

# **A303 Sparkford to Ilchester Dualling**

## **DCO Document 6.7**

### **Outline Environmental Management Plan**

**HE551507-MMSJV-EGN-000-RP-LP-0060**

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# 1 Introduction and background to the scheme

## 1.1 Purpose of this Outline Environmental Management Plan

- 1.1.1 This document is the Outline Environmental Management Plan (OEMP) for the A303 Sparkford to Ilchester Dualling scheme (hereafter referred to as ‘the scheme’). The purpose of the OEMP is to manage the environmental effects of the scheme as identified within Volume 6.1 of the Environmental Statement (ES) and to demonstrate compliance with environmental legislation.
- 1.1.2 This OEMP 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 2<sup>1</sup>, Manual of Contract Documents for Highways Works (MCDHW)<sup>2</sup> and Interim Advice Notes (IAN) 183/14 *Environmental Management Plans*<sup>3</sup> and IAN 182/14 *Major Schemes: Enabling Handover into Operation and Maintenance*<sup>4</sup>.
- 1.1.3 This OEMP 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 B.1 – Outline Site Waste Management Plan (OSWMP)
  - Annex B.2 - Outline Materials Management Plan (OMMP)
  - Annex B.3 – Outline Soils Management plan (OSMP)
  - Annex B.4 – Arboricultural Method Statement [Note: to be produced by the Principal Contractor (PC)]
  - Annex B.5 – Outline Traffic Management Plan
  - Annex B.6 – Communications Relations Strategy [Note: to be produced by the PC]
  - Annex B.7 – Landscape and Ecological Management Plan [Note: to be produced by the PC]

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<sup>1</sup> Highways England (2018) Design Manual for Roads and Bridges Volume 11 Section 2 *General Principles of Environmental Assessment* [online] available at: <http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section2.htm> (last accessed June 2018).

<sup>2</sup> Highways England (2014) Design Manual for Roads and Bridges, Manual of Contract Documents for Highway Works (MCHW) [online] available at: <http://www.standardsforhighways.co.uk/ha/standards/mchw/index.htm> (last accessed June 2018).

<sup>3</sup> Highways England (2014) Interim Advice Note 183/14 Environmental Management Plans [online] available at: <http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian183.pdf> (last accessed June 2018).

<sup>4</sup> Highways England (2014) Interim Advice Note 182/14 Major Schemes: Enabling Handover into Operation and Maintenance [online] available at: <http://www.mchwdmrb.com/ha/standards/ians/pdfs/ian182.pdf> (last accessed June 2018).

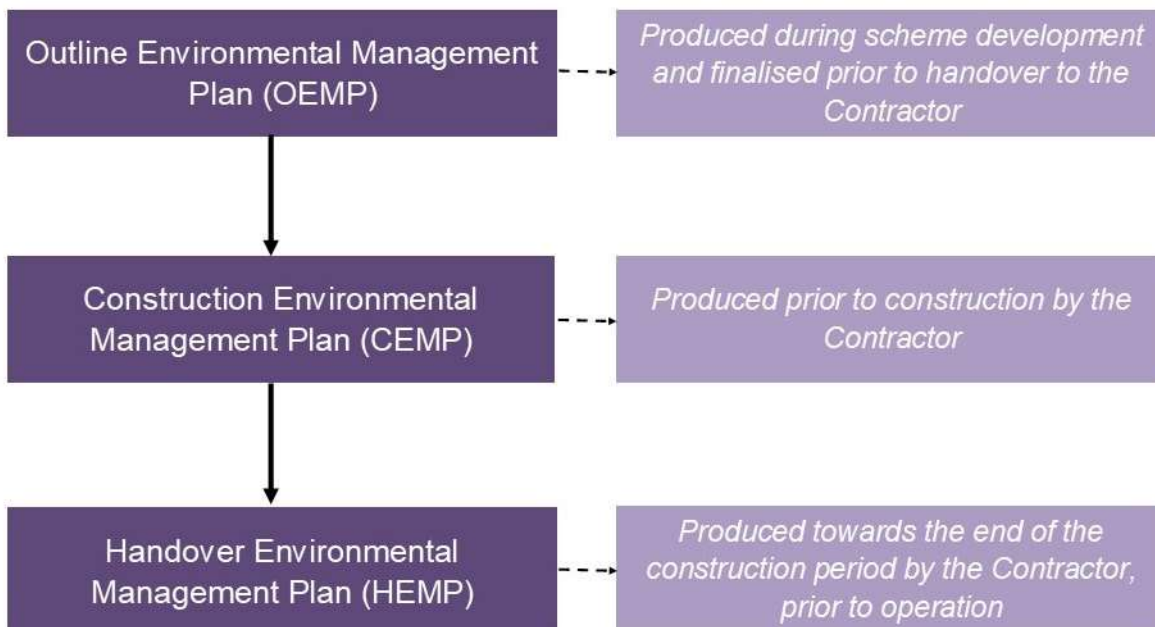
1.1.4 A full Construction Environmental Management Plan (CEMP) will be prepared by the PC once the design and construction plans have been finalised. The CEMP will be based on, and incorporate the requirements of the OEMP relevant to the construction phase, with the aim of controlling potential impacts upon the natural and historic environment, people and businesses. All contractors will be required to comply with applicable environmental legislation together with any additional environmental controls imposed in the DCