinary process where design ideas for a key design features are validated, innovative ideas are explored and problems are solved to reduce risk.

Insert 5.2 Carbon management plan



5.2 Carbon Modelling

5.2.1 The CMP will use a number of ways to assess carbon within the Scheme.

Carbon calculation tool

5.2.2 Carbon is quantified throughout the Scheme using the appointed Principal Designer's in-house 'Carbon Knowledgebase' carbon calculation tool. Carbon models are produced for the whole Scheme covering all assets and operational activities within the Scheme boundary, over its design life. This data is used to identify:

- Carbon Hot Spots to allow low carbon sprints to focus on the areas of greatest carbon intensity
- Monitor and track carbon performance

Integrating carbon into cost estimates.

5.2.3 A robust cost estimate is produced by the appointed Principal Contractor using specialist in-house software. This software can also undertake an analysis of the carbon impact of the decisions that are made. The carbon functionality is built into the software with a column to input a unit carbon conversion for all resources. This enables the Scheme's commercial team to calculate the total carbon of the products chosen in the same way that cost is calculated.

Procurement

5.2.4 Carbon will be integrated into the procurement processes. It is the intention that all carbon questions will have a weighting of 10%.

Communications

5.2.5 The spotlight will be on carbon each and every day to drive real change. The detailed CMP will be developed in collaboration with the supply chain and key stakeholders. Requirements of the CMP will be integrated into all project plans and communicated with the project team through briefings, inductions, workshops and toolbox talks, so that low carbon is embedded throughout.

Carbon Management Process

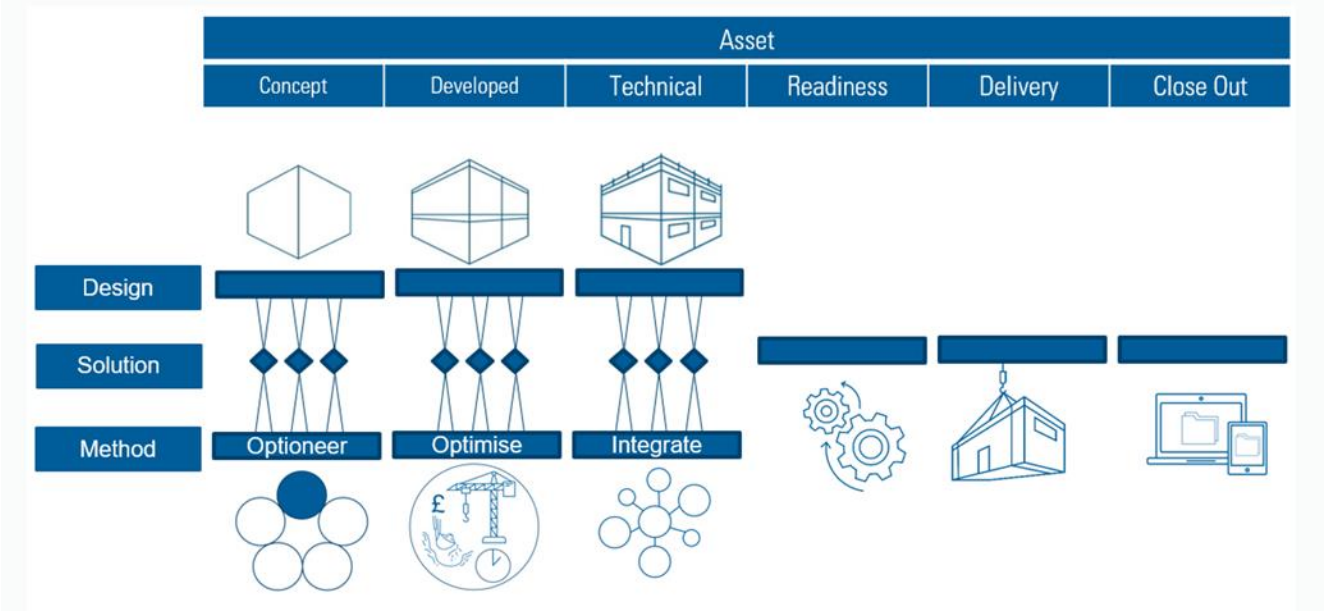
5.2.6 Method-led construction is a framework developed by the Principal Designer and Contractor which is being used on the Scheme to align method and design to ensure the optimal solution is developed and delivered on the project. By using method-led construction to structure the project in pre-construction we can ensure ideas for innovation and carbon reduction are considered as early as possible during the asset's lifecycle during solutions development. It also provides a platform to ensure constraints and constructability are considered in suitable detail before designs are finalised and construction begins

Method-led principles

5.2.7 The Scheme can be broken down into several key structures (for example Mottram Underpass) as well as the asset types that make up the fundamental

construction areas of the Scheme (drainage, earthworks, kerbing, etc.). Each of these key structures and asset types form a focus area. For each of these focus areas the design and method will follow a lifecycle to map the development of the design and method in parallel through pre-construction, construction, and close-out. This process will begin with a design sprint for each focus area during concept stage (see Insert 5.3).

Insert 5.3 Method-led principles process



5.2.8 Following this structure allows peer reviews to be completed for each focus area, as required, and scheduled into the pre-construction programme.

Incorporating low-carbon ideas

5.2.9 The ideas from the initial workshop held with the whole project team to capture ideas to reduce carbon within the Scheme design were reviewed and categorised to align with the focus areas for each design sprint.

5.2.10 During each design sprint these ideas are brought into discussion and agreed whether to be carried forward. All decisions are recorded within the DDL to allow tracking of the decision from idea through to agreement and close.

5.2.11 The sprints provide a platform where low carbon ideas can be considered in the early stages of solution development and built into the final solution.

Process actions

5.2.12 The following actions provide the specific details on how the low carbon design will be undertaken

- Identify and pursue carbon reduction opportunities and risks through all means as part of the integrated scheme development, specifically by ensuring carbon performance is:

    - Proactively considered by all project staff during Method Led Construction and detailed design development and construction planning, based on personal expertise and carbon reduction training
    - Logged in the DDL by all staff, as necessary
    - Consider during weekly DDL reviews
    - Raised as a metric for consideration with all value chain engagements, as part of design development and construction planning.
- Through an initial carbon reduction workshop:
    - All project staff will be trained on the carbon reduction hierarchy, their role-specific means for applying it, and the key strategies and approaches to implement the culture and behaviour changes necessary for delivering carbon reduction, as set out in the CMP
    - An initial set of carbon reduction opportunities will be identified
- Update training to all staff will be continuous through review of the carbon management progress that has been made during the design development
- Plans will be put in place to identify and manage any outstanding actions that remain
- A carbon model will be produced in the Carbon Knowledgebase tool using the baseline design, and the model will be used to:
    - Identify carbon hotspots to inform design development and construction planning
    - As the basis for determining performance improvements achieved during Detailed Design
- During design development, materials and construction options will largely be assessed on a working basis using mental arithmetic, indicative materials and construction quantities and carbon factors; and as necessary, more complex options will be assessed using quantified assessments in the Carbon Knowledgebase tool
- The detailed CMP will identify the stages of the project lifecycle that carbon modelling will be used.

5.3 Reporting

5.3.1 The output from the carbon model will be used to produce a Carbon Management Report to fully quantify the carbon reductions that have been achieved, and document how this had influenced decision making.

5.3.2 PAS 2080 has three tiers of conformity covering: independent third-party certification; other-party certification; and self-validation. The current proposal is for self-validation.

5.3.3 In addition, the appointed Principal Contractor has a contractual requirement to report on cost and carbon performance to National Highways, which includes reporting on carbon emissions. This will be via National Highways' Carbon Tool,

which will be populated on a quarterly return basis through the construction process and during maintenance activities through the life of the Scheme, as part of National Highways' existing reporting processes. This reporting is part of the Collaborative Performance Framework (CPF) which scores the contractor on 'tonnes of carbon per £m.

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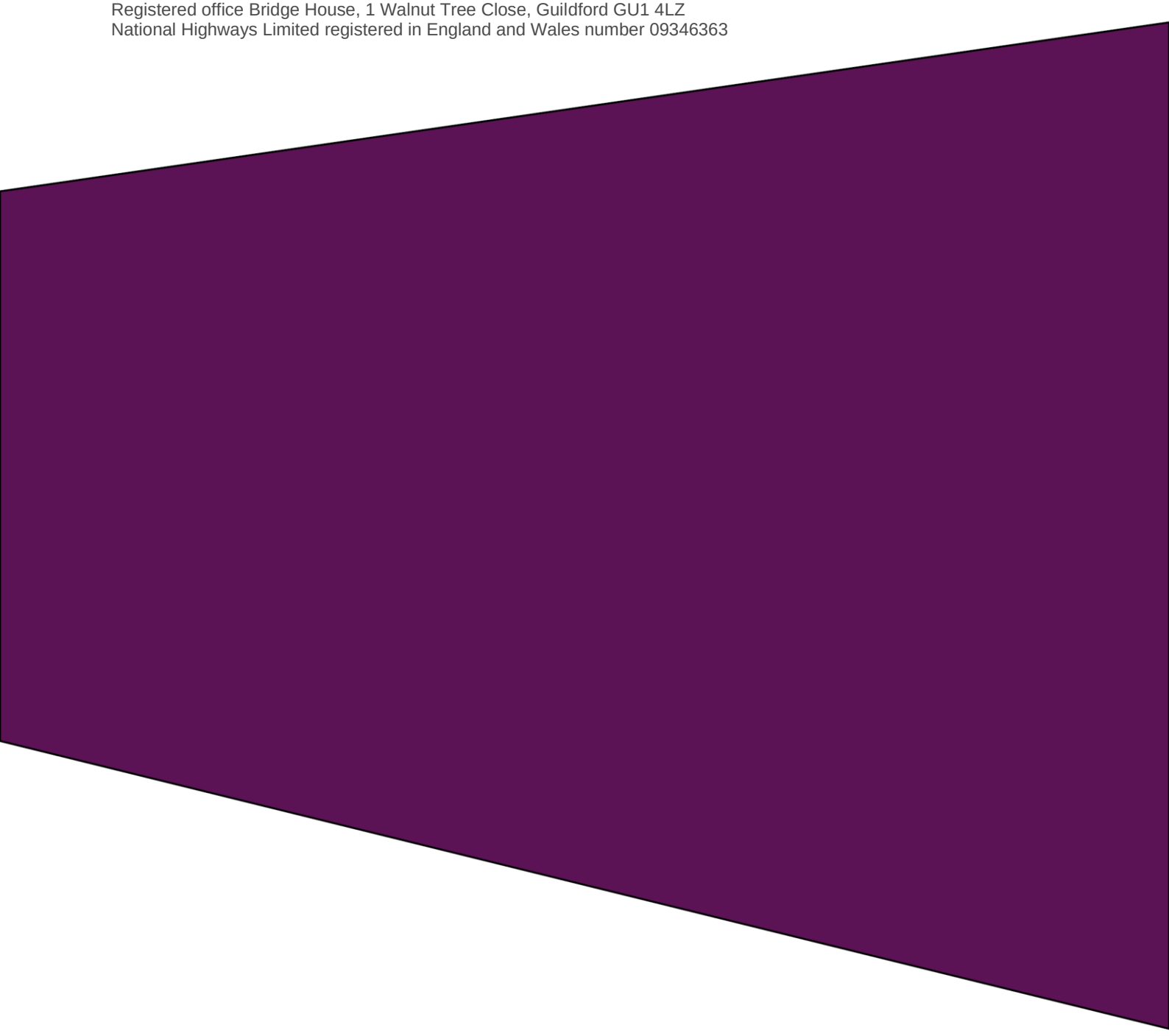

ANNEX C: ENVIRONMENTAL METHOD STATEMENTS

To be produced in response to the statutory process by the appointed Principal Contractor for the Scheme as part of the EMP (Second iteration)

Annex C.1: Design Approach Document

A57 Link Roads

TR010034

7.2 Environmental Management Plan (First Iteration)

Annex C1: Design Approach Document

Rule 8(1)(k)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

April 2022

Table of contents

1. Introduction

1.1. Introduction

1.1.1. In accordance with Part 5.26 of the National Highways Licence, the A57 Link Roads Scheme (hereafter referred as 'the Scheme') must have due regard to relevant principles and guidance on good design, to ensure that the development of the network takes account of the geographical, environmental and socio-economic context. This Outline Design Principles Document discusses how different engineering and environmental constraints identified throughout design development and assessments have influenced the design.

1.1.2. The Scheme is a Nationally Significant Infrastructure Project (NSIP); therefore this document has been developed in support of National Highways' application for a Development Consent Order (DCO) to authorise construction, operation and maintenance of the Scheme. An Environmental Impact Assessment (EIA) has been carried out for the Scheme and is reported in the Environmental Statement (ES).

1.1.3. This document should be read in conjunction with the following plans and reports included with the DCO application:

- Environmental Statement Chapter 2 The Scheme (REP2-005)
- Scheme General Arrangement (ES Figure 2.2 (APP-074))
- Environmental Masterplan (ES Figure 2.4 (APP-074))
- Works Plans (REP5-002)
- Streets, Rights of Way and Access Plans (REP5-003)
- Scheme Layout Plans (REP5-004)
- Engineering Drawings and Sections (REP5-005)
- Culverts and Drainage Plans (REP1-008)
- Case for the Scheme (REP2-016)
- Drainage Design Strategy Report (APP-188)
- Environmental Management Plan (EMP) (First iteration) (REP6-015)
- Register of Environmental Actions and Commitments (REAC) (REP6-008)
- Outline Carbon Management Plan (REP5-023)
- Outline Landscape and Ecology Management and Monitoring Plan (REP6-013)

1.1.4. This document is included in Annex C 'Environmental Method Statements' of the EMP (First iteration).

1.1.5. This Outline Design Principles Document presents how the Scheme has had due regard to good design principles and the local environment has been an integral part of the Scheme. The report has been produced in accordance with the

principles outlined in the Design Manual for Roads and Bridges (DMRB) GG103 “Introduction and general requirements for sustainable development and design” (Revision 0, July 2019) and National Highways’ ‘The Road to Good Design’ (January 2018). It discusses how different engineering and environmental constraints identified throughout design development and assessments influenced the design. It also sets out the aims of the objectives and the design vision for the Scheme.

1.2. Securing commitments

1.2.1. This Outline Design Principles Document will be updated by the appointed Principal Designer and Contractor into a detailed Design Principles Document, as appropriate and necessary, prior to commencement of works in accordance with Requirement 4 in Schedule 2 of the draft Development Consent Order (dDCO) (REP6-002). As detailed in Action GEM1.1 of the REAC (REP6-008), the detailed Design Principles Document will be one of a number of documents that will be annexed to the EMP (Second Iteration) under Requirement 4.

1.2.2. The Applicant has, and will continue to, maintain dialogue with the relevant local authorities, the local highway authority and the Environment Agency in relation to the development of the plans which will be included in the EMP (Second iteration). In any event, Requirement 4(1) expressly requires those authorities and the Environment Agency to be consulted on the EMP (Second iteration) before it is submitted to the Secretary of State for Transport for approval. As the Design Approach Document will be appended to the EMP, it will be included within this requirement.

2. Good design

2.1. Policy context

2.1.1. Whilst the National Policy Statement for National Networks (NPSNN) is the primary source of policy under which the Scheme application will be considered, policy within the National Planning Policy Framework (NPPF) advocates for good design, as do the Design Principles for National Infrastructure, and the design principles stated within The Road to Good Design. How the Scheme considers these is summarised below.

National Policy Statement for National Networks (NPSNN)

2.1.2. Appendix B of the Case for the Scheme (REP2-016) provides full details of the Schemes compliance with the NSPNN. Below summaries how the Scheme considers the importance placed on good design.

2.1.3. Paragraphs 4.28-4.35 emphasise the importance placed on ensuring good design in the development of infrastructure projects. Government statements emphasise the importance placed on ensuring good design in development.

2.1.4. The Scheme design aligns with the importance placed on good design in a number of ways, primarily by responding to setting, place and people. This has been achieved through a thorough appreciation of the site context in order to fully understand and appreciate the receiving environment's physical and cultural makeup. This appreciation has helped to inform the design of the route and its associated landform, planting, materials and components to ensure they are sympathetic to the locale and fit into this context as appropriately as possible.

2.1.5. This has included the integration of locally appropriate habitats and water features, including sustainable drainage provision; by creating networks of green spaces and encouraging walking and cycling through a more connected local environment, by promoting safety and security with safe legible and well-lit wayfinding; and in responding to local place, character and identity by incorporating natural features which reflect the local context, including landforms, woodlands, scrublands, grasslands and hedgerows which will seek to follow local species and patterns. The design also reflects local receptors in protecting sensitive views and respecting the local landscape character wherever possible.

2.1.6. Paragraph 5.160 refers to the minimisation of adverse landscape and visual effects through appropriate siting of infrastructure, design and landscaping schemes.

2.1.7. The landscape design principles for the Scheme reflect the specific landscape context in terms of creating sympathetic landform and slope profiles which reflect those found in the locale, which is a Pennine fringe landscape of rising undulating topography, characterised by pastural farmland, interspersed with residential settlements and some industry. The planting patterns and species will also be designed to reflect the local context and have been developed to ensure they are appropriate and sensitive to the wider landscape setting to help minimise adverse impacts on landscape character. The landscape design delivers a blend of openness and enclosure to maintain a mix of open views

whilst protecting and screening other views from sensitive receptors, via landform, fencing and planting. Planting will also provide habitat for wildlife and contribute towards biodiversity with a range of habitats provided across the scheme, including different types of woodland and grassland as well as scrub and extensive new hedgerows. The road is set in earthworks cuttings or false cuttings along much of the length, which will help to reduce the associated impacts on landscape character as well as noise and visual impacts.

The National Planning Policy Framework (NPPF)

2.1.8. The NPPF was updated in July 2021. The biggest change to the NPPF is that the updated version places greater emphasis on beauty. The revised policies also demonstrate a focus on place-making, the environment, sustainable development and the importance of design codes. The key sections of the NPPF applicable to the Scheme design are set out below along with how the Scheme considers these.

2.1.9. Paragraph 7 (Chapter 2: Achieving Sustainable Development) includes reference to the UK Government's signing up to the 2030 Agenda for Sustainable Development and achieving the 17 Sustainable Development Goals. The Scheme does not conflict with these Sustainable Development Goals including building resilient infrastructure and promoting sustained, inclusive, and sustainable economic growth.

2.1.10. Paragraph 8(b) (Chapter 2: Achieving Sustainable Development) refers to fostering well-designed, beautiful and safe places. The Scheme includes appropriate landscape mitigation measures as illustrated in ES Figure 2.4 Environmental Masterplan (APP-074) that shows the landscape design strategy, which is integral to the Scheme design.

2.1.11. Paragraph 96 (Chapter 8: Promoting Healthy and Safe Communities) states that local planning authorities should work proactively with public infrastructure providers including further education colleges, hospitals etc.to resolve key planning issues before applications are submitted. Although this is not directly relevant to the Scheme, it should be noted that the Project has undertaken extensive consultation on the development of the Scheme. This is reported in full in the Consultation Report (APP-026) and its appendices (APP-027-APP-052).

2.1.12. Paragraph 110 (Chapter 9: Promoting Sustainable Transport. Considering Development Proposals), relates to assessing sites that may be allocated in plans, or specific applications for development. That is (c) the design of streets, parking areas, other transport elements and the content of associated standards reflecting current national guidance, including the National Design Guide and the National Model Design Code.

2.1.13. The National Design Guide and National Model Design Codes are for use by local planning authorities as a basis for the production of design codes and guides and in decision making, so are not strictly relevant to the Scheme. However, similar principles have been adopted for the design of the Scheme as it follows the guidance set out in the National Highways publication 'The Road to Good Design'. Similar themes of the Road to Good Design and the National Design Guide include:

- The importance of context, that is ensuring that road design its sensitive to the landscape, heritage and the local community.
- The need to achieve an environmentally sustainable design.
- Bringing lasting value.

2.1.14. How the Scheme considers the principles set out in the Road to Good Design is set out in section 2.2 of this report.

2.1.15. Paragraph 131 (Chapter 12: Achieving Well Designed Places) refers to requirements around new streets and trees. This specifically addresses new streets in urban environments. The Scheme does not create any 'new streets' in urban environments. Notwithstanding this, Chapter 7, Landscape and Visual Effects of the Environmental Statement (ES) (APP-063) explains that the design of the Scheme includes a comprehensive landscape strategy including mitigation tree and hedgerow planting.

2.1.16. Paragraph 134 (Chapter 12: Achieving Well Designed Places) states the requirement for planning authorities to refuse development that is not well designed, especially where it fails to reflect local design policies and government guidance on design. Whilst this is relevant, the NPSNN remains the primary policy framework for the Scheme and Appendix A of this document sets out how the Scheme complies with the NPSNN's requirements around good design, which also apply here.

2.1.17. Paragraph 161 (Chapter 14: Meeting the challenge of climate change, flooding and coastal change) state that opportunities provided by new development and improvements in green and other infrastructure should be used to reduce the causes and impacts of flooding making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management. A Flood Risk Assessment (FRA) (REP6-014) has been produced for the Scheme. The FRA draws on a range of disciplines and designs, including, drainage, earthworks, culverts, and previous hydrological and hydraulic modelling to ensure all sources of flood risk are assessed as part of the FRA. The FRA describes the existing flood risks for all flood risk sources, followed by an assessment of flood risks to the Scheme, mitigation measures and lastly residual flood risk.

2.1.18. The Drainage Design Strategy Report (APP-188) provides the drainage strategy for the Scheme. Section 6.1 describes the basis of the drainage design.

2.1.19. Paragraph 176 (Chapter 15: Conserving and Enhancing the Natural Environment) explains that development within the setting of National Parks, the Broads and Areas of Outstanding Natural Beauty should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas. The Scheme does not fall within any AONBs, National Parks or the Broads but lies within the setting of the Peak District National Park (PDNP). The Landscape and Visual Effects (Chapter 7) of the ES (REP6-006) includes the effect on visual receptors at select locations within the PDNP as this was specifically requested, and the locations agreed, by the PDNPA. The effect on the landscape setting of the PDNP was not a specific request of the PDNPA.

2.2. Overarching design principles

Design Principles for National Infrastructure

2.2.1. The National Infrastructure Commission provides expert, impartial advice to the government on national infrastructure needs and solutions. The National Infrastructure Commission's Design Group was established in 2019 to inspire renewed ambition for the quality of the UK's infrastructure and subsequently published in February 2020, its Design Principles for National Infrastructure. The four principles, as listed below, aim to guide the planning and delivery of future major infrastructure projects:

- Climate - Mitigate greenhouse gas emissions and adapt to climate change
- People - Reflect what society wants and share benefits widely
- Places - Provide a sense of identity and improve our environment
- Value - Achieve multiple benefits and solve problems well

2.2.2. Organisations and sectors are encouraged to build upon this approach by developing their own design vision, ambition and plan that embraces all the principles. For National Highways, this is addressed in their document, The Road to Good Design as set out below.

The Road to Good Design

2.2.3. National Highways published 'The Road to Good Design' in January 2018, which sets out ten design principles for delivering projects with the aspiration to *'deliver safer, better, beautiful roads which connect people and connect our country'*. The Scheme design is underpinned by these ten principles so that it connects people, places and processes to achieve better outcomes.

- Connecting People – Good road design
    1. makes roads safe and useful
    2. is inclusive
    3. makes roads understandable
- Connecting places – Good road design
    4. fits in context
    5. is restrained
    6. is environmentally sustainable
- Connecting processes – Good road design
    7. is thorough
    8. is innovative
    9. is collaborative
    10. is long-lasting

2.2.4. Appendix A of this document explains how the design of the Scheme has been developed to respond to these overarching principles.

High Peak Design Guide SPD (adopted 2018)

2.2.5. Whilst the guide is not aimed at road infrastructure development, there are relevant inclusions relating to materials and landscape (hard landscaping guidance has not been included here as it is specific to buildings and their curtilages). The following have contributed to the Scheme design:

Landscape and Settlement

- 2.2 - new development should be designed to complement the area
- 2.3 - The Council supports the use of sustainable design and construction methods
- 2.4 - development should assimilate itself into the landscape and avoid adverse impact on landscape quality
- 2.5 - maintain distinctions between the types of landscape character as described and identified in the Landscape Character SPD (adopted 2006)

Soft Landscaping and Wildlife

- 4.21 - retention of existing trees and hedgerows
- 4.22 - new tree and shrub planting should, wherever possible, use locally indigenous species and varieties of plants
- 4.23 - all development is expected to conserve existing wildlife as far as possible and consideration given to enhancing/creating new opportunities for wildlife
- 4.25 - wherever possible provision of roosting for bats/birds, use of sustainable urban drainage systems to create new habitats should be considered

High Peak Landscape Character SPD (adopted 2006)

2.2.6. Whilst the document is not aimed at road infrastructure development, the four steps outlined below have been followed:

1. Identify the Landscape Character Type within which the development sits.
2. Consider how the development relates to existing landscape features; the height, width, depth of the proposal; the colour and textures of materials; appropriate tree planting and habitat creation to achieve best landscape fit.
3. Select relevant aspects of the SPD to help in the design.
4. Demonstrate how the above issues have been considered.

The Landscape Character of Derbyshire (2013)

2.2.7. The assessment is intended to guide and promote a number of key planning aims. Those that are most relevant, and which have been considered in the design of the Scheme are:

1. Landscape Character and Diversity – to maintain and enhance the overall quality and diversity of landscape character across the county, the distinctive sense of place and individual identity of each particular area.
2. Managing Change – to support and compliment planning policies by helping to ensure that new development respects and, where practicable, contributes towards enhancing the local character and sense of place of the landscape.
3. Biological Diversity – to support and complement the aims of the Biodiversity Action Plans for Derbyshire, enriching biological diversity through the wider countryside and encouraging the sustainable management of Derbyshire's landscapes.

3. Design vision and principles for the Scheme

3.1. Design standards, guidance and good practice

3.1.1. The design has been developed to comply with current standards and with reference to relevant guidance and good practice. DMRB standards are applied regard to cover the engineering elements of the Scheme, including, but not limited to: structures; infrastructure for walkers, cyclists and horse riders (WCH); highways lighting; and, highways drainage.

3.1.2. With regard to the environmental elements of the Scheme, including planting and biodiversity measures, the following DMRB standards have been applied, but are not limited to:

- GG 103 Introduction and general requirements for sustainable development and design.
- LD 117 Landscape design.
- LD 118 Biodiversity design.
- LD 119 Roadside environmental mitigation and enhancement.
- LA 113 Road drainage and the water environment.

3.2. Scheme design

Design narrative

3.2.1. Throughout the design process, focus has been given to the interplay between the design and the neighbouring environment, this has been achieved through on-going close collaboration between the project design team and the environmental technical experts. As a result, the Scheme design has been an iterative process that has considered environmental mitigation measures and buildability along with the National Highways licence requirements to develop an economic solution and a good road design that is sensitive to the context of its surroundings and the communities that surround it.

3.2.2. A key approach to realising this has been through the development of a scheme-specific landscape strategy, which has been designed to integrate the Scheme into the surrounding landscape, mitigate the loss of existing vegetation, and reduce the visual impacts through screening views of the Scheme. The strategy has also been developed to enhance biodiversity and habitat where possible and to help maintain local vegetation patterns and create sympathetic landform.

3.2.3. Figure 2.4 Environmental Masterplan of the ES (APP-074) shows the landscape design strategy, which is integral to the Scheme design. The landscape proposals are designed to integrate the Scheme into the surrounding landscape, mitigate the loss of existing vegetation, and reduce the visual impacts through screening views of the Scheme. The strategy has also been developed to enhance biodiversity and habitat where possible and to help maintain local vegetation patterns and create sympathetic landform. This design will adhere to DMRB LD 117 Landscape design and the Specification for Highways Works set

out in Series 3000 (Landscape and Ecology) of the Manual of Contract Documents for Highway Works[1].

3.2.4. The Environmental Masterplan also shows mitigation measures, such as new landscape planting, watercourse enhancements, noise barriers and ecological habitats that have been created or restored. These mitigation measures have been developed through an iterative design process with a multidisciplinary team responding to a complex range of environmental and engineering constraints found within and adjacent to the Scheme and following feedback through consultation. The key environmental mitigation measures included within the Environmental Masterplan will:

- Assist with integrating the Scheme into the surrounding landscape, creating a sympathetic planting strategy
- Reduce visual impact by screening and filtering views of the Scheme
- Reduce noise impacts associated with the Scheme (e.g. noise barriers)
- Mitigate for the loss of existing vegetation
- Create new areas of ecological habitat and maximise opportunities to improve biodiversity within the permanent land take as part of the Highways England policy objective of achieving no net loss and to progress towards the target of delivering a net gain in biodiversity by 2040
- Ensure the connectivity of PRoW and other routes used by pedestrians and cyclists are maintained
- Provide for the storage, treatment and discharge of road runoff, and provide features for the mitigation of flooding risks.

Design vision

3.2.5. The design vision aims to:

- Integrate the Scheme into the surrounding environment whilst enhancing the landscape where pedestrian and cyclist facilities are being improved.
- Understand the components and characteristics that make up the landscape and incorporate into the design in terms of materiality, layout and maintenance.
- Respect and protect environmentally designated areas and ensure that they are protected and/or enhanced by the Scheme.
- Ensure that provision for pedestrians and cyclists (including mobility impaired) is maintained or further improved, with any potential conflicts identified, and considered during the detail design process.

3.2.6. The Scheme design has been an iterative process that has considered environmental mitigation measures and buildability along with the Highways England licence requirements to develop an economic solution and a good road design that is restrained and sensitive to the context of its surroundings and the

[1] Manual of Contract Documents for Highway Works (MCHW), 2019, www.standardsforhighways.co.uk/ha/standards/mchw/index.htm

communities that surround it. This has resulted in a design which meets the Scheme objectives that can be achieved within the existing constraints and limitations of the site and surrounding and without having a detrimental effect on the environment.

3.2.7. As part of the Preliminary Design stage, the design has been refined and changed in response to the following:

- On-going assessment and consultation with the public and stakeholders
- Ongoing environmental assessment by environmental specialists working in close iterative collaboration with the engineers responsible for the design of the Scheme
- Continual assessment of the evolving Scheme against the good design principles as outlined in 'The Road to Good Design'.

3.2.8. Refer to Appendix A for further details.

3.3. Overarching Scheme design principles

3.3.1. The various elements of the Scheme have not been developed in isolation, they have taken in the much wider design principles as set out in section 2 embracing key issues such as landscape, sustainability, buildability and inclusivity. The following design principles cover the designs general approach for each of the main components of the Scheme.

3.3.2. The engineering solutions / details / materials for each of the bridges and structures remain in development and are not currently available but they will take these principles into consideration. They will seek to deliver sustainable, low carbon infrastructure elements, which are attractive easy to build and maintain and appear as a family of structures.

3.3.3. The design principles for these bridges and structures will consider simplicity and elegance to be visually appealing within the landscape with sensitive ground modelling and planting around them to soften impacts and to help integrate them into their wider setting. The desire is to achieve restrained engineering solutions that are also sustainable and easy to build in order to reduce impacts and the amount of time and disruption on site for the local community.

M67 Junction 4

3.3.4. This largely comprises of modifications to an existing large junction where the design principles will be to focus on minimal loss of existing mature vegetation and to provide a legible and safe functioning interchange which is well lit and signed. Junction design principles will ensure that new road spur connections meet the existing road grades within engineered geometry that accounts for safe visibility and legibility, regarding radius and approaches for all vehicles and pedestrians. All street furniture, lighting, signage and traffic signal installations will be sited and selected to meet the appropriate standards and to ensure safe, visible wayfinding. Lighting will use attractive and sustainable light fittings, using downlighters and appropriate spacing and height of columns to reduce glare and potential adverse impacts on wildlife.

3.3.5. The landscape design will seek to integrate the junction to achieve a balance between road and pedestrian safety, visual screening and integration of the junction into the landscape, through sympathetic landform and planting, to help reduce its visual prominence.

Old Mill Farm underpass

3.3.6. The Old Mill Farm underpass wing walls and structural design principles will seek to create simple, legible and welcoming access, blended into the landform and surrounding approach paths. This underpass lies beneath a dualled section of carriageway, under 4 lanes and a wide central reserve. The underpass will be designed to minimise impacts and intrusion into the wider landscape setting through careful elevational profiling to reduce the amount of visible wall in the landscape. Ground modelling and planting around the walls will also aid integration.

3.3.7. Final choice of materials is to be determined but the general approach will be to soften the visual impact of any wingwalls within the landscape. Artificial lighting will be designed to provide safe, welcoming and attractive access to encourage repeated use.

Roe Cross Road overbridge

3.3.8. The principles are to create an overbridge which is sympathetic to its surroundings with simple, elegant and restrained forms to help minimise the impacts and intrusion into the wider landscape setting in order to create a positive feature in the local environment. Wingwalls will be designed to reduce the amount of visible wall with sympathetic ground modelling and planting around the walls to aid integration. Parapets will be selected to appear lightweight wherever possible.

Mottram Underpass

3.3.9. The design principles for Mottram Underpass are similar to Roe Cross Road Overbridge in that they are to create an underpass which is sympathetic to its surroundings with simple, elegant and restrained forms, as well as being for use by local footpath users and farm access.

3.3.10. The roof of the underpass will also deliver a new green space for the local community and the design principles here will be to ensure it is attractive, useful and safe, providing new links for walking and cycling with appropriately detailed soft landscape design, which will reflect its suburban surroundings. In this way it can be a newly integrated place for people within Mottram.

Mottram Moor junction

3.3.11. The design principles for Mottram Moor junction are to provide a legible and safe functioning interchange which is well lit and signed and has its own identity as a new gateway. Junction design principles will ensure that all new connections meet the existing road grades within engineered geometry that accounts for safe visibility and legibility, regarding radius and approaches for all vehicles and pedestrians.

3.3.12. The landscape / public realm, street furniture, lighting, signage and traffic signal design principles will be similar to M67 Junction 4. However, the planting is likely to contain more mature stock sizes and formal lines to reflect the more urbanised nature of this junction.

The Carrhouse Farm underpass

3.3.13. The Carrhouse Farm underpass design principles will be to create a simple, legible and welcoming access for local footpath users, blended into the landform and surrounding approach paths. This underpass will be shorter than the Old Mill Farm one as it lies beneath a single carriageway section of the route. The underpass will be designed to minimise impacts and intrusion into the wider landscape setting through careful elevational profiling to reduce the amount of visible wall in the landscape. Ground modelling and planting around the walls will also aid integration. Final choice of materials is to be determined but the general approach will be to soften the visual impact of any wingwalls within the landscape. Artificial lighting will be designed to provide safe, welcoming and attractive access to encourage repeated use.

River Etherow Bridge

3.3.14. The River Etherow Bridge design principles will take into account its impact on the river and its wider setting. The principles will consider simplicity and elegance to be visually appealing within the landscape with sensitive ground modelling and planting to soften impacts and to help integrate the structure into the wider setting. The current design has considered the structural span to avoid impacting directly on the water course improving on a previous iteration.

Woolley Bridge junction

3.3.15. The design principles for Woolley Bridge junction will be similar to Mottram Moor junction. The landscape / public realm, street furniture, lighting, signage and traffic signal design principles will also be similar to Mottram Moor junction and M67 Junction 4. However, also like the Mottram Moor junction the planting is likely to contain more mature stock sizes and formal lines to reflect the more urbanised nature of this junction.

3.4. Engineering design principles

Earthworks and drainage

3.4.1. To achieve the required profile, there are various locations where the route goes into cutting or is on embankment. The earthworks will be designed to deliver a cut/fill balance on the Scheme. Any material which is deemed to be unsuitable for use in structural fill would be treated on site and used in the landscape false cuttings, as shown on Figure 2.4 Environmental Masterplan of the ES (APP-074).

3.4.2. The preliminary drainage design has been developed in accordance with the CG 501 Design of Highway Drainage Systems standard[2]. The requirements of the NPSNN and the NPPF have also been considered in the design process,

[2] https://www.standardsforhighways.co.uk/dmrb/search/ada3a978-b687-4115-9fcf-3648623aaff2

alongside advice from the technical specialists. This includes the use of Sustainable Drainage Systems (SuDS) measures throughout the design along with natural storage and treatment prior to outfall.

3.4.3. The drainage works supporting the new highway proposals involves the creation of three new attenuation ponds which will be designed as retention ponds containing aquatic planting and associated drainage facilities. The ponds will be accessed for any maintenance activities from specific access tracks included in the Scheme proposals. The locations of the three attenuation ponds are also illustrated on the Figure 2.4 Environmental Masterplan of the ES (APP-074) and Work Plans (REP5-002).

3.4.4. As well as the attenuation and water treatment provided by these ponds, the highway drainage design also includes the following provisions, which are detailed further in the Drainage Design Strategy Report (APP-188):

- Attenuation using oversized pipes
- Treatment via grassed swales
- Narrow filter drains
- Trapped gully pots
- Surface water channels
- Combined kerb drainage units
- Catchpits
- Flow control units prior to outfall.

3.4.5. The preliminary design includes fourteen culverts and pipes carrying watercourses and ditches under proposed highways, access tracks and other features.

Structures

3.4.6. Piling associated with the new proposed structures will be required. Such techniques can introduce pathways for contaminants in pore water to migrate into underlying groundwater. Appropriate techniques will be reviewed, and appropriate design will be included to safeguard the underlying groundwater regime to ensure that groundwater quality is not compromised. Deep foundations extending beneath the groundwater table would be designed in accordance with industry standards. A piling risk assessment will ensure the selected piling method does not introduce contamination pathways into the aquifer and to ensure groundwater flood risk upgradient is not increased.

3.4.7. Mitigation principles to managing this risk during both construction and operation has included designing the Drainage Design Strategy Report (APP-188) to allow for management of groundwater contributions to surface water flow and design of longitudinal piling taking into account local groundwater conditions. A Hydrogeological risk assessment (REP3-025) has been undertaken to inform the Detailed Design stage for works associated with Mottram Underpass.

3.4.8. The footprint of structures and junctions have been designed to be as compact as practicable, ensuring minimal land use change and materials use. For example:

- Mottram Underpass has been moved to the east retaining Old Hall Lane on its current alignment and therefore reducing severance on the residential properties along Old Hall Lane. Roe Cross Road will now run over the western end of the underpass on a bridge.
- The alignment of Mottram Moor Junction repositions the existing A57 Mottram Moor further away from noise sensitive receptors located within a Noise Important Area. The change in horizontal alignment of the existing A57 Mottram Moor in addition to the bypassing of Mottram-in-Longdendale reduces road traffic noise contributions from this road within the Noise Important Area.

3.4.9. A clear-span design would be utilised as part of the River Etherow Bridge, to avoid impacts to the banks and retain aquatic connectivity within this area. The single span structure will be designed in such a way as to minimise (as far as reasonably practicable) disruption to the river and riparian zone, as detailed in DMRB CD 356: Design of Highways Structures for Hydraulic Action[3]. This includes setting abutments well back from the bank edge to allow the river to function naturally and to maintain a wildlife corridor along the banks and designing the bridge deck to lie perpendicular to the watercourse (where practicable) to reduce shading.

3.4.10. Culverts will be designed so as to maximise the longitudinal connectivity with the open watercourse, following best practice guidance.

Lighting

3.4.11. The requirement for lighting on the Scheme has been developed following the TD 501 Road Lighting Design standard[4], in consultation with the relevant local authorities. The lighting design would seek to minimise intrusive light pollution which can lead to sky glow, glare to road users, local residents and other observers as well as light trespass. The design of the lighting will also consider potential landscape and ecological effects. The recommendations from the Bat Conservation Trust and the Institution of Lighting Professionals, titled ‘Guidance Note 8 Bats and Artificial Lighting’[5] have been followed when designing the lighting proposals. The strategy also promotes the National Highways Sustainable Development Plan[6] by reducing carbon emissions by using more energy efficient lighting, in the form of Light Emitting Diodes (LED).

Low-carbon and carbon reduction design

3.4.12. The Scheme will be planned around low-carbon construction principles and targets. Low-carbon target setting is embedded into the whole lifecycle of the

[3] [redacted]
[4] [redacted]
[5] [redacted]
[6] https://www.gov.uk/government/publications/highways-england-environment-strategy

project. The appointed Principal Designer and Contractor have set the following Scheme specific target:

- Support reductions in carbon emission by adhering to the principles of the PAS 2080:2016 – Carbon Management in Infrastructure Verification certification. This will help the Scheme reduce its carbon emissions across the whole value chain through effective and innovative design, construction and use. It would also ensure that carbon is consistently and transparently quantified at the key stages of the design process.

3.4.13. The PAS 2080 process will be used to identify opportunities for carbon savings at Detailed Design stage, and it is the intent that the lowest carbon solution will be progressed as the preferred choice for detailed design.

3.4.14. An Outline Carbon Management Plan (CMP) (REP5-023) has been prepared for the Scheme to set out how whole life carbon emissions will be managed and reduced during the Detailed Design stage, to ensure that the objectives are met or exceeded. The Scheme's carbon management approach is aligned with PAS 2080: 2016[7] – Carbon Management in Infrastructure technical standard which ensures that carbon reduction is fully integrated into the project team's culture.

3.4.15. A Detailed CMP will be produced at the Detailed Design stage to assess carbon use for the whole lifecycle of the project, to promote embodied carbon management and to report on the carbon reductions achieved.

3.4.16. The CMP demonstrates how the Scheme will implement the carbon reduction hierarchy, as set out in PAS 2080, which specifies:

- **Build nothing**: evaluate the basic need for an asset and/or programme of works and explore alternative approaches to achieve outcomes set by the asset owner/manager
- **Build less**: evaluate the potential for re-using and/or refurbishing existing assets to reduce the extent of new construction required
- **Build clever**: consider the use of low carbon solutions (including technologies materials and products) to minimise resource consumption during the construction, operation and user's use stages of the asset or programme of work
- **Build efficiently**: use techniques (e.g. construction, operational) that reduce resource consumption during the construction and operation phases of an asset or programme of work 'Build nothing' and 'build less' are the two primary carbon reduction mechanisms.

3.4.17. The carbon reduction hierarchy specifies 'build nothing' and 'build less' as the two primary carbon reduction mechanisms. For example, the removal of Cricket Ground Roundabout and Roe Cross Road junction, as well as the conversion of Mottram Moor junction from a roundabout, has resulted in a reduced need for materials associated with such junctions. The design modifications during the Preliminary Design stage have resulted in reduced number of compound areas and less land uptake.

[7] [redacted]

3.4.18. Value engineering at the Preliminary Design stage was therefore applied to the baseline scenario as options were explored to build minimum (the 'build less' principle) rather than use of low-cost materials (the 'build clever' principle). The 'build clever' and 'build efficiently' principles will be fully integrated into the design with the implementation of the Detailed CMP.

3.5. Environmental design principles

3.5.1. The Environmental Masterplan includes new landscape design where land is required permanently to build and operate the Scheme. The temporary land taken for construction purposes would be reinstated and restored to its original condition.

3.5.2. The Scheme will provide specific mitigation as follows:

- A dedicated ecological mitigation structure for bats to mitigate for the potential loss of common pipistrelle roosts. The structure will be located in the Showground area, nearby to suitable habitat.
- Bat hop-overs will be created at strategic locations along the Scheme, which would consist of tall vegetation planted on either side of a road. The aim is to guide bats across roads at a safe height above traffic.
- Two artificial badger setts to compensate for the disturbance to and permanent loss of badger setts. Both setts will be planted with a meadow mix and scrub to provide suitable habitat and cover for badgers.
- Barn owl 'fly-overs' and taller screen planting would be created at strategic locations around the Scheme.
- New habitat creation, including 6.5 ha of mixed deciduous largely native woodland planting, adapted to a wide range of climatic conditions, to mitigate for the loss of broadleaved woodland and provide a significant increase in deciduous woodland cover.
- Mammal passes will be installed along the road network to increase the permeability of the Scheme for badgers and other mammals (brown hare and hedgehogs) and reduce the barrier effect. The entrances would be 'softened' through the use of appropriate planting to encourage badgers and other mammals to use these crossing points.
- The design has ensured that opportunities to improve biodiversity have been maximised within the permanent land-take within the DCO boundary. Off-site enhancement opportunities will also be explored during the detailed design.
- Approximately 3.3km of hedgerow habitat will be lost due to the Scheme. However, to help maximise biodiversity across the Scheme, approximately 6km of new hedgerow habitat will be provided, which is a gain of approx. 2.7km. New hedgerow planting would be species-rich, comprising a range of native species (including hawthorn, blackthorn, holly, and dog rose) of local provenance adapted to a wide range of climatic conditions, maximising their resilience. Hedgerows would be largely linked to provide a network of habitats to aid connectivity for species such as bats and birds.

- One new flood compensation area, located in close proximity to River Etherow Bridge to provide flood storage and mitigate the increase in flooding caused by works being undertaken in the flood zone. This will also create wet grassland habitat integrated with the riverine habitat.
- Design of the Scheme to minimise road traffic noise level, including alignment of Mottram Moor junction and arrangement of cuttings and embankments for the Mottram Moor Link Road and A57 Link Road
- Low noise road surfacing on the A57 Link Road and Mottram Moor Link Road (except bridges)
- Permanent environmental noise barriers located at the eastern and western portals of the Mottram Underpass, Mottram Moor junction, and along the A57 Link Road in proximity to Carrhouse Lane and Tara Brook Farm.

4. Engagement on design matters

4.1. Project team engagement

4.1.1. Regular calls at the Preliminary Design stage, which included the design, construction, and environmental disciplines, have been held. These have led to a more thorough understanding of the environmental and engineering constraints across the team, and identified opportunities to challenge design options, leading to a better considered design. The discipline leads attended weekly online design meetings where design developments were communicated to the team and discussions around constraints and opportunities could be held. This allowed the team to draw on experienced team members, whilst contributing to driving efficiencies and ensuring the Good Design Principles are embedded into the decision-making process.

4.1.2. A highly experienced design team, with experience from other relevant and comparable schemes, has been involved from the start of the design process. An Environmental Lead has coordinated a multidisciplined team of specialists and design champions across all the key disciplines, so that the design has not been driven by the highway design but responds to various important driving influences including landscape design, drainage design, ecology, sustainability and heritage. These disciplines have been in close and regular contact to develop the proposals to date. The appointed Principal Contractor has also been a key part of the project team during the Preliminary Design stage, which is not normal for a major infrastructure project such as this. This has brought additional benefits, such as ensuring buildability and deliverability issues have been considered at an early design stage. This approach will reflect the multifarious aspects of this complex environment to deliver a robust thoughtful and multi-faceted design response.

4.2. Stakeholder engagement

4.2.1. As part of the consultation process the Applicant has discussed the Scheme with multiple stakeholder groups to ensure the design provides as much benefit as possible. A significant amount of consultation has been undertaken over the years, either as part of the wider TPU package or for the present A57 Link Roads Scheme, which has been key to its development from the outset. This included a wide range of media and communication methods to ensure it reached as many organisations, groups and individuals as possible including Local Authorities, Councils, and Non-Motorised User groups as well as local residents. For the Statutory Consultation (05 November –17 December 2020) a Stakeholder mapping workshop was held identifying different groups and ensured there was a way of reaching everybody. These consultations have helped to shape the proposals. This will continue as close collaboration is ongoing with external parties, in the Detailed Design and construction phases, working closely with Tameside Metropolitan Borough Council (MBC), High Peak Borough Council and Derbyshire County Council, for example, to agree Scheme proposals on the single carriageway section and junctions, and also with Transport for Greater Manchester in terms of the new junction design.

