

A30 Chiverton to Carland Cross Environmental Statement

**Volume 6 Document Ref 6.4 ES Appendix 16.1
Outline CEMP**

HA551502-ARP-EGN-SW-RP-LE-000012

C01 | A3

22/08/18

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

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16 Outline Construction Environmental Management Plan (CEMP)

16.1 Introduction and background to the scheme

Purpose of the Outline Construction Environmental Management Plan (CEMP)

- 16.1.1 This document is entitled the outline Construction Environmental Management Plan (outline CEMP), for A30 Chiverton to Carland Cross (Hereafter referred to as “the scheme”). It has been produced at an appropriate level of detail for the Preliminary Design stage and to accompany the Development Consent Order (DCO) application for the scheme.
- 16.1.2 This CEMP is based on the current design for which Development Consent Order (DCO) is being applied. It has been prepared in accordance with the Design Manual for Roads and Bridges (DMRB) Volume 11 Section 2¹, Manual of Contract Documents for Highways Works (MCDHW)² and Interim Advice Notes (IAN) 183/14 Environmental Management Plans³ and IAN 182/14 Major Schemes: Enabling Handover into Operation and Maintenance⁴.
- 16.1.3 The predicted environmental effects of the scheme identified in Volume 6 Document Ref 6.2 Environmental Statement and the related actions and mitigation measures scheduled in the Register of Environmental Actions and Commitments (REAC) contained in this appendix, have formed the basis for developing this outline CEMP.
- 16.1.4 The main purpose of this outline CEMP is to provide details of how the environmental effects of the scheme would be managed during the construction phase by:
- ensuring all identified actions and mitigation measures contained in the REAC are implemented;
 - ensuring the relevant DCO Requirements are met;
 - ensuring compliance with environmental legislation; and
 - ensuring best practice measures are implemented.
- 16.1.5 This outline CEMP will be developed into a detailed CEMP once the detailed design and construction plans have been finalised.
- 16.1.6 This CEMP contains several outline management plans to be developed into full management plans, and also indicates plans that will need to be developed by the Principal Contractor prior to construction. These include:
- Annex A Constraints map
 - Annex B Outline Site Waste Management Plan
 - Annex C Outline Materials Management Plan
 - Annex D Outline Invasive Species Management Plan
 - Annex E Outline Ecological Management Plan
 - Annex F Outline Written Scheme of Investigation

¹ <http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section2.htm>

² <http://www.standardsforhighways.co.uk/ha/standards/mchw/>

³ <http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian183.pdf>

⁴ http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian182_14A.pdf

- Annex G Outline Ground and Surface Water Management Plan
- Annex H Outline Pollution Prevention and Control Management Plan
- Annex I Outline Arboricultural Method Statement and Tree Protection Plan
- Annex J Milestone Protection Management Plan
- Annex K Outline Noise and Vibration Management Plan
- Annex L Air Quality Management Plan
- Annex M Public Rights of Way Management Plan
- Annex N Outline Method Statement for the Translocation of Heathland
- Annex O Asbestos Management Plan

16.1.7 The CEMP will be used by the contractor to manage the construction of the scheme. The CEMP is a live document and will be maintained and updated throughout the construction phase by the contractor. The CEMP will be managed alongside the contractor's standard and site-specific environmental management plans and systems.

16.1.8 Upon completion of construction, the CEMP will be used to form the handover environmental management plan (HEMP). The indicative contents of the HEMP are detailed in Annex C of IAN 183/145. The HEMP will sit alongside the contractor's International Organisation for Standardisation (ISO)14001 accredited EMS.

16.2 Objectives of this CEMP

16.2.1 The overall objectives of this CEMP are as follows:

- To document all environmental actions and commitments that are required to manage and minimise environmental effects reported within the ES.
- To minimise the risk of any type of pollution incident or other form of unauthorised discharge.
- To minimise any nuisance to the nearby receptors.
- To maintain communication between the Client (Employer), the Project Manager and relevant third parties, with assignment of any specific and / or statutory reporting duties to third parties, where these are to remain their statutory duty.
- To be compliant with statutory legislation and contract specifications.
- To provide a framework for the implementation and review of the CEMP and other relevant documents.

16.2.2 This CEMP takes due consideration of the documents submitted to the Planning Inspectorate and assessments undertaken on behalf of Highways England, as well as the DCO for the scheme itself. It identifies mitigation and environmental issues associated with the following phases of construction:

- demolition
- prior to construction (for example advanced works, site preparation, vegetation clearance)
- during construction (for example works)
- post construction

⁵ Available at: <http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian183.pdf>

- 16.2.3 Throughout the CEMP, specific references are made to Requirements and Protective Provisions within the Draft DCO relating to relevant matters either prior to, during, or after construction.
- 16.2.4 [Note: Following receipt of the DCO for the scheme, the CEMP will be updated to reference specific Requirements relating to the various phases of construction.]

The Project

- 16.2.5 The Government's Road Investment Strategy: 2015 to 2020, published in 2014, sets out the vision for the strategic road network and includes a commitment to improve the A30 between Chiverton and Carland Cross to dual carriageway standard.
- 16.2.6 On 3rd July 2017, the preferred route for the A30 Chiverton to Carland Cross improvement scheme was announced. The preferred route provides a new dual carriageway running to the north of the existing A30 between Chiverton and Chybucca and to the south between Chybucca and Carland Cross (see Figure 1.1 Location Plan). The existing A30 will be kept to provide a local route. The announcement of the preferred route follows a comprehensive review of options and extensive analysis of responses to the 2016 public consultation.
- 16.2.7 The scheme comprises the construction of 14km (8.7 miles) of new A30 to dual two lane rural all-purpose road (D2AP) standard between the existing Chiverton Cross roundabout in the west and Carland Cross roundabout in the east. At the western end, the scheme connects to the existing A30 Blackwater Bypass immediately west of the existing Chiverton Cross roundabout, leading on to the Scorrier Junction further west, and at the eastern end, the scheme connects to the existing Mitchell Bypass approximately 500m east of the existing Carland Cross roundabout.
- 16.2.8 The existing Chiverton Cross and Carland Cross roundabouts are to be replaced with new grade separated all-movement gyratory junctions to provide connections to the local major side road network whilst maintaining uninterrupted traffic flow on the mainline A30. Additionally, a grade separated restricted movement dumbbell junction with west facing slip roads only is to be included at Chybucca.
- 16.2.9 To accommodate the new dual carriageway, the existing A30 will be retained to provide a local route. It will connect to a number of minor side roads leading to and from Truro to the south of the A30, and to and from Perranporth and Newquay to the north.
- 16.2.10 Environmental Masterplans (Volume 6 Document Ref 6.3 Figure 7.6) have been prepared for the scheme. Works must be implemented in accordance with this Environmental Masterplan, to minimise effects associated with landscape and visual, cultural heritage setting, noise and biodiversity. The scheme once operational should reflect this environmental design.

Project location

Site

- 16.2.11 The A30 is a main route from London to Land's End and is particularly important as one of two trunk roads connecting Devon and Cornwall, past numerous other settlements including Okehampton, Launceston, Bodmin, Redruth and Hayle. The A30 Chiverton to Carland Cross section lies north west of Truro and provides

businesses and residents in this corridor with access to the wider SRN, predominantly the M5 and A38.

- 16.2.12 The location of the A30 Carland Cross to Chiverton is shown in Volume 6 Document Ref 6.3 ES Figure 1.1 Location Plan.

Surrounding area

- 16.2.13 The surrounding landscape is largely agricultural. The existing route is flanked by grass verges, trees, hedgerows, as well as isolated and small groups of residential dwellings, farms, other businesses and renewable energy installations.

Key designations

- 16.2.14 There are no statutory designated sites within the scheme area, but there are a number within 1km which are shown in Volume 6 Document Ref 6.4 Appendix 16.1 Outline CEMP Annex A Environmental Constraints Plans and include:

- Cornwall and West Devon Mining Landscape World Heritage Site ⁶(adjacent to the scheme);
- Chyverton Park Registered Park and Garden⁷ (adjacent to the scheme);
- Newlyn Downs Special Area of Conservation (SAC)⁸ and Site of Special Scientific Interest (SSSI) (138 meters to the north of the scheme); and
- Carrick Heaths SSSI (345 meters north of the scheme).

- 16.2.15 There are also a number of Scheduled Monuments (barrows) and listed buildings and other structures (milestones) adjacent to the road which are shown on Volume 6 Document Ref 6.3 ES Figure 1.3 Environmental Constraints Plans.

Need for the project

- 16.2.16 The scheme is required as this section of the A30 is the last remaining length of single carriageway between Camborne and the M5 motorway, and regularly experiences congestion and delays, with poor journey time reliability. These problems are exacerbated in summer months, when traffic flows increase due to tourist traffic. The route is in need of improvement to meet Highways England's objectives of maintaining the smooth flow of traffic, making the network safer and supporting economic growth.

Local economic growth and social/community regeneration

- 16.2.17 Current congestion on the existing A30 between Chiverton and Carland Cross forms a bottleneck on the trunk road network in Cornwall, preventing reliable east – west journeys and stifling growth in Cornwall. If not improved, the existing infrastructure will continue to contribute to growing congestion, poor reliability and efficiency, and poor journey times – all of which fail to meet Highways England's business strategy and the Government's strategic vision outlined in the Road Investment Strategy (RIS).

⁶ <https://whc.unesco.org/en/list/1215/documents/>

⁷ <https://historicengland.org.uk/listing/the-list/list-entry/1000512>

⁸ <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0030065>

Route performance

16.2.18 The issues identified on the current A30 between Chiverton and Carland Cross are:

- sections of narrow carriageways;
- unsuitable bends and gradients for high speed traffic;
- locations with poor forward visibility;
- slow moving agricultural vehicles;
- limited opportunities for overtaking;
- increasing traffic levels outgrowing the capacity of the existing road;
- multiple minor roads and junctions where traffic enters, exits or crosses the A30; and
- numerous properties have direct access to the A30.

16.2.19 The consequences of these issues are:

- congestion and longer journey times, particularly during peak times;
- unreliable journey times;
- queuing at the junctions, due to the interaction between local and strategic traffic, particularly at peak times; and
- queuing when incidents occur with knock on effects to surrounding local routes.

Safety

16.2.20 The limited overtaking opportunities, side road, junctions and private accesses have caused numerous accidents on this section of the A30. According to a summary of traffic personal injury accidents between 1 January 2012 and 31 December 2016 there was 1 fatality, 17 serious collisions and 94 slight collisions between Chiverton Cross and Carland Cross.

16.2.21 Accidents were more frequent in the vicinity of Chiverton Cross, Carland Cross, Zelah Hill, Chybucca and Callestick/Allet Cross Junction.

Resilience

16.2.22 The A30 is the most important route serving the County of Cornwall for both long-distance and local road users. It runs from Exeter along the middle of the peninsula to Penzance and is approximately 104 miles in length. Of this, 78 miles is dual carriageway.

16.2.23 The single carriageway A30 between Chiverton and Carland Cross is sensitive to incidents. When they impede or block flow there is no alternative direct route, forcing traffic to queue on the main road or divert to minor roads which are not capable of sustaining substantial traffic flows or movements. This situation is worsened by the at grade junctions, including many minor junctions and direct agricultural and residential accesses; all of which increase the likelihood of incidents.

Outline of proposed works

16.2.24 The scheme comprises the following main features:

- The construction of a new A30 dual two lane rural all-purpose road (D2AP) approximately 14km (8.7 miles) to current trunk road design standards.

- The re-alignment of the existing A30 at Chiverton, Chybucca, Zelah and Carland Cross to maintain as a parallel local route;
- The construction of a new grade separated all-movement gyratory junction at Chiverton, with realigned connections to the B3277, A3075, A390 and the existing A30 side roads and the removal of the existing Chiverton Roundabout;
- The construction of a new Walking, Cycling and Horse Riding underbridge just west of the new Chiverton junction, providing grade separated WCH access between the side roads and across the new A30;
- The construction of a new grade separated restricted movement dumbbell junction at Chybucca, with west facing slips only and connections to the existing A30 and the B3284 side roads;
- The construction of a new side road underbridge at Tresawsen providing grade separated access across the new A30;
- The stopping up of the Kilavose side road at Marazanvose;
- The construction of a Green overbridge crossing for ecology at Marazanvose, with an associated Walking, Cycling and Horse-riding (WCH) route linking between the adjacent side roads;
- The construction of a reinforced slope at the existing WPD overhead pylon east of Marazanvose;
- The retention of and improvement of the existing Two Barrows underbridge, with the new staggered junction for the Shortlanesend Road with the realigned existing A30, retaining grade separated access across the new A30;
- Demolition of the existing bridge at Tolgroggan Farm and the construction of a new accommodation overbridge over the new and realigned A30;
- The construction of a new Walking, Cycling and Horse Riding underbridge at Church Lane, with grade separated WCH access across the new A30 and retained access to Zelah;
- The construction of a new side road underbridge at Trevalso Lane, providing grade separated access across the new and existing A30 and linking with the realigned Henvor Lane;
- The construction of a new side road underbridge at Pennycomequick;
- The stopping up and realignment of the Ennis Lane side road;
- The construction of a reinforced slope at the existing historic Round Barrow near to Ennis Farm;
- The construction of a new Walking, Cycling and Horse Riding underbridge at Newlyn Downs, with grade separated WCH access across the new A30 between the A39 and the realigned existing A30;
- The construction of a new grade separated all-movement dumbbell junction at Carland Cross, with connection to the A39 side road and replacing the existing Carland Cross Roundabout;
- The diversion of a gas high pressure pipeline, water mains, power cables and telecommunications cables and mast, as well as the removal of sections of an abandoned oil pipeline;
- The construction of a number of new private laneways along the scheme, providing new and retained access from the existing side road network;
- The construction of 9 new public lay-bys along the scheme, a rest area on the realigned B3277 and a number of maintenance lay-bys and emergency access points;
- The construction of 20 new drainage attenuation ponds for the new A30 and realigned side roads; and

- The construction of 5 major drainage culverts and 14 multi-species culverts under the new A30 and side roads.

Programme

- 16.2.25 The start date for the construction phase would depend upon a number of factors including the granting the development consent order. It is currently anticipated that the construction activities for the scheme would commence in March 2020, as identified in the Road Investment Strategy
- 16.2.26 The construction programme would be finalised by the main contractor in advance of the works. The duration of the works is currently estimated to require a construction period of at least 30 months, including two full earthworks seasons and excluding advance works/vegetation clearance/major utility diversions, archaeological testing and de-trunking of the existing road.
- 16.2.27 Following construction there will be a 24-month environmental aftercare maintenance and monitoring period.

Hours of working

- 16.2.28 The site workforce could be approximately 50-100 staff at any one time and would consist of management and administration staff, civil and structural engineers/surveyors, machine drivers, ground workers, steel fixers and electricians.
- 16.2.29 The expected site hours are 07:30 to 19:30 Monday to Saturday between 1st March and 31st October and 07:30 to 18:00 for the rest of the year. Where necessary, work will be undertaken on Sundays between 08:00 and 13:00. Limited night time working will be required for traffic management, bridge beam lifts, demolition operations, surfacing works at tie-in locations and imported materials during the peak holiday seasons to minimise traffic impact during the normal daytime hours. The main compound will operate on a 24-hour basis, where services such as traffic management, CCTV and vehicle recovery will be stationed.

Project Objectives

- 16.2.30 The objectives for the scheme were developed from consideration of the following:
- National objectives of Department for Transport (DfT) and Highways England;
 - commitments within the Road Investment Strategy (RIS);
 - Highways England delivery plans;
 - Cornwall Council's transport objectives;
 - Highways England Licence; and
 - the constraints on the current A30.
- 16.2.31 The transport objectives for the scheme are:
- to contribute to regeneration and sustainable economic growth;
 - to support employment and residential development opportunities;
 - to improve the safety, operation and efficiency of the transport network;
 - to improve network reliability and reduce journey times;
 - to deliver capacity enhancements to the Strategic Road Network (SRN);
 - to support the use of sustainable modes of transport;

- to deliver better environmental outcomes; and
- to improve local and strategic connectivity.

Site roles and responsibilities

16.2.32 The site based roles and the organisation of responsibilities in relation to environmental management are summarised below. The Principal Contractor (PC) will be required to delegate responsibilities to onsite personnel within key areas of the site and compounds. The delegation of responsibility will be clearly identified within relevant documents and site files.

16.2.33 The objectives for the scheme were developed from consideration of the national objectives of Department for Transport (DfT) and Highways England, Cornwall Council's transport objectives, and the constraints on the current A30. The transport objectives for the scheme are:

- to contribute to regeneration and sustainable economic growth;
- to support employment and residential development opportunities;
- to improve the safety, operation and efficiency of the transport network;
- to improve network reliability and reduce journey times;
- to deliver capacity enhancements to the Strategic Road Network (SRN);
- to support the use of sustainable modes of transport;
- to deliver better environmental outcomes; and
- to improve local and strategic connectivity.

16.3 Project team roles and responsibilities

Project management organisation

16.3.1 The overseeing management of the project will be directed by Highways England. Highways England may delegate some site supervision roles and procure specialist consultants to supervise, monitor or check the main contractor's procedures for sensitive activities where required. The key environmental management roles involved in the delivery of the CEMP are identified in Table 16-1.

Table 16-1 Environmental management key site personnel

Role	Contact	Organisation
Scheme Project Manager	Josh Hodder	Highways England
Contract Leader	TBC	Contractor
Environmental Manager	TBC	Contractor
Environmental Clerk of Works	TBC	HE/Arup/Contractor
Environmental Specialists	TBC	Arup/Contractor
Community Liaison Manager	TBC	Contractor

[Note: Individual names and contact details (primary and secondary) for each will be confirmed and inserted by Highways England and the contractor in the final CEMP]

16.3.2 The scheme Project Manager would have overall responsibility for the construction of the new section of dual-carriageway. A full-time Environmental Manager would be responsible for developing the Outline CEMP into the CEMP and implementing the CEMP during construction.

- 16.3.3 Other members of the project team would be assigned specific roles to assist the Project Manager in the implementation of the CEMP and individual specialists would be appointed to provide expert advice.

Environmental management responsibilities

- 16.3.4 The PC is responsible for producing the full CEMP once the design and construction plans have been finalised.
- 16.3.5 Highways England and delegated consultants acting on their behalf, PC and subcontractors are all responsible for complying with the scheme's environmental policies, relevant environmental legislation and regulations. It is a requirement that all persons on site will be made aware of their duty of care to the environment and will be provided with sufficient training, supervision or instruction through Site Inductions, toolbox talks (TBTs) and specific Method Statements as necessary.
- 16.3.6 Responsibilities for the site environmental management will be delegated to key personnel by the PC who will manage all reporting and monitoring of environmental mitigation during the contract period. Where required, environmental specialists will be consulted to provide advice on specific issues or site activities, in consultation with the PC. The main environmental roles and responsibilities are shown in Table 16.2.

Table 16-2 Main environmental roles and responsibilities

Role	Responsibility
Highways England Project Manager	Oversee implementation of whole project and the individuals undertaking specific roles and duties. To be reported to as per Contract requirements and internal organisation EMS.
PC Environmental Manager	PC Environmental Manager or delegate responsible for overseeing the environmental components of the project. Coordination of specialists and site environmental management compliance. Audit the PCs' Site Waste Management Plan and activities associated with onsite waste management; Monitor compliance with the environmental requirements of the Works Information.
PC Environmental Clerk of Works	Provide site induction on environmental practises, toolbox talks, organise specialist surveys, and oversee monitoring and testing of materials as required. Monitoring PC site environmental compliance. Undertake day to day monitoring and compliance checks. Monitor control of dust, noise and vibration. Maintain and update site specific Method Statements. Hours of working to meet accepted noise and vibration limits set in consultation with Environmental Health Officer (EHO). Develop with PC Site Health & Safety Officer an Emergency Spillage Response Plan and associated protocols for incidents. Ensure local Environment Agency requirements are implemented for consents and permits.
PC Environmental Specialist(s)	Contamination and remediation specialist. Project Waste Management controller - may be member of PC dedicated Quality and Safety Team. Ecologist: Supervision if protected species presence confirmed or risk identified during works. Landscape Manager to supervise planting and aftercare. Other as required.

Role	Responsibility
Community Liaison Officer	Key liaison with all above and Highways England Public Liaison Officer: Maintain and develop Community Relations Strategy. Maintain comment and enquiries log, and disseminate identified comment for response and implementation of action.

16.3.7 The contractor will be responsible for preparing the HEMP and Construction Phase Health and Safety Plan on completion of construction, for handover to the managing agent.

16.4 Record of Environmental Actions and Commitments (REAC)

16.4.1 The Record of Environmental Actions and Commitments (REAC) below presents an initial register which has been developed using information presented in Volume 6 Document 6.2 Environmental Statement. It will continue to be updated throughout the design, construction and operation stages of the scheme. This register assumes that in addition to compliance with measures in this table, all activities will comply with applicable environmental legislation.

16.4.2 The REAC is provided in table format and includes:

- Identification of the environmental action or commitment;
- The objective of the action or commitment;
- The source of the action, including references for source documentation;
- A clear and specific description of how the action or commitment is to be implemented/achieved; and
- When the action or commitment is to be implemented/achieved.

16.4.3 Where it is required that mitigation/action must be monitored to determine success, the details of monitoring, success criteria, reporting requirements and trigger level for remedial works should be clearly defined.

16.4.4 The REAC will be developed during detailed design to include:

- Naming of the person responsible for the action i.e. Contractor or Environmental Manager;
- Achievement criteria and reporting requirements;
- The project stage or date of implementation and/or achievement;
- Details of any monitoring required, what should be monitored and how results should be used to effect necessary action; and
- Date and signature for completion of action.

16.4.5 The REAC will be updated as the scheme progresses and will be finalised at the end of construction on completion of the scheme where it will be developed into the HEMP. This is the main vehicle for passing essential environmental information to the Client and crucially to the body responsible for the future maintenance and operation of the asset.

Table 16-3 Record of environmental actions and commitments

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
Air Quality										
AQ1	Ch5	Vol 6 Doc 6.2	Manage dust, odour and exhaust emissions during the construction works in accordance with the best practicable means (BPM). Actions to include: <ul style="list-style-type: none"> Machinery and dust-causing activities to be located away from sensitive receptors. Erection of hoardings/barriers along the site boundary, where appropriate; Construction plant and vehicles to be managed to limit emissions and dust by switching off machinery when not in use, no idling vehicles, and exhausts directed away from ground level; Stockpiles and mounds will be at a suitable angle of repose and avoid 	Limit and control dust, odour and exhaust emissions caused by construction works of the scheme.	Community receptors, and ecological designated sites sensitive to changes in NOx concentrations within the vicinity of the scheme.	Daily site audits.	Outline CEMP, Annex L Outline Air Quality Management Plan.	Principal Contractor.	P and C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<p>sharp changes in shape to prevent material slippage located away from sensitive receptors, fine dry material to be stored inside buildings or enclosures;</p> <ul style="list-style-type: none"> • Apply for permits for concrete crushing and batching plant operations; • Haul roads to be cleaned and suppress dust through regular inspection and repair of routes where necessary; • Demolition activities to be controlled by spray of water, screening and shielding waste shuts to limit dust pollution; • Earthworks and excavations to be managed to limit dust by compacting deposited materials, seeding or planting of earthworks, reducing drop 							

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<p>heights of excavated material from vehicles, and topsoil stripping to happen close to the period of earthworks;</p> <ul style="list-style-type: none"> • Drilling activities to be managed by shielding machinery, extracting dust at source, water rock surfaces if being excavated, best practice means for mixing grout or cement; and • Monitor dust and emissions through site inspections including the adjacent areas, and inspection of machinery. 							
AQ2	Ch5	Vol 6 Doc 6.2	<ul style="list-style-type: none"> • Plan construction routes and works to limit the number of vehicles needed, and limit the numbers passing receptors and use existing roads; • The movement of construction traffic 	Limit numbers of construction vehicles where practicable.	Not applicable.	Not applicable.	Outline CEMP, Annex L Outline Air Quality Management Plan.	Principal Contractor.	P and C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<p>around the site will be kept to the minimum;</p> <ul style="list-style-type: none"> Site access points will be designed to avoid queuing traffic; All non-road mobile machinery will use ultra-low sulphur tax exempt diesel where available and machinery with power outputs of over 37kW will be fitted with appropriate exhaust after-treatment from approved Energy Saving Trust list; The use of diesel or petrol powered generators will be reduced by using mains electricity or battery powered equipment where reasonable and practicable. 							
Cultural Heritage										
CH1	Ch6	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Produce and implement a Written Scheme of Investigation (WSI) for the scheme in 	To ensure that archaeological deposits that will be impacted directly by the	Based on the results of the geophysical surveys and trial trenching this	Consultation with the Local Authority Archaeological	Draft DCO Requirement 9	Detailed design consultant and Principal Contractor	P, C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<p>areas of archaeological interest. This must be prepared in consultation with the relevant planning authority and the local highway authority, agreed with Cornwall Council Archaeologist and submitted to and approved in writing by the Secretary of State. The WSI should include a programme of reporting;</p> <ul style="list-style-type: none"> Archaeological remains discovered during works must be retained in situ and reported to the County Archaeologist and mitigation undertaken as agreed. 	proposed scheme are preserved by record, to a level commensurate with their importance.	locality has the potential for high value buried archaeology.	Advisor and Historic England. Production of a WSI. Appointment of an archaeological sub-contractor to undertake the agreed works.				
CH2	Ch6	Vol 6 Doc 6.2	Produce procedures to record, protect, remove and reinstate Grade II Listed milestones (NHLE no. 1140923 and	To ensure that the milestones are removed without damage, stored and protected during	Not applicable	Consultation with the Local Authority Archaeological Advisor and Historic England.	Outline CEMP, Annex J Milestone Protection Management Plan		A	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			139483). This should include: <ul style="list-style-type: none"> Recording and labelling before the stone is moved by GPS recording, measurements and photos; Lifting the stone using webbing strops and lifting machinery not dragging the stone; The stone should be laid on pieces of timber and not directly onto the ground and covered to protect from damage; Replacement of stones in exact position with this overseen by a qualified archaeologist and recorded; Lifting for reinstatement should with use of webbing strops. 	construction, and reinstated at an appropriate location at the end of construction						
Landscape										
L1	Ch7 and Appe	Vol 6 Doc 6.2 and	<ul style="list-style-type: none"> Protect and retain valued existing vegetation and 	To minimise negative effects on biodiversity and on	Not applicable	Daily Site Audits and the reference to and adherence	Draft DCO Requirement 5	Principal Contractor and	C	Signature:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
	ndix 7.6	Doc 6.4	<p>other landscape features (in particular; trees, woodland, hedgerows and Cornish hedgerows) wherever possible.</p> <ul style="list-style-type: none"> Develop a detailed Arboricultural Method Statement to include construction exclusion zones, and tree protection measures in accordance with BS 5837:2005; A watching brief to be undertaken by an arboricultural consultant during construction of the drainage ditch at Chainage 3737 to 3850. 	the character of the landscape		with the detailed Arboricultural Method Statement and tree protection plan (to be produced).	<p>Environmental Master Plans</p> <p>Outline CEMP, Annex I Outline Arboricultural Method Statement and Tree Protection Plan</p>	the scheme arboriculturalist		Date:
L2	Ch7 and Figure 7.6	Vol 6 Doc 6.2 and Doc 6.3	<ul style="list-style-type: none"> Following completion of sections of the scheme and associated environmental mitigation, reinstate disturbed land not required for the permanent works, 	Restore the landscape around the scheme to its current condition and integrate the scheme into the landscape	Not applicable	Successfully implement Environmental Masterplans (Volume 6, Document Ref 6.2, Figure 7.6) design in line with the CEMP - supervision and	<p>Draft DCO Requirement 5</p> <p>Environmental Master Plans</p>	To be implemented by the Principal Contractor and the scheme Landscape Architect.	C	<p>Signature:</p> <p>Date:</p>

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<p>to its current condition. The land is to be reinstated in accordance with the Environmental Masterplans; and</p> <ul style="list-style-type: none"> All areas of disturbed ground resulting from the construction of the scheme, is to be graded, cultivated and reinstated to its current condition to tie smoothly back into the surrounding fields. 			review of planting works.				
L3	Ch7 Figure 7.6	Vol 6 Doc 6.2 and Doc 6.3	<p>Implementation the design on the Environmental Masterplans. Planting to be done in the earliest available planting season following construction of relevant sections of the scheme.</p>	To reduce negative effects and amplify positive effects of the scheme on visual amenity and the character of the local landscape	Not applicable	Successfully implement Environmental Masterplans (Volume 6, Document Ref 6.2, Figure 7.6) design in line with the CEMP - supervision and review of planting works.	<p>Draft DCO Requirement 5</p> <p>Draft DCO Requirement 6</p> <p>Environmental Masterplans</p>	To be implemented by the Principal Contractor and the scheme Landscape Architect.	C, O	<p>Signature:</p> <p>Date:</p>
L4	Ch7	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Maintain aftercare of reinstatement and mitigation planting (as defined in the 	To ensure the mitigation measures are implemented with due care and in	Not applicable	Successfully implement Environmental Masterplans (Volume 6,	<p>Draft DCO Requirement 6</p> <p>Environmental Masterplans</p>	Principal Contractor and scheme landscape architect.	C, O	<p>Signature:</p> <p>Date:</p>

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<p>Environmental Masterplans) and seeding for 24 months following construction to reinstatement is effective;</p> <ul style="list-style-type: none"> Any tree or shrub planted within a period of 5 years after planting dies, diseased or damaged to be replaced in the first available planting season. 	accordance with the specification to establish the mitigation measures so they grow and thrive.		Document Ref 6.2, Figure 7.6) design in line with the HEMP.				
L5	Ch7	Vol 6 Doc 6.2	Management of the proposed soft estate in accordance with a 5 year landscape management plan. A landscaping plan must be approved prior to works based on the Environmental Masterplans.	To ensure the soft estate continues to grow and thrive to fulfil its design intent and mitigate effects as predicted in the Environmental Statement	Not applicable	Successfully implement Environmental Masterplans (Volume 6, Document Ref 6.2, Figure 7.6) design in line with the HEMP.	Draft DCO Requirement 5 Draft DCO Requirement 6	Principal Contractor and scheme landscape architect.	O	Signature: Date:
L6	Ch7	Vol 6 Doc 6.2	Production of a construction stage lighting strategy to limit the use of construction lighting and ensure all essential lighting is specified and designed to reduce light spill. This is to include locations of	To reduce light spill during construction.	Not applicable	Inspection during installation of lighting.	Detailed in the Outline CEMP Annex E: Outline Ecological Management Plan	Principal Contractor	C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			lighting and lighting levels details.							
Ecology and Nature Conservation										
NC1	Ch8	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Standard best practice pollution prevention and control measures must be adhered to at all times during construction including CIRIA C532: Control of Water Pollution from Construction Sites, CIRIA Environmental Good Practice on Site. Surface water monitoring to be undertaken to demonstrate no adverse effects on water quality during construction works; Any pollution or spills to be reported immediately to the Contractor's Site Environmental Manager. 	<p>To ensure no pollution effects during construction on statutory (SAC, SSSI) and non-statutory designated sites (CWS, CRVI).</p> <p>To ensure no pollution effects from construction activities on areas of retained Priority Habitats (Section 41 NERC Act) and other notable habitats including broadleaved woodland, hedgerows, Cornish hedgerows, heathlands, grasslands (Site 7).</p>	Not applicable	Not applicable	Detailed in the Outline CEMP, Annex H Outline Pollution Prevention and Control Plan	Principal Contractor	C A	Signature: Date:
NC2	Ch8	Vol 6 Doc 6.2	Existing trees, woodlands, hedgerows and Cornish hedgerows to be retained, must be	To ensure protection of retained areas of Priority	Not applicable	Daily Site Audits and the reference to and adherence with the detailed	Outline CEMP, Annex I Outline Arboricultural Method	Principal Contractor and the scheme arboriculturalist	P, C	Signature:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			protected during construction with protective fencing where necessary in accordance with BS5837:2012.	Habitats/notable habitats including broadleaved woodland, hedgerows, Cornish hedgerows, heathlands, grasslands.		Arboricultural Method Statement and tree protection plan (to be produced).	Statement and Tree Protection Plan			Date:
NC3	Ch8	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Pre-construction survey of all areas within construction footprint to identify the location of any invasive species. A Method Statement for preventing the spread of any invasive species to be produced at Detailed Design stage and included within the CEMP. Measures to include vehicle cleaning where invasive species are removed, supervision of excavation and transport of contaminated invasive species material and 	To prevent the spread of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) including Japanese knotweed, Himalayan balsam and giant hogweed.	Not applicable	Compliance with mitigation measures outlined within Outline CEMP Annex D Outline Invasive Species Management Plan	Outline CEMP, Annex D Outline Invasive Species Management Plan	Principal Contractor	P, C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<p>appropriate disposal to be outlined.</p> <ul style="list-style-type: none"> Implementation to be undertaken through site set up and provision of Toolbox Talks. 							
NC4	Ch8	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Pre-construction surveys must be carried out to verify the location, status and characterisation of previously identified bat roosts and to identify any new bat roosts within the construction footprint and a 50metre radius. Obtain licences from Natural England and prepare a method statement with mitigation measures should there be disturbance or loss of bat roosts; Tree felling only to be undertaken between late August and 	To minimise construction stage impacts on bats and ensure compliance with protected species licences.	Not applicable	Compliance with mitigation measures outlined within Annex E Outline Ecological Management Plan in Section 2.4 and 4.3.	Draft DCO Requirement 10 Outline CEMP, Annex E Outline Ecological Management Plan	Principal Contractor	P, C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<p>October/early November;</p> <ul style="list-style-type: none"> Night working should be avoided where possible. If it cannot be avoided, it should be restricted in the vicinity of known bat commuting routes and valuable areas of foraging habitat. Construction lighting levels to use LED and to be low as current standards and provided only in essential areas, no light spill. 							
NC5	Ch8	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Pre-construction surveys to check for any new breeding sites or resting places of otter 500m along all water courses either side of the alignment and all other suitable habitat within a 50 metres radius of the construction footprint. 	To minimise construction stage impacts on otters.	Not applicable	Compliance with mitigation measures outlined within Annex E Outline Ecological Management Plan in Section 2.1 and 4.2.	Outline CEMP, Annex E Outline Ecological Management Plan	Principal Contractor	P, C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<ul style="list-style-type: none"> No steep-sided, deep and/or water-filled excavations would be left unguarded overnight. Major excavations that need to be left uncovered overnight would have their slopes battered. If it is necessary to leave small deep, steep-sided or water-filled excavations open overnight they would be protected with suitable fencing. Night working should be avoided where possible. Construction lighting levels to use LED and to be low as current standards and provided only in essential areas, no light spill. 							
NC6	Ch8	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Mitigation to include for temporary loss of habitat, bird 	To minimise construction stage impacts on breeding birds.	Not applicable	Compliance with mitigation measures outlined within	Outline CEMP, Annex E Outline Ecological	Principal Contractor	P, C	Signature:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<p>boxes in trees and buildings.</p> <ul style="list-style-type: none"> Site clearance activities should be timed to avoid the bird breeding season (March to August inclusive), where possible. Where this is not achievable – method statements under NC11 will be applied. Ecological Clerk of Works (ECoW) to carry out a nesting bird check on any vegetation to be cleared, or vegetation directly adjacent to major works, no more than 48 hours prior to works commencing. If an active nest is identified, an appropriate exclusion zone will be decided by the ECoW based on the construction activity taking place. 			Annex E Outline Ecological Management Plan in Section 2.1 and 4.2.	Management Plan			Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
NC7	Ch8	Vol 6 Doc 6.2	<ul style="list-style-type: none"> A detailed method statement for the protection of fish populations during installation of the culverts (and other construction activities affecting the watercourses) will be drawn up at the detailed design stage. Fish relocation should take place in watercourses where fish were recorded under licence with the EA. 	To minimise construction stage impacts on fish.	Not applicable	Compliance with mitigation measures outlined within Annex E Outline Ecological Management Plan in Section 2.5.	Outline CEMP, Annex E Outline Ecological Management Plan	Principal Contractor	P,C	Signature: Date:
NC8	Ch8	Vol 6 Doc 6.2	<ul style="list-style-type: none"> A detailed method statement for the potential translocation of the heathlands will be drawn up at the detailed design stage. This is to include methods for soil sampling, site preparation and translocation, translocation method, and aftercare to be agreed with Natural England; 	To minimise construction stage impacts on terrestrial invertebrates.	Assumes landowner consent to use land as receptor site.	Compliance with mitigation measures outlined within Annex N: Outline method statement for the translocation of heathland	Outline CEMP, Annex N Outline Method Statement for the Translocation of Heathland	Principal Contractor	P,C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<ul style="list-style-type: none"> The timing of any such translocation will consider the preservation of non-mobile species in the heathland. 							
NC9	Ch8	Vol 6 Doc 6.2	<ul style="list-style-type: none"> The reptile mitigation will be determined at detailed design stage. Habitat manipulation and creation strategies will be prioritised over exclusion fencing and translocation strategies. Habitat manipulation to include within grassland and heathland areas the reducing the height of the vegetation sward in stages (Phased habitat manipulation) within works footprint to encourage reptiles to move out of these areas - strimming to 300mm above ground level. 	To minimise risk of killing and injuring reptiles.	Not applicable	Compliance with reptile mitigation outlined in Annex E Outline Ecological Management Plan in Section 4.4	Outline CEMP, Annex E Outline Ecological Management Plan	Principal Contractor	P,C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<ul style="list-style-type: none"> If reptile translocation is required exclusion fencing and placement of artificial refugia installed at a density of at least 100 per hectare and remain in place throughout construction. 							
NC10	Ch8	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Pre-construction surveys to check location and status of known badger setts and to check for any new setts within construction footprint and within a 50m radius of the construction footprint; A scheme-wide badger licence from Natural England will be obtained which will detail mitigation for any impacts including disturbance to any badger sett; Any holes/excavations 	To minimise construction stage impacts on badgers.	Badgers are still present within the setts identified during the 2017 ecology surveys.	Compliance with badger mitigation outlined in Annex E Outline Ecological Management Plan in Section 2.2. Badger Mitigation Licence – Report of Actions under licence.	Outline CEMP, Annex E Outline Ecological Management Plan	Principal Contractor	P,C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			created during construction period which badgers or other mammals could fall into must be covered and a ramp provided.							
NC11	Ch8	Vol 6 Doc 6.2	Method statements will be drawn up at the detailed design stage comprising a series of mitigation measures including timing of works, to prevent adverse impacts on Section 41 species.	To minimise construction stage impacts on other Section 41 Species of Principal Importance	Not applicable	Compliance with mitigation measures outlined in Annex E Outline Ecological Management Plan in Section 2.6.	Outline CEMP, Annex E Outline Ecological Management Plan	Principal Contractor	P, C	Signature: Date:
Geology and Soils										
GS1	Ch9	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Mitigation measures will be implemented to reduce the impacts of construction activities within areas of potentially contaminated land or unexpected contamination in line with current best practice set out in a detailed Site Waste Management Plan (SWMP). This include measures to minimise the spread or release of 	To protect site end users, construction workers, soils and controlled waters	Not applicable	Consultation with the EA.	Draft DCO, Requirement 8 Outline CEMP, Annex B Outline Site Waste Management Plan	Principal Contractor	P, C	Signature: Date:

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			contamination by suitably storing contaminated materials and appropriate waste disposal procedures. <ul style="list-style-type: none"> As GS3 a contamination risk assessment is to be undertaken prior to works. 							
GS2	Ch9	Vol 6 Doc 6.2	Implementation of the Materials Management Plan (MMP) to manage the reuse of site won materials. This is to include a specification for suitable material to be used.	To ensure appropriate management of materials during construction, including handling, re-use and removal from site.	Not applicable	Not applicable	Outline CEMP, Annex C Outline Materials Management Plan	Principal Contractor	P, C	Signature: Date:
GS3	Ch9	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Prevent contamination being introduced into the environment and prevent existing contamination being mobilised or pathways to contamination being present during operation; Undertake a contamination risk assessment in respect of 	Protection of the environment from contamination	Not applicable	<ul style="list-style-type: none"> Production of working method statements. Daily site audits. Consultation with the EA where necessary. 	<ul style="list-style-type: none"> Draft DCO Requirement 8 Outline CEMP, Annex B Outline Site Waste Management Plan 	Principal Contractor	P, C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			controlled waters prior to works. This should outline existing sources of contamination, protective measures and remediation measures.							
GS4	Ch9	Vol 6 Doc 6.2	Carry out additional investigation/studies of mining area based on the results of surface geophysical studies.	To ensure known mining features do not impact stability of the carriageway or earthworks	Works in areas of historical mining.	Production of Contaminated Land Risk Assessment. Daily site audits.	DCO Article 22	Principal Contractor	P, C	Signature: Date:
Materials										
M1	Ch10	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Materials will be sorted/processed and where necessary treated (through for example, sorting and drying onsite) and the materials disposed of or reused as appropriate for the particular waste stream at offsite facilities. Recycling facilities in the vicinity of the proposed scheme location will be 	To minimise amount of waste which ends up off site or in landfill, thereby reducing impacts on waste management infrastructure capacity in the region.	The construction of the scheme will require large quantities of material. Assumed waste infrastructure has capacity locally.	Completion of SWMP (live document)	Outline CEMP, Annex B Outline Site Waste Management Plan	Principal Contractor	C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			identified by the Contractor. Only appropriately qualified and licensed waste management facilities would be used.							
M2	Ch10	Vol 6 Doc 6.2	<ul style="list-style-type: none"> To reuse onsite waste arisings as far as is reasonably practicable and where suitable; The detailed SWMP will detail the estimated quantities of waste material and the opportunities for reuse, recycling, recovery or disposal; The Contractor shall ensure that materials are treated and used as set out in the outline MMP. 	To minimise amount of waste sent to waste management facilities and impacts on local road network.	<p>The construction of the scheme will require large quantities of material.</p> <p>Assumed waste infrastructure has capacity locally.</p>	Completion of SWMP (live document)	<p>Outline CEMP, Annex B Outline Site Waste Management Plan</p> <p>Outline CEMP, Annex C Outline Materials Management Plan</p>	Principal Contractor	C	Signature: Date:
M3	Ch10	Vol 6 Doc 6.2	Use of the haul road and temporary network of local roads for the transport of materials.	To minimise impacts on the local road network	Assumes materials can be sourced locally.	Not applicable	<p>Draft DCO Requirement 11</p> <p>Draft Traffic Management Plan Vol 6, Doc</p>	Principal Contractor	C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
							Ref 6.4, Appendix 2.1			
Noise and Vibration										
NV1	Ch11	Vol 6 Doc 6.2	<p>To implement best practicable means (BPM) at all times in order to control noise and vibration from the works. Including:</p> <ul style="list-style-type: none"> Noise and vibration control at source - for example the selection of quiet and low vibration equipment, review of construction programme and methodology to consider quieter methods (including non-vibratory compaction plant, where required), location of equipment on site, control of working hours, the provision of acoustic enclosures and the use of less intrusive alarms, such as broadband vehicle reversing warnings; and 	To avoid significant construction noise and vibration effects and minimise adverse impact arising from construction works.	Sensitive receptors within the vicinity of the scheme.	Compliance with mitigation measures outlined in Annex K Outline Noise and Vibration Management Plan of Outline CEMP	Outline CEMP, Annex K Outline Noise and Vibration Management Plan	Principal Contractor	P, C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<ul style="list-style-type: none"> Screening - local screening of equipment, perimeter hoarding or the use of temporary stockpiles. 							
NV2	Ch11	Vol 6 Doc 6.2	<ul style="list-style-type: none"> To implement noise insulation/temporary rehousing policy where not practicable to mitigate airborne noise, or reduce exposure to levels that are tolerable during certain intensive construction phases. The contractor will submit a noise insulation/temporary rehousing appraisal at least six months prior to starting that phase of work on site. A noise insulation package will include secondary glazing, an alternative method of ventilation and, on 	To avoid significant construction noise and vibration effects and minimise adverse impact arising from construction works.	Sensitive receptors within the vicinity of the scheme.	Not applicable	Outline CEMP, Annex K Outline Noise and Vibration Management Plan	Principal Contractor	P, C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			certain aspects, venetian blinds.							
NV3	Ch11	Vol 6 Doc 6.2	<p>To implement noise and vibration monitoring during construction works to ensure mitigation controls are effective and exposure levels are acceptable. These are to include:</p> <ul style="list-style-type: none"> Physical measurements and observational checks/audits; Checking hours of working, presence of mitigation, number of plant, construction method; Reporting noise and vibration monitoring and any remedial actions required. 	To avoid significant construction noise and vibration effects and adequacy of control measures.	Sensitive receptors within the vicinity of the scheme.	Compliance with mitigation measures outlined in Annex K Outline Noise and Vibration Management Plan of Outline CEMP	Outline CEMP, Annex K Outline Noise and Vibration Management Plan	Principal Contractor	C	Signature: Date:
NV4	Ch11	Vol 6 Doc 6.2	Noise mitigation measures incorporated into the design of the scheme to control operational noise impacts including, a low noise road surface, Cornish Hedges (earth-	To avoid significant operational noise effects and minimise adverse impact arising from the operation of the scheme.	Sensitive receptors within the vicinity of the scheme.	Compliance with Vol 6 Doc Reference 6.3 Figure 7.6 Environmental Master Plans	Draft DCO Requirement 5, 6 and 12 Vol 6 Doc Reference 6.3 Figure 7.6	Principal Contractor	O	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			filled stone walls) and noise fencing. Contractor to work in accordance with the EMPs.				Environmental Master Plans			
NV5	Ch11	Vol 6 Doc 6.2	<ul style="list-style-type: none"> Manage noise and vibration during construction within Section 61 of the Control of Pollution Act 1974. Section 61 consent to be made 28 days before work starts. Consent application details to include details of construction activities, prediction methods, location of sensitive receptors, noise and vibration levels. 	Manage noise and vibration during construction within Section 61 of the Control of Pollution Act 1974.	Sensitive receptors within the vicinity of the scheme.	Compliance with mitigation measures outlined in Annex K Outline Noise and Vibration Management Plan of Outline CEMP	Draft DCO Article 43 Outline CEMP, Annex K Outline Noise and Vibration Management Plan	Principal Contractor	C	Signature: Date:
People and Communities										
PC1	Ch12	Vol 6 Doc 6.2 & Vol 6 Doc 6.4 Appendix 16.1 Annex M Public Rights of Way	Implement a hierarchy of mitigation in relation to PRow and WCH routes both during construction and operation detailed in Annex M Public Rights of Way Management Plan. These include:	Ensure safety of users whilst maintaining accessibility where possible (e.g. diversions) during construction as well as maintaining and enhancing accessibility (e.g.	Local traffic and NMUs will still require access around the area.	Implementation of measures outlined in Public Rights of Way Management Plan	Outline CEMP, Annex M Public Rights of Way Management Plan	Principal Contractor	A	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
		Management Plan	<ul style="list-style-type: none"> • Use of signage where PRow can remain open but users need to be warned of the presence of construction vehicles (local management); • Implementation of short, temporary closures where local works might affect safety of users (local closures); • Closure of/extinguishment of a PRow following the early implementation of an alternative/new route (e.g. via a new overbridge/underbridge) (early re-provision); • Closure of/extinguishment of a PRow without re-provision (e.g. where works sequencing will not provide a new crossing in advance 	new routes) during operation.						