4.3. Design Council review

4.3.1. This Scheme was presented to the Design Council for review at an appropriate stage of the Preliminary Design (July 2020), before the Scheme was put to public consultation later in 2020. The presentation was led by a Chartered Landscape Architect, familiar and experienced with road infrastructure projects, with a focus on the project team's understanding of place, people and context and how the Scheme sought to reflect this in the emerging design. The Scheme was selected by the Design Panel for review so they could advise on guidance and standards which would aid the wider role of embedding best practice across the design. As part of the feedback received The Design Council stated that "*The analysis and appreciation of landscape character along the road corridor was impressive and detailed*".

5. Development of the detailed design

5.1. Detailed Design framework

5.1.1. Method-led construction is a framework developed by the Principal Designer and Contractor which is being used on the Scheme to align method and design to ensure the optimal solution is developed and delivered on the project. By using method-led construction to structure the project in pre-construction, the project team can ensure ideas for innovation are considered as early as possible during the asset's lifecycle during solutions development. This will be driven by low-carbon and carbon reduction considerations. It also provides a platform to ensure constraints and constructability are considered in suitable detail before designs are finalised and construction begins.

5.1.2. The design will be developed in the same way it has originated, through continual cross discipline dialogue with a focus on place making and people. This will ensure that the ensuing details will recognise the multifarious contributors and factors that will help to deliver a successful design outcome. The design will be driven by a desire to create a corridor which is respectful of its landscape setting, the rich ecology and heritage of the area and the functional needs of drainage, sight lines, access, buildability and all sustainability criteria. Key planting and landform proposals will be developed and detailed to reflect the locale and great attention will be paid to the final slope profiles and gradients as well as the planting mixes, which will reflect local successful species and take account of future pressures that climate change and resilience will bring. These will also be developed to consider our partners and stakeholders views.

5.2. Engagement with local authorities and local highway authorities

5.2.1. Please refer to section 1.2 of this document, which explains the commitments for engaging with relevant authorities and how these will be secured for the Detailed Design stage.

5.2.2. The proposed finishes and street furniture will be agreed with the local authorities Tameside MBC, High Peak Borough Council and Derbyshire County Councils through the approval process required by Article 12 of the dDCO (REP6-002) which will cover the Scheme details.

5.2.3. A significant amount of consultation with the local authorities has already been undertaken to inform and update on design progress. These links are well established and will be maintained throughout the consent process to ensure agreement and approvals are gained.

5.2.4. The design for the area above Mottram Underpass and the detrunking plans for the existing A57 trunk road have yet to be finalised. Discussions are currently underway to agree the detail with Tameside MBC.

Appendices

Appendix A. Scheme response to the Road to Good Design principles

A.1 Application of Design Principles

A.1.1 The iterative design process has responded to a range of environmental and engineering constraints. The following table provides examples of where the multi-disciplinary design team have worked together to develop the proposed design, both in response to context and through the design principles embedded within the proposals.

Road to Good Design principles	How the Scheme has considered and applied the design principles
Good road design makes roads safe and useful	**Overall** • Scheme Safety objective focused on all user groups and forms a key part of the design. It aims at improvement vs current performance for road users and reduces risk to as low as its reasonably practicable (ALARP) for road workers. • A Walking, Cycling and Horse-riding Assessment Report (WCHAR) was undertaken to inform the design. • Prohibition of Non-Motorised Users (NMUs) from the Dual Carriageway and Local Safety Improvements around existing junctions (Gun Inn). • Deer fencing strategy considered. • Overall number of accidents and casualties within the modelled network will be reduced (COBALT). • As part of the Statutory Consultation, discussions were held with multiple stakeholders to ensure the design is 'useful' for all. • Traffic flows on the existing congested A57 will be reduced by up to 75% in the design, significantly improving journey times through Mottram.

Road to Good Design principles	How the Scheme has considered and applied the design principles
	Structures • Within the Structures Options Reports, Health and Safety has been considered (part of the scoring matrix) for the construction and future maintenance of the structures and the impact on the network and road users. • Suicide prevention measures have been considered for the Roe Cross Road Overbridge and Mottram Underpass and will be further reviewed at detailed design stage. • The two underpasses will be lit to improve safety for users. **Junctions** • Pedestrian provision will be enhanced at the existing junctions at M67 Junction 4, Mottram Village crossroads and the Gun Inn Junction as well as the new junctions at Mottram Moor and Wooley Bridge. • Three signalised junctions will be created throughout the scheme including a new horse crossing and new bridleway. This provides improved access for NMUs and makes the junctions safer for users, as well as ensuring the Scheme is inclusive and safe access for all users has been considered. • Safe controlled crossings will be provided as an integral part of the overall junction design. **Crossings** • Crossing will be improved and upgraded in several locations as well as tightening junction geometry at Tavern Road T-junction with A57 Woolley Lane. • Freestanding pedestrian crossings will be provided in the local network particularly where traffic calming will be added as part of the scheme. **Footways, cycleways and bridleways** • A combined footway and cycleway will be installed on the proposed new link road between Mottram Moor and Woolley Bridge, creating a connection route with the existing Sustrans National Route 62 and Trans Pennine Trail and a tie-in with the Hyde to Hollingworth cycle route scheme. This will increase the usefulness of the walking and cycling routes while making them safer. • New bridleway connection will be introduced from Old Hall Lane to Mottram Moor.

Road to Good Design principles	How the Scheme has considered and applied the design principles
Good road design is inclusive	**Consultation** • Consultation process and stakeholder engagement ensures design reflects all users and the community. • Consultation designed to reach all corners of the community despite Covid 19 with mix of activities including: brochure distributed to over 20,000 homes; interactive webinars; Q&A sessions; telephone Tuesdays followed up on Thursdays; animated flythrough with voice over, everyone was able to email and write in; stakeholder meetings; local press, social media coverage etc; Over 1500 responses to the consultation forms. • All material for consultations was done with people with disabilities in mind to make it as user friendly as possible. All material was available in 8 different languages. • Working with Local Authorities, NMU groups, local cycling groups, and the British Horse society. **Active travel** • In line with the WCHAR new footways, cycleways and bridleways will be added alongside sections of the route to encourage people to walk and cycle. The design is aiming to increase the attractiveness of the routes as well as making the routes safer. • The WCHAR also assessed the existing rights of ways and how they can be improved for the design. The proposals were presented to NMU groups and comments were taken and addressed within the Scheme design. • Separate Pegasus crossing added to Mottram Moor Junction to allow safe crossing facilities for walking, cycling and horse-riding. Improved access for non-road users, makes the junction safer for users. Changes made in response to better understanding of local needs through consultation, ensures the Scheme is inclusive and access for all users has been considered.
Good road design makes roads understandable	**Road layout** • The scheme is legible, intuitive and understandable in terms of urban design from road user and NMU perspectives. • The road design has also incorporated the DMRB standards thus providing good road user experience. **Junctions** • The simplification of Mottram Moor junction from a roundabout to a signalised junction will support ease of understanding and driving experience for road users.

Road to Good Design principles	How the Scheme has considered and applied the design principles
	Signage • A clear and straightforward layout and signing strategy has been developed which aligns to the existing signing within the Trunk Road and Local Authority network signing. • Changes such as the through-about at Hattersley Junction (M67 J4) will be mitigated through signage, with the rationale for the through-about being to improve traffic flow, and so driving experience is ultimately smoother.
Good road design fits in context	**Road alignment** • The team has ensured the design integration of the road corridors into the local environment. • Mottram underpass layout allows Old Hall Lane, Old Road and Roe Cross to remain in their current alignment. • The Scheme has been designed to be sensitive to landscape, heritage, biodiversity and the community. **Landscape and ecology** • In line with DMRB LA 107 Landscape and visual effects, the Statutory Consultation included an exercise to identify what the public perceive to be valuable in relation to the landscape. The design of the Scheme has been developed to account for these elements which consultees considered valuable in the local area. • The team has ensured the landscape design, including landform and planting, fits as naturally as possible in the existing design context and aims to reduce visual impacts. • The Scheme wherever possible has aimed to reduce impacts on existing vegetation, including habitat creation for curlews, which was helped by design iteration changes to Mottram underpass. • The overall footprint of all structures and their locations have been reviewed to reduce the impacts on the surrounding landscape and changes made such as reducing the overall length of River Etherow bridge and Carrhouse Lane underpass. • The Mottram underpass location has changed through design review, which has significantly reduced the length/size of the approach walls to the eastern portal. Mottram cutting includes proposals for heather and scree on slopes of underpass. • Bat structure proposals have been designed to match existing features, such as stone access structures. • Long range views are included in the design to improve the driver experience.

Road to Good Design principles	How the Scheme has considered and applied the design principles
	• Impacts to rivers will be minimised by making watercourse crossings as short as possible. Proposals include reinstatement of the habitats and improving it where possible through biodiversity net gain.
Good road design is restrained	**Lighting** • The lighting design has considered the potential landscape and ecological effects as informed by a high-level assessment of the changes to the landscape and visual receptors resulting from the introduction of the Scheme lighting. • The lighting design aims to minimise light pollution which can result in sky glow, glare and light trespass by using LED luminaires as they have a much tighter beam control of lighting against traditional lamps, so lighting spillage outside the highway boundary is less likely, as well as reducing energy use. The designed lighting will also have no upward light. • The amount of light on the verges has been limited, which will help reduce bat disturbance. • Design assessment has resulted in the removal of lighting from the Dual Carriageway link between junctions. • In locations where wildlife could be affected by the introduction of lighting, colour temperatures selected for luminaires will be sympathetic to wildlife by limiting the blue component of emitted light, as well as using restricted column heights. • Lighting design has been amended to the carriageway crossing point of the River Etherow as studies have shown optimum mounting heights and luminaires to minimise impact of lighting on the river below. **Landscape bunds** • Minimising impact on existing vegetation and landowners by reducing the extent of the landscape bunds on the single carriageway section. **Construction** • Minimising demolition requirements for Mottram underpass for sensitive receptors and the elimination of Mottram underpass diaphragm walls will reduce extent of works and working space required. • Reduction in the in the infrastructure required for the UU aqueduct crossing.
Good road design is environmentally sustainable	**Sustainability**

Road to Good Design principles	How the Scheme has considered and applied the design principles
	• Taken an integrated team approach to setting sustainability targets using a Project Sustainability Framework Tool (SFT). • The SFT was developed to align with National Highway's sustainability requirements as detailed in: Design Manual for Roads and Bridges (DMRB) GG103 Introduction and general requirements for sustainable development and design; Sustainable Development Strategy (SDS); and The Road to Good Design. • In addition, the sustainability priorities of Tameside MBC, Derbyshire County Council, High Peak Borough Council and Elmbridge Borough Council have also been considered in the SFT. • A sustainable development workshop was conducted including all the key design and environmental discipline leads as well as environment and sustainability leads from the appointed Principal Designer and Contractor, and representatives from National Highways. **Low carbon design** • Carbon Management Plan implemented, committing the Scheme to the PAS 2080 process to identify opportunities for carbon saving. • Lowest carbon solutions will be progressed as the preferred choice for detailed design. **Maximising biodiversity** • Opportunities to improve biodiversity have been maximised within the permanent land-take within the DCO boundary. Off-site enhancement opportunities will also be explored during the detailed design. **Environmental mitigation** • Design is sensitive to landscape, heritage, biodiversity and the community, following early involvement of landscape, ecology and heritage survey teams to inform the design as well as comprehensive stakeholder engagement. **Sustainable Drainage (SuDS)** • Three attenuation ponds will be included in the Scheme and these have provided opportunities to introduce aquatic habitat, to serve as wetlands, and help attract aquatic associated fauna such as willow tits, curlews and otters. **Cut and fill** • Modification of slope angles within Mottram cutting to achieve cut/fill balance.

Road to Good Design principles	How the Scheme has considered and applied the design principles
	Lighting • Lighting installations will incorporate variable dimming technology, which will enable maintaining agents to adopt the implementation of variable lighting levels to suit the traffic flows encountered. This will result in a reduced running cost with the consequent reduction in greenhouse gas emissions and enable the lighting to meet the ongoing requirements should traffic flows increase/decrease. • Luminaires will be manufactured in the UK helping to reduce emissions through transport emissions of final product. • All existing luminaires will be disposed of according to the WEEE (Waste Electrical and Electronic Equipment) directive and proposed luminaires will be WEEE compliant. • Proposed column materials can be recycled and where existing cable will be removed, the copper can be recycled. • Design proposes LED luminaires that require very little maintenance to be used (typically an electrical test done every 6 years). By lowering maintenance requirements, there is an indirect social benefit to road users as they are less affected by maintenance traffic management.
Good road design is thorough	**Specialist driven design** • All disciplines working together to meet required standards and guidelines. • Landscape and ecology design is integrated and iterative. • The project team has had an overall intent to reduce the footprint of the Scheme to reduce the impact on stakeholders, landowners and residents. • All design leads attended a Sustainable Development Workshop, which ensured that the design of all elements of the road environment were considered together and integrated into a responsive design. • The approach of embedding sustainability in the Scheme design has fostered consideration of Scheme performance regarding a thorough design as a formal objective. This ensured a robust design process, creating a continual cycle of improvement for optimal results. **Consultation** • Audit trail of assumptions, decisions, and stakeholder engagement.

Road to Good Design principles	How the Scheme has considered and applied the design principles
	• Feedback from the stakeholder engagement was recorded and carefully considered as part of the Scheme's development. This helped inform the overall design to ensure connectivity is improved and reduced the impact on the village itself. • Consultation with cycling, horse riding, walking and Local Authorities have led to improvements of pedestrian and cyclist facilities around junctions and the introduction of the new bridleway connecting Mottram Moor junction to Old Hall Lane and the tie-in with Tameside's Hyde to Hollingworth cycle route. **Design iterations** • Several design iterations were produced to ensure the design meets the required standards and guidelines as well as consideration of the stakeholder engagement feedback. • A design decisions log has been maintained, allowing for design decisions to be recorded and understood by future project teams, ensuring that the design taken forward to the next stage is carried out in a consistent way. • Design elements have been progressed to a greater level of detail than normally expected at stage 3 to minimise risk of change including Mottram Underpass, Junction layouts. • Old Mill Farm underpass and Carrhouse Lane underpass have been developed to maintain farm access and provide a safe route for walkers, cyclists and horse riders. • The arrangement of the M67 Junction 4 roundabout was changed to a 'through-about', to enhance the performance and to improve traffic flows. • Following the Design Panel Review and landowner consultation at Carrhouse Lane, options will be considered at a later design stage to minimise the impact on this property by providing an alternative farm access.
Good road design is innovative	**Consultation** • Remote consultation using alternative methods to engage with stakeholders and the community as a result of Covid. **Design iterations during the Preliminary Design stage** • Mottram Underpass was originally a tunnel, and Roe Cross link road, junction and Cricket Ground roundabout removed from the Scheme, without compromising the improvements to traffic levels. This was changed to an underpass to blend in better with the landscape; be cheaper, quicker and easier to construct, a decrease in maintenance commitments, reduce the carbon footprint and reduce disruption to the local community.

Road to Good Design principles	How the Scheme has considered and applied the design principles
	• Proposed Mottram Moor roundabout replaced with a signal-controlled junction. The traffic modelling suggested that a crossroads with traffic lights would achieve future reserve capacity, improving journey times, by reducing delays. This change reduces land take, as well as the impacts of the scheme on wildlife and views from neighbouring properties • Alignment to the east of the Scheme was moved to accommodate a proposed housing development, ensuring the Scheme is integrated with future communities. • Improved crossing facilities on the A57 from the M67 Junction 4 include a combined cycleway and footpath alongside the new A57(T) to A57 link road between Mottram Moor and Woolley Bridge. Providing safe controlled crossings as an integral part of the overall junction design, as it provides appropriate segregation for walkers and cyclists • Reduction of proposed construction compound sites from three areas to one area. Less disruption and noise to the community, reduced land take, reduced the impacts on wildlife and watercourses. • Opportunities for facilities for cyclists, pedestrians, equestrians and walkers were identified through work with local authorities and Transport for Greater Manchester (TfGM). All junctions designed to include a horse crossing. Provisions encourage people to walk and cycle and increase the attractiveness of the routes while making the walking routes safer. Following consultation with Tameside MBC it ensures that the Scheme would tie in with their proposed cycle scheme from Hyde to Hollingworth in the future. • Mottram Underpass design revised, moving it 20 m to the east, to span the fault line. This significantly reduces the risks involved. Other changes included replacing the proposed diaphragm wingwalls with less extensive secant pile walls. Simplified design using earthworks instead of concrete; reducing the length of the wing walls; reducing depth of the cutting itself; and retaining Old Hall Lane on its current alignment. The design blends in better with landscape; and is cheaper, quicker and easier to construct with reduced carbon footprint and reduction in disruption to the local community. • Removal of flood channel from River Etherow crossing design, shortening length to 42 m from 60 m, and removal of the supporting structure. Updated hydraulic modelling of the River Etherow confirmed flood risks could be managed by subtly reshaping the channel and the surrounding floodplain itself. • Carrhouse Lane Underpass design updated, relocating it 10m closer to the existing road. Improved access for local residents through provision of an inclusive facilities that increase the attractiveness of the routes while making them fit within the context of their surroundings.

Road to Good Design principles	How the Scheme has considered and applied the design principles
	• Old Mill Farm Underpass updated to link up better to the local footpaths, minimising impacts on farmer's access route severed by the Scheme. • Environmental benefits: minimises impacts on farmers access route severed by the Scheme • In response to recommendations from the landscape team, earthworks embankments along the A57 Link Road between the Mottram Moor and Woolley Bridge junctions were reduced and modified to reflect the existing surroundings and ensure more of the existing woodland could be retained. Profile shapes and habitat created would make these features look more naturalistic. The right blend between screening and integration with the local surroundings ensures future obligations for maintenance during the operation phase are minimised. • Signal phasing modifications at Hattersley Roundabout, Gun Inn junction and Mottram Junction were updated to reflect changes in junction priority and pedestrian and cyclist facilities. **Construction** • The current program is targeted at 18 months which was previously 24 months and where possible electric vehicles, offsite manufacturing will be looked at. • Engagement between the appointed Principal Designer and appointed Principal Contractor during the Preliminary Design stage has brought about more challenge to the design process at an earlier stage, as the project team are designing what they are actually going to build. This has brought about positive collaboration and innovative design decisions.
Good road design is collaborative	**Project design team** • One integrated team – everyone engaged, in the loop and pulling together – ensures best practice and constructive challenge. • Principal Designer and Principal Contractor appointed by National Highways during the Preliminary Design stage, therefore working together at an early design stage and during the DCO process, rather than at the Detailed Design stage. • Internal collaboration through delivery using digital tools. • The discipline leads attended weekly online design meetings where design developments were communicated to the team and discussions around constraints could be held, leading to a better considered design.