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<p>on the carriageway works) and/or permanent extinguishment of a PRoW (full closure).</p> <ul style="list-style-type: none"> Provision of new crossings/routes as part of the scheme (new routes). 							
PC2	Ch12	Vol 6 Doc 6.2	Provision of temporary alternative access arrangements in agreement with the receptor. This is to be detailed within a Traffic Management Plan.	To maintain access to existing tourism, private property and business receptors during construction.	Local traffic and NMUs will still require access around the area.	Implementation of measures outlined in Public Rights of Way Management Plan	Draft DCO Requirement 11 Draft Traffic Management Plan Vol 6, Doc Ref 6.4, Appendix 2.1	Principal Contractor	C	Signature: Date:
PC3	Ch12	Vol 6 Doc 6.2	Ensure land required for temporary works (e.g. construction compounds) is returned to its original use and condition (as a minimum).	To help ensure that long-term impacts from temporary works are mitigated.	Not applicable	Successfully implement Environmental Masterplans (Volume 6, Document Ref 6.2, Figure 7.6) design in line with the CEMP - supervision and review of planting works.	Article 33(4) of the draft DCO Draft DCO Requirement 5	To be implemented by the Principal Contractor and the scheme Landscape Architect.	C	Signature: Date:
PC4	Ch12	Vol 6 Doc 6.2	In areas of land which would be temporarily used, soils should be managed in accordance with DEFRA (2009) Construction Code of	Maintain the quality of soils.	Not applicable	Implementation of measures outlined in Annex C Outline Materials	Outline CEMP, Annex C Outline Materials Management Plan	Principal Contractor	P	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			Practice for the sustainable use of soils on construction sites.			Management Plan				
PC5	Ch12	Vol 6 Doc 6.2	Considerate construction management through noise mitigation outlined in NV1 to NV5, and dust mitigation outlined in AQ1 and AQ2.	To reduce or avoid indirect amenity effects relating to noise, dust and visual impacts associated with construction works, including the movement of construction vehicles.	Not applicable	National Considerate Constructor's Scheme and establish a forum to disseminate construction information to the consultees.	Outline CEMP, Annex K Outline Noise and Vibration Management Plan Outline CEMP Annex L Outline Air Quality Management Plan Draft Traffic Management Plan Vol 6, Doc Ref 6.4, Appendix 2.1	Principal Contractor	P, C	Signature: Date:
PC6	Ch12	Vol 6 Doc 6.2	Early consultation with bus operators and provision of advance travel information.	To reduce potential impacts on and help ensure continued operation of bus services with minimal disruption.	Local traffic will still require access around the area.	Not applicable	Draft Traffic Management Plan Vol 6, Doc Ref 6.4, Appendix 2.1	Principal Contractor	C, O	Signature: Date:
PC7	Ch12	Vol 6 Doc 6.2	Discuss and agree as appropriate the need for/provision of additional signage with Cornwall Council along the proposed scheme and its junctions to	Help mitigate reduced accessibility directly from the A30 (e.g. at Chybucca).	Not applicable	Not applicable	DCO Requirement 12 Legal agreement with	Principal Contractor	O	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			tourism and business receptors.				Cornwall Council			
PC8	Ch12	Vol 6 Doc 6.2	Provision of replacement open space land to the east of Carland Cross Junction as shown on the Special Category Land Plan – Vol 2, Doc Ref 2.3	To mitigate the loss of open space land as part of the proposed scheme.	Not applicable	Not applicable	Draft DCO Article 38 Vol 2, Doc Ref 2.3 Special Category Land	Principal Contractor	C, O	Signature: Date:
Road Drainage and the Water Environment										
RDWE 1	Ch13	Vol 6 Doc 6.2	The detailed design of new culverts shall ensure that: <ul style="list-style-type: none"> The base of the culvert is set >150mm below the existing bed of the watercourse with structures attached to the base of the culvert (e.g. wooden batons) to retain sediment within the full length of the culvert. Scour protection at the inlet or outlet uses bioengineering methods wherever practicable to maximise habitat potential; and A geomorphologist is consulted during 	To prevent the creation of a barrier to fish passage and to maintain sediment transport through the channel network.	Watercourses and sensitive ecological sites within the vicinity of the scheme.	Daily site audits.	Draft DCO Requirement 13 Outline CEMP, Annex G Outline Ground and Surface Water Management Plan	Principal Contractor	P, C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			the detailed design of these structures.							
RDWE 2	CH13	Vol 6 Doc 6.2	<p>The design of any new outfalls shall ensure that:</p> <ul style="list-style-type: none"> The headwall structure is set back from or flush with the channel profile and does not protrude into the channel; The outfall is angled to direct flow at an angle no greater than 60 degrees from the existing flow direction in the watercourse; Any scour protection surrounding the outfall headwall uses bioengineering methods wherever practicable to maximise habitat potential; and A geomorphologist is consulted during the detailed design of these structures. 	To prevent scour in existing watercourses and subsequent detriment to the quality of river habitat.	Watercourses and sensitive ecological sites within the vicinity of the scheme.	Daily site audits.	Draft DCO Requirement 13 Outline CEMP, Annex G Outline Ground and Surface Water Management Plan	Principal Contractor	P, C	Signature: Date:
RDWE 3	CH13	Vol 6 Doc 6.2	Where the potential for impacts to private water supplies remains	To prevent temporary or permanent impacts	Private water supplies within	Daily site audits.	DCO Requirement 12	Principal Contractor	A	Signature:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			unclear, a detailed assessment of groundwater levels and flows shall be undertaken during detailed design to fully understand the potential impact upon each feature of interest. Where, following this assessment, the potential for impact remains unclear or is certain, a new private water supply (e.g. a borehole) will be established following discussion with the landowner.	to existing private water supplies.	the vicinity of the scheme.					Date:
RDWE 4	CH13	Vol 6 Doc 6.2	Detailed assessment and monitoring of pond recharge mechanisms to be undertaken during detailed design. Any impacted ponds to be re-profiled to maintain their ecological and resource value.	To prevent an impact to or loss of the ponds, with detriment to existing water users and wider ecology.	Ponds of sensitive ecological value within the vicinity of the scheme.	Daily site audits.	DCO Requirement 12	Principal Contractor	P,C	Signature: Date:
Climate Change										
CC1	Ch14		Ensure climate change resilience planning for extreme weather events is undertaken during construction. These should include:	To minimise the impacts of extreme weather on construction.	Not applicable	Not applicable	Outline CEMP, Annex G Outline Ground and Surface Water	Principal Contractor	C	Signature: Date:

Ref	ES ref	DCO ref	Environmental action/commitment	Objective	Assumptions (on which the action is based)	Achievement criteria and reporting requirement (if applicable)	How the action/commitment will be implemented/secured	Responsible Person	When P = Pre-construction C = Construction O = Operation A = All	Completion Record
			<ul style="list-style-type: none"> • Check of medium-range weather forecasting service from the Met-Office to manage climate-related risks; • Register with the Environment Agency's Floodline Warnings Direct service. 				Management Plan.			

16.5 Consents, permissions, licences and agreements

Details of other Consents and Licences

- 16.5.1 The Details of other Consents and Licences (Volume 7 Document Ref 7.2) have been submitted as part of the Development Consent Order (DCO) which sets out the Highways England's intended strategy for obtaining the 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. It provides a list of other permissions and agreements that Highways England intends to obtain to allow for the construction, operation and maintenance of the scheme.
- 16.5.2 It sets out Highway England'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.

16.6 Environmental Asset Data and As Built Drawings

Highways England Environmental Information System

- 16.6.1 The Highways England Environmental Information System (EnvIS) consists of specific environmental data supplied by service providers, Highways England 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 Highways England.
- 16.6.2 The aim of EnvIS is to assist Highways England 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 Highways England 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.

Collection and submission of EnvIS data

16.6.3 Highways England's Interim Advice Note (IAN) (84/10)⁹ states that identifying and recording EnvIS data is an ongoing process. Service providers are required to submit EnvIS data, stored on their own system, in the form of environmental inventory and environmental management information records. For designers, the frequency of EnvIS data submission (to Highways England), should be in line with the end point of the following milestones:

- Development phase (Preliminary Design) – Environmental Assessment/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 project. Designers collect and submit EnvIS data detailing all Elements associated with the planning and design of the project 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 project prior to handover. Designers collect and submit EnvIS data detailing all Elements associated with the construction of the project 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.

16.6.4 At this stage of the project, EnvIS data will be submitted through the publication of the Environmental Statement as part of the DCO application. This will include the submission of all species surveys results undertaken to inform the Environmental Statement.

16.6.5 Surveys undertaken for the scheme to date can found in the Environmental Statement Volume 6 Document Reference 6.4 and are listed in table 16-4.

Table 16-4 List of species surveys undertaken at preliminary design

Type of Survey	DCO Volume 6 Document Reference
Arboricultural impact assessment	Document Ref 6.4 Appendix 7.6
Road traffic collision summary report	Document Ref 6.4 Appendix 8.1
2015 Phase 1 habitat verification survey report	Document Ref 6.4 Appendix 8.2
2017 Phase 1 habitat update survey report	Document Ref 6.4 Appendix 8.3
River habitat appraisal report	Document Ref 6.4 Appendix 8.4
Heathland and woodland NVC report	Document Ref 6.4 Appendix 8.5
Grassland NVC report	Document Ref 6.4 Appendix 8.6
Hedgerow survey report	Document Ref 6.4 Appendix 8.7
Terrestrial invertebrate survey report	Document Ref 6.4 Appendix 8.8
Freshwater macroinvertebrates survey report	Document Ref 6.4 Appendix 8.9

⁹ Available at: <http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian84pt1.pdf>
<http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian84pt2.pdf>
<http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian84pt3.pdf>
<http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian84pt4am2.pdf>

Type of Survey	DCO Volume 6 Document Reference
Fish survey report	Document Ref 6.4 Appendix 8.10
Reptile survey report	Document Ref 6.4 Appendix 8.11
Breeding bird survey report	Document Ref 6.4 Appendix 8.12
Wintering bird survey report	Document Ref 6.4 Appendix 8.13
Barn owl survey report	Document Ref 6.4 Appendix 8.14
Nightjar survey report	Document Ref 6.4 Appendix 8.15
Otter survey report	Document Ref 6.4 Appendix 8.16
Badger survey report	Document Ref 6.4 Appendix 8.17
Dormouse survey report	Document Ref 6.4 Appendix 8.18
Bat Roost Survey Report	Document Ref 6.4 Appendix 8.19
Bat Activity Survey Report	Document Ref 6.4 Appendix 8.20

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

16.7 Details of Maintenance and EMP monitoring Activities

16.7.1 This section lists systems of recording and inspections that will be required so as to maintain an audit trail of the environmental obligations, detailed in Table 3.1, of the scheme. This will be managed through the Quality and Safety Management Systems (QMS) and the Environmental Management System (EMS) of the Principal Contractor (PC) which will be certified in line with the ISO14001 standards.

16.7.2 The system will include methods for monitoring, recording and implementing environmental management on site, and for responding to any noted areas of non-compliance. This will ensure that a high standard of environmental control is maintained through the lifetime of the scheme through the corrective action system managed by the PC.

Environmental records inspections

16.7.3 The PC's Project Quality Administrator will ensure there is a central filing system in place for any checklists, reports and monitoring consistent with the Project QMS and EMS. Records of compliance with the requirements of the CEMP, derived from audits and other inspections, will be held at the PC's site office. These will be available for inspection by representatives of any internal or external audit team and the EA in their statutory role.

Daily Inspection Check List

16.7.4 The PC as site owner will ensure environmental mitigation and staff responsibilities are made clear to Site Managers, sub contracted staff and Site Supervisors. This will be managed through site inductions and specialist training as required. The PC shall make key staff aware of their responsibilities for undertaking daily routine checks of the site and equipment. It will be essential that the PC has processes and protocols in place for environmental aspects to be checked. The PC will insert their standard inspection forms and checklists that are associated with their internal EMS into the CEMP Appendices for information.

- 16.7.5 On completion of inspection and daily checks these will be logged and corrective actions implemented by the delegated Site Manager in discussion with the PC. The log will be reviewed as part of Highways England's checking and audit role.

Procedures to monitor compliance

- 16.7.6 An overall Project Record will be required for formal records associated with implementation of the CEMP. This should be managed and controlled within the standard PCF project filing systems.

Administration

- 16.7.7 The PC will be responsible for maintaining site based environmental records including coordination of environmental site checks / inspection records, monitoring (sampling, recording and subsequent actions), consents, permits, and waste transfer notes. The Appendices of the CEMP are live. The environmental records are to be scanned and filed electronically or filed in a hard copy of the live CEMP (subject to the PC internal filing systems). In the case of overlap with Health, Safety, Environment and Quality (HSEQ) files, these will be cross referenced within the updated CEMP back to HSEQ files held by the PC for any formal auditors to track and monitor compliance. This will be most likely in the case of handling and disposal of hazardous or contaminated waste and any chemicals and specialist materials subject to COSHH regulations.