Road to Good Design principles	How the Scheme has considered and applied the design principles
	• The environmental assessment process fed into the design through workshops, design meetings and continual contact and feedback, resulting in the design discussion absorbing a wide range of professional opinions to influence and determine the final design. • Key members of the team are local to the Scheme and understand the local issues and requirements. **Wider consultation** • Working with key stakeholders including National Highways, Transport Authorities, Local Authorities, Utilities, and TfGM for consultation and throughout the design process. • Coordinating consultation with TfGM Clean Air Zone. • From the consultation feedback, every response was reviewed, coded and analysed so the design team could see if they need to consider these comments in relation to the design. Comments were reflected in how we responded in the consultation report to see how these have been delt with • Examples of collaborative influence to the design include: changes to the M67 Junction 4 roundabout layout, to include a through-about, improving facilities for pedestrians and cyclists; additional pedestrian crossing facilities at Gun Inn junction; additional facilities at all proposed signalised junctions. • Also consultation has led to changes to ensure that: the Scheme can maximise opportunities to minimise disruption on future farming activities; the proposal aligns with the Thameside MBC cycle scheme which is currently being designed; and the Wooley Bridge design fits into a future Derbyshire County Council housing development. • Continual interaction between project team disciplines, and consultation with Tameside MBC, as well as National Highways, has enabled the incorporation of connectivity improvements for NMUs in and around Mottram, in particular the connection to the TransPennine Trail and national cycle routes. • Install more ‘on-street’ parking at Mottram Moor, following consultation, as this is considered to require less ongoing maintenance, and provided additional space for soft landscaping. The design fits into the context of its surroundings and provides additional function and facilities for local residents. • New bridleway linking in with the local PRoW introduced from Old Hall Lane, on top of the cutting and linking back in with Mottram Moor Junction. This was in response to various walking, cycling and horse-riding consultees requested that a bridleway was provided along the proposed Glossop Spur. These bridleways will help to link the Trans Pennine and Pennine Bridleway National Routes, without road riding.

Road to Good Design principles	How the Scheme has considered and applied the design principles
Good road design is long lasting	**Whole life cost considerations** • A balance has had to be maintained between whole-life costing and other major considerations, such as construction cost and practical maintenance complications. • Whole life cost considerations include robust pavement foundation design to minimise long term maintenance. • Adhering to long term design life requirements for structures, drainage and traffic modelling where the preferred option favours durability over total costs. • All structures will be designed to current standards with a 120 year design life. Any proposed joints will be strengthened for 25 years beyond the structure design life (being 145 years total). • The preliminary design explored options to build minimum rather than use of low-cost materials. • Quality materials have been careful detailed to be maintenance friendly. **Flooding** • For pluvial flood risk on the road surface, 20% climate change allowance has been used for the preliminary design as per DMRB CG501 and as discussed with National Highways. A higher value, 40% allowance, for climate change will be assessed during detailed design once further information is available. • A climate change allowance has also been applied to fluvial flows for the design of the flood compensation areas (to determine their volume) and to determine the distance needed between the soffit of structures and the design flood water level of the rivers being crossed. **Landscape** • The proposed landscape design will aim to futureproof the Scheme in terms of climate change. This will include diversifying planting species as much as possible, including drought tolerant species, whilst still having regard to the local character, and generally planting only native species. • The focus has been on local species which have some resilience to avoid alien landscape features. This has been achieved through selecting locally successful plant species and adopting climate resilient ones based on current guidance to address warmer wetter winters and hotter drier summers. **Resilience** • The structures designed into the Scheme have been designed to be resilient to impacts arising from current weather events and climatic conditions and designed in accordance with current planning, design and

Road to Good Design principles	How the Scheme has considered and applied the design principles
	engineering practice and codes (e.g. the Environment Agency's guidance on allowances for rainfall and flood probability due to climate change, within the context of flood risk assessments). The Scheme has also been designed to include the wind loading standards which incorporate site specific criteria, based on a number of factors including wind direction, altitude and topography. • The design of the proposed Mottram Underpass will incorporate appropriate design measures/requirements, to ensure that the structural integrity and long-term performance of the underpass is not compromised. • The design will ensure structures can adapt to expected future variations in temperature. The Eurocodes used for the two bridges in the Scheme stipulate design to a temperature range of -18°C to 34°C which is adjusted to take account of altitude, material type and depth of surfacing thickness.

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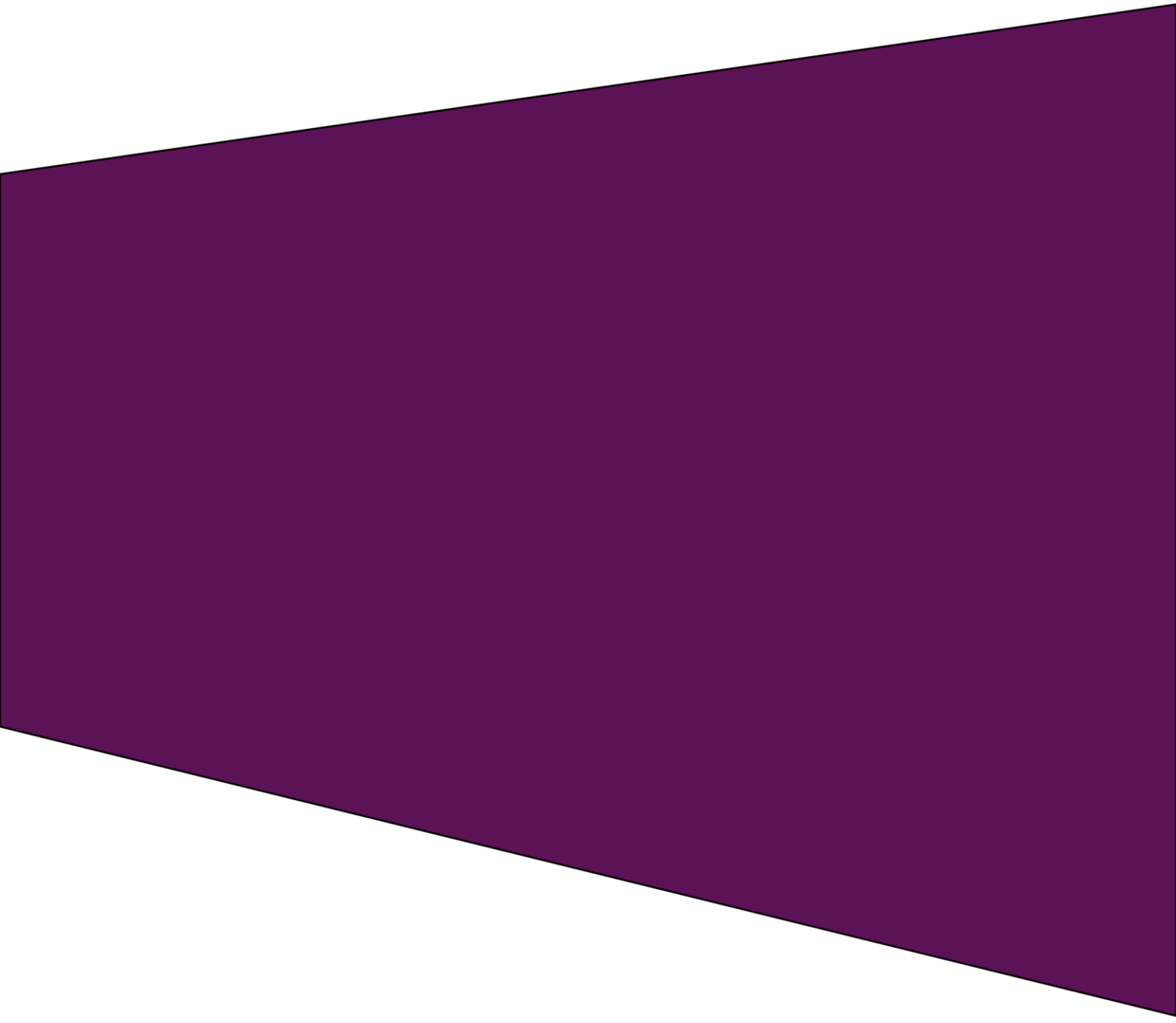

ANNEX D: EMERGENCY PROCEDURES AND RECORD OF ANY ENVIRONMENTAL INCIDENTS

To be produced prior to construction by the appointed Principal Contractor. This section should include:

• Confirmation of procedures in the event of an environmental emergency. A record of environmental incidents (in table format) if occurred to include the following information:

• Date and location of the incident

• Details of the reporting procedure followed

• Description of the incident and relevant legislation

• Remedial actions

• Lessons learnt

• Details of any contact with enforcing bodies.

ANNEX E: COPY OF EVALUATION OF CHANGE REGISTER

Table E-1 - Evaluation of Change Register

Change reference	Confirmation of the design/assumption change	List of Actions affected	Evaluation of the change	Nature of the change (material/non-material)	Actions required	Person responsible	Objective/outcome and reporting requirements	Detail of any monitoring required	Date and signature for completion of Action
1, 2, 3, etc.	*Describe the design / assumption change (e.g., in comparison to the original information included within the ES or EMP).*	*Use the Action references set out in Section 1 of the REAC.*	*Describe how the change affects the actions listed.* *Consider impacts in respect to relevant legislation.*	*Clarify whether the change materially affects the assessment conclusions.* *For material changes please seek legal advice.*	*Specify whether any remedial action is required.* *Specify whether any legislative action is required – i.e. does the change represent a departure from consent.*	*Refer to Tables in Section 2 of the EMP*	*Set out the criteria for determining the success of the action.* *This should be specific and measurable.* *Confirm how this will be reported, and who this information will be provided to.*	*Clarify the monitoring requirements (if any).* *Set out the nature, purpose and duration of the monitoring.*	*Required to certify that the Action has been completed.*

Note: Table provided to show description of Evaluation of Change process, together with instructions to indicate inputs required. To be refined for the Second iteration EMP, as applicable, in response to the statutory process stage and changes in actions

ANNEX F: FINAL ENVIRONMENTAL INVESTIGATION AND MONITORING REPORTS

To be produced prior to construction by the appointed Principal Contractor. This section should include:

• Copies of relevant reports (relating to protected species/ habitats and cultural heritage investigations, and any environmental monitoring reports) or cross reference to the locations of these easily if accessible elsewhere.

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