Quality Management - Environmental Audit

- 16.7.8 As part of Quality, Environmental and Safety management systems it will be necessary for an audit to record environmental compliance. The Highways England Project Manager will instigate regular audits to report on compliance with the contract specification, environmental best practice and site specific method statements. This will include the review of the monitoring, recording and reporting procedures being maintained by the PC throughout the scheme.
- 16.7.9 For completeness, an auditor can only review and take account of the environmental information available at the time of the audit. The outcome of an audit is to identify environmental progress of the project and to issue a formal record in the form of an audit report. Any issues will be raised and dealt with at the time or a Corrective Action Request will be made for actions to be undertaken within a reasonable and timely manner.

Environmental Management Systems

- 16.7.10 EMS requirements will need to be maintained throughout the scheme. Contractors are required to be accredited or seeking to be accredited under ISO14001 as this indicates an understanding and implementation of an EMS for recording, monitoring and managing a project.
- 16.7.11 The level of environmental management will be monitored to assess compliance with the Contract and environmental standards through inspections, and audits. Subject to the contract arrangements, the responsibility for maintaining correspondence and day to day records will rest with the individual organisations and their internal systems. This includes original copies of correspondence and record copies of issued documentation together with records of subsequent changes. Copies are to be kept on site and circulated to appropriate personnel for action or information only.

Control Documents

- 16.7.12 All the PC Risk Assessments, Method Statements and COSHH forms must consider environmental impacts and sensitivities in addition to health and safety concerns.
- 16.7.13 This section will be updated prior to construction by the appointed Contractor to additionally include:
- Full details of monitoring and reviewing compliance with the CEMP, for example daily / weekly / monthly inspection / audit reports.
 - Assessment criteria to identify success.
 - Procedures for rectification of breaching or failings of EMP measures.

16.8 Induction, training and briefing procedures for construction staff

Introduction

- 16.8.1 A programme of training on environmental issues should be developed for delivery prior to and during the construction stage. On commencement of site mobilisation, the Principal Contractor (PC) will be the site owner and responsible for site inductions and training of all personnel on the site, whether visitors, full time staff or subcontractors
- 16.8.2 All individuals working on or visiting the site will be required to attend the Principal Contractor's site-specific induction. Those participating in or near to specific activities that have an environmental impact will be required to attend additional training or toolbox talks (TBTs), led by the PC or specialists, on ecology, pollution control, waste management and emergency procedures for minor and major incidents.
- 16.8.3 Specific training needs will be identified and provided for all personnel involved in work activities that could result in an adverse impact on the environment. The training will include reference to the importance of adhering to the contents of the CEMP 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 environmental management system.

Environmental competencies

- 16.8.4 The PC shall ensure all personnel conducting environmental tasks are suitably qualified or experienced for the roles and responsibilities that they are employed to undertake.
- 16.8.5 The PC will monitor and record that all staff have attended the relevant environmental induction or training as listed above (including updated or new training) prior to undertaking any activities on site.

Training and site induction

- 16.8.6 Prior to commencing work on site, all site personnel and visitors are to receive Site Safety induction and Environmental Awareness training from the PC. This will introduce accountability for personnel working on the Scheme. The list below is not exclusive but environmental training at Induction will at least include the following:
- Company/Project Environmental Policy.
 - Site environment;
 - Fuel containment.
 - Earthworks and Excavations (Risks of exposing contamination).
 - Pollution protocol and measures for example use of spill kits.
 - Defined Materials Storage area (excavated and imported).
 - Defined waste areas - Domestic and construction materials.
 - Wheel wash – road sweeping.
 - Dust and emissions control.
 - Noise control.
 - Vibration control.

- Site traffic protocols and routes in the form of a Traffic Management Plan - haul routes, staff travel to site plan.
- Warning signs.
- Site Inspection and monitoring forms.
- Material procurement.
- Toolbox talks where relevant to specific works.
- Communication Systems on site – dealing with the public, incident and near miss reporting inclusive of environment.
- Site organisation, key personnel responsibilities and contact details;
- Emergency Response Plan(s) for addressing Safety and Environmental issues.
- Contamination risk management.
- Update and maintain site specific toolbox talks or advisory sheets relevant to the project.

16.8.7 The list above is not exhaustive and the PC or Environmental Manager onsite must highlight requirements for additional training, as the project progresses, to improve and add value to the overall site environmental awareness and compliance. Additional training or induction issues would be identified from the regular site environmental check reports, or site feedback on any noted non-compliance. It is a requirement for the site to maintain the standard of environmental management and minimise risks that could negatively impact on the environment.

Toolbox talks and induction supporting materials

16.8.8 The PC and its sub-contractors will establish a regime of toolbox talks such that every employee receives a health, safety & environmental briefing as appropriate, with a target of a minimum of one toolbox talk on an environmental topic per month. For sub-contractors', their supervisors are responsible for conducting these briefings and their implementation will be monitored by the PC. Records must be kept of toolbox talks carried out and who attended them. Requests for new/specific toolbox talks can be made to the Environmental Manager.

16.8.9 Toolbox talks will also be posted within common use areas such as welfare units and office reception areas. Key environmental issues linked to the programme will be targeted on the daily notice board as an aide memoir to all staff on site for example seasonal environmental constraints such as bird nesting seasons.

16.8.10 An indicative list of appropriate toolbox talks is provided below. More may be added to this list as the project progresses and as issues arise.

- Dust and air quality;
- Silt management;
- Segregation and storage of waste;
- Archaeology;
- Spill control;
- Cement and concrete;
- Washing down plant and machinery;
- Invasive species;
- Nesting birds; and
- Protected species.

16.9 Glossary

Table 16-5 Glossary table

Glossary Term	Description
Affected Road Network (ARN)	Defined in Design Manual for Roads and Bridges Volume 11, Section 3, Part 1 Air Quality (DMRB HA207/07) (Highways Agency et al., 2007) as those roads within the traffic reliability area which in the scheme opening year meet specific criteria set out in the DMRB HA207/07.
Air Quality Plan	Documents setting out the UK's plan for reducing roadside nitrogen dioxide concentrations.
Assessment of Implications of European Sites (AIES)	Also known as Habitats Regulations Assessment (HRA). An assessment of the implications of highway construction or improvement projects on 'European Sites' where such sites are designated for their nature conservation interest.
Controlled waters	<p>These are fully defined in Section 104 of the Water Resources Act 1991. They include in summary:</p> <ol style="list-style-type: none"> 1. Relevant territorial waters which extend seaward for three miles from the low-tide limit from which the territorial sea adjacent to England and Wales is measured. 2. Coastal waters from the low-tide limit to the high-tide limit or fresh-water limit of a river or watercourse. 3. Inland freshwaters: <ul style="list-style-type: none"> • Natural and artificial lakes, ponds, reservoirs, rivers or watercourses above the fresh-water limit • Natural and artificial underground rivers and watercourses • Surface water sewers, ditches and soakaways that discharge to surface or groundwater • It also includes those that may be currently dry. 4. Groundwaters– any waters contained in underground strata.
Definitive Map	A definitive map is a map prepared by a surveying authority which is a legal record of the public's rights of way in one of four categories (footpath, bridleway, restricted byway or byway open to all traffic). If a way is shown on the map, then that is legal, or conclusive, evidence that the public had those rights along the way at the relevant date of the map (and has them still, unless there has been a legally authorised change). But the reverse is not true. So the showing of a way as a footpath does not prove that there are not, for example, additional unrecorded rights for horse-riders to use the way. Nor is the fact that a way is omitted from the definitive map proof that the public has no rights over it. ¹⁰
Department of Environment and Rural Affairs (DEFRA)	UK government department responsible for safeguarding the natural environment, supporting the food and farming industry, and sustaining a thriving rural economy.
Designated Environmentally Sensitive Sites	The Environmentally Sensitive Areas were introduced in 1987 to offer incentives to encourage farmers to adopt agricultural practices which would safeguard and enhance parts of the country of particularly high landscape, wildlife or historic value. The scheme has now closed to new applicants. Defra introduced a new Environmental Stewardship Scheme on 3 March 2005 which supersedes (with enhancements) the Environmentally Sensitive

¹⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/414670/definitive-map-guide.pdf

Glossary Term	Description
	Areas and Countryside Stewardship Schemes. There are 22 ESAs in England, covering some 10% of agricultural land. ¹¹
Designer	The organisation commissioned to undertake the various stages of scheme preparation and supervision of construction. This includes specialist subconsultants brought in to advise on specific areas of assessment and mitigation.
Design speed	The design speed is a tool used to determine geometric features of a new road design based on the anticipated vehicle speeds on the road.
Detailed assessment	Method applied to gain an in-depth appreciation of the beneficial and adverse consequences of the project and to inform project decisions. Detailed Assessments are likely to require detailed field surveys and/or quantified modelling techniques.
Development Consent Order (DCO)	A Development Consent Order is the means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects. This includes energy, transport, water and waste projects.
Do-Minimum	<p>The 'Do-Minimum' forecast scenario in the Opening / Design Year is the base road and traffic network against which alternative improvements can be assessed. In many cases, the definition of the 'Do- Minimum' is straightforward; it is simply the 'Do- Nothing' scenario. However, one or more of the following four cases may arise, in which the 'Do-Minimum' differs from the 'Do-Nothing':</p> <ul style="list-style-type: none"> i. The case where works will be carried out regardless of whether or not the 'Do- Something' scheme is built. ii. The case where the existing network may be improved to form a 'Do-Minimum' scheme which can be tested as an alternative to carrying out major Do-Something improvements. iii. The case where traffic conditions can be improved without significant capital expenditure. iv. The case where the area covered by the modelled network includes road proposals other than the one under immediate consideration.
Do-Nothing	The Do Nothing forecasting scenario is simply the existing network without modification in the Opening / Design Year.
Do-Something	The 'Do-Something' forecast scenario is the road proposal under consideration in the Opening /Design Year.
Environment Agency	The Environment Agency is responsible for environmental protection and regulation in England and plays a central role in implementing the government's environmental strategy. The Environment Agency is the main body responsible for managing the regulation of major industry and waste, treatment of contaminated land, waterquality and resources, fisheries, inland river, estuary and harbour navigations, and conservation and ecology. They are also responsible for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea.
Environment Agency Recorded Pollution Incidents	A record of pollution incidents to water, land and air held by the Environment Agency
Environmental Management Plan	An Environmental Management Plan (EMP) provides the framework for recording environmental risks, commitments and other environmental constraints and clearly identifies the structures

¹¹ <https://data.gov.uk/dataset/a5b0ccc4-a144-4027-91fa-49084ff07da2/environmentally-sensitive-areas-england>

Glossary Term	Description
	and processes that will be used to manage and control these aspects. The EMP also seeks to ensure compliance with relevant environmental legislation, government policy objectives and scheme specific environmental objectives. It also provides the mechanism for monitoring, reviewing and auditing environmental performance and compliance.
Flood Risk Assessment	An assessment of the likelihood of flooding in a particular area so that development needs and mitigation measures can be carefully considered.
HDVs	Heavy Duty Vehicles. As HGVs with the inclusion of buses and coaches.
HGVs	Heavy Goods Vehicles, over 3.5 tonnes and includes rigid and articulate lorries.
Historic England	The public body that looks after England's historic environment. Championing historic places and helping people understand their value and care for them.
Listed Building	A building which is considered by the Secretary of State (for Culture, Media and Sport) to be of special architectural or historic interest in accordance with the regime set out in the Town and Country Planning (Listed Buildings and Conservation Areas) Act 1990.
Local Authorities	An administrative body in local government
Local Authority Pollution Prevention Controls	Local authorities who regulate businesses are usually district or borough councils. If an area has only one council (a unitary council) then that's the regulator. The Port Health Authority may be the regulator in port areas. This guidance helps local authorities: <ul style="list-style-type: none"> • follow statutory guidance under regulation 64 of the Environmental Permitting Regulations (EPR) • understand the EPR's main functions, procedures and terminology¹²
Lowest Observed Adverse Effect Level (LOAEL)	This the level of noise above which adverse effects on health and quality of life can be detected.
National Air Quality Strategy (NAQS)	The Air Quality Strategy intends to provide a clear framework for improving air quality through
National Cycle Network (NCN)	The National Cycle Network is a series of safe, traffic-free paths and quiet on-road cycling and walking routes that connect to every major town and city.
National Parks (NP)	Protected areas because of their beautiful countryside, wildlife and cultural heritage.
National Planning Policy Framework (NPPF)	The National Planning Policy Framework sets out the Government's planning policies for England.
National Pond Survey	This is a national scheme to develop a classification of ponds in Britain based on the composition of their plant and macroinvertebrate communities
Natural England	Natural England are responsible for: <ul style="list-style-type: none"> • Helping land managers and farmers protect wildlife and landscapes. • Advising on the protection of the marine environment in inshore waters (0 to 12 nautical miles). • Improving public access to the coastline. • Managing 140 National Nature Reserves and supporting National Trails.

¹² <https://www.gov.uk/government/publications/local-authority-pollution-control-general-guidance-manual>

Glossary Term	Description
	<ul style="list-style-type: none"> • Providing planning advice and wildlife licences through the planning system. • Managing programmes that help restore or recreate wildlife habitats. • Conserving and enhancing the landscape. • Providing evidence to help make decisions affecting the natural environment.
Nature Conservancy	The Nature Conservancy is the leading conservation organization working around the world to protect ecologically important lands and waters for nature and people. ¹³
Noise Important Areas	These areas provide a framework for the local management of the Important Areas
Nationally Significant Infrastructure Projects (NSIP)	Any infrastructure project that is deemed, according to the criteria set in the Planning Act, 2008 (as amended) to be nationally significant. Such projects are authorised through a statutory process that requires an application for a DCO, rather than a conventional planning application or the traditional model through the publication of Statutory Orders and the holding of Public Inquiries.
NOx	Oxides of Nitrogen – which encompasses all nitrogen species although mainly NO and NO2.
Outline Construction Environmental Management Plan	A CEMP at outline stage which will later be refined and expanded into a full CEMP as more information becomes available and there is more certainty in terms of the proposed layout, construction methods, programme and the likely environmental effects.
Materials Management Plan	A materials management plan (MMP) is a mechanism by which those who are developing a site can comply with Environment Agency regulations for excavated ground materials ¹⁴
National Planning Policy Framework	A statement of central government guidance on planning policy, replacing the previous system of topic-specific Planning Policy Guidance Notes (PPGs) and Planning Policy Statements (PPSs).
Paris Agreement (Climate)	The Paris Agreement, Paris climate accord or Paris climate agreement, is an agreement within the United Nations Framework Convention on Climate Change dealing with greenhouse gas emissions mitigation, adaptation and finance starting in the year 2020.
Parish Councils	A parish council is a civil local authority found in England and is the lowest tier of local government. They are elected corporate bodies, have variable tax raising powers, and are responsible for areas known as civil parishes, serving in total 16 million people.
Planning Inspectorate (PINS)	On 1 April 2012, under the Localism Act 2011, the Planning Inspectorate became the agency responsible for operating the planning process for nationally significant infrastructure projects (NSIPs).
PM10	PM10 Particulate matter with a diameter of 10 microns or less
Pollution Prevention Guidelines	Practical advice and guidance for the prevention of pollution during construction and demolition projects. The guidance explains what is required by law and describes good practice measures to reduce the risks of a pollution incident.
Public Rights of Ways	A way over which the public have a right to pass and repass. The route may be used on foot, on (or leading) a horse, on a pedal cycle or with a motor vehicle, depending on its status. Although the

¹³ <https://www.nature.org/about-us/index.htm>

¹⁴ [https://www.designingbuildings.co.uk/wiki/Materials_Management_Plan_\(MMP\)](https://www.designingbuildings.co.uk/wiki/Materials_Management_Plan_(MMP))

Glossary Term	Description
	land may be owned by a private individual, the public may still gain access across that land along a specific route.
Road Investment Strategy (RIS)	The Road Investment Strategy outlines a long-term programme for England's motorways and major roads supported by stable funding needed to plan ahead.
Scheduled Monument	A scheduled monument is a historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Culture, Media and Sport under the regime set out in the Ancient Monuments and Archaeological Areas Act 1979.
Scheme Assessment Report	The main aims of the assessment reporting process are to permit consideration of the likely environmental, economic and traffic effects of alternative proposals, and to allow the public and statutory bodies to comment on proposals taking account of their environmental, economic and traffic implications. ¹⁵
Scoping Opinion	A written opinion of the relevant consenting authority, following a request from the applicant, as to the information to be provided in the Environmental Statement.
Settlement Profiles	Work has been undertaken recently in Cornwall to identify key facilities and services in a number of settlements across Cornwall. This information has been sent to Cornwall Council Members and every Parish Council for verification, and data has been updated where a response has been received, forming the 'Settlement profiles'. ¹⁶
Significant Observed Adverse Effect Level (SOAEL)	This is the level of noise above which significant adverse effects on health and quality of life occur.
Simple Assessment	Initial, brief assessment activity based on the assembly of data and information that is readily available, to fulfil one of the following functions: i. To address unknown aspects in the Scoping assessment level; ii. To reach an understanding of the likely environmental effects to inform the final design and assessment; or, iii. To reach an understanding of the likely environmental effects that identifies the need for a Detailed Assessment.
Site of Special Scientific Interest (SSSI)	An SSSI is a conservation designation denoting a protected area in the United Kingdom, designated due to special interest in its flora, fauna, geological or physiographical features. They are protected by law to conserve their wildlife or geology.
Site Waste Management Plan (SWMP)	SWMPs encourage the effective management of materials and ensure waste is considered at all stages of a project - from design through to completion. Although no longer a regulatory requirement in England, SWMPs are still considered to be good practice.
Special Area of Conservation (SAC)	A Special Area of Conservation is a site designated under the Habitats Directive. These sites, together with Special Protection Areas (or SPAs), are called Natura sites and they are internationally important for threatened habitats and species.
Special Protection Area (SPA)	A special protection area is a designation under the European Union Directive on the Conservation of Wild Birds. Under the Directive, Member States of the European Union (EU) have a duty

¹⁵ <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol5/section1/td3793.pdf>

¹⁶ <https://www.comwall.gov.uk/environment-and-planning/planning/planning-policy/adopted-plans/evidence-base/settlements/settlement-profiles/>

Glossary Term	Description
	to safeguard the habitats of migratory birds and certain particularly threatened birds.
Statement of Common Ground (SoCG)	A written statement prepared jointly by the applicant and another party or parties, setting out any matters on which they agree. In some cases, statements of common ground will also identify areas where agreement has not been reached.
The Consultation Report	<p>The Consultation Report is a report giving details of the consultation activity carried out by the A30 at the Pre-Application stage, in particular:</p> <ul style="list-style-type: none"> • what has been done to comply with the Planning Act 2008, including, s42 (consultation with prescribed consultees), s47 (consultation with the community), and s48 (publicity), • details of any relevant responses, and • the account taken of any relevant responses during the preparation of the application.
Unexploded ordnance	Unexploded ordnance, unexploded bombs, or explosive remnants of war are explosive weapons that did not explode when they were employed and still pose a risk of detonation, sometimes many decades after they were used or discarded.
United Nations Economic Commission for Europe (UNECE)	The United Nations Economic Commission for Europe (UNECE) was set up in 1947 it is one of five regional commissions of the United Nations.
Waste Hierarchy	The “waste hierarchy” ranks waste management options according to what is best for the environment. It gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill).
Waste Local Plan	Provides further information in support of the implementation of waste planning policy
World Health Organisation (WHO)	The World Health Organization is a specialized agency of the United Nations that is concerned with international public health.
Zone of Theoretical Visibility (ZTV)	This is the zone from which the scheme is theoretically visible over ‘bare earth.’
Zone of Visual Influence (ZVI)	The area within which a project may be visible and may influence the quality of views. The ‘zone of visual influence’ approximately covers all land from which the scheme is visible. It is limited by topographic features such as hill and valleys and by visual barriers such as woodland and buildings.

If you need help accessing this or any other Highways England information, please call **0300 123 5000** and we will help you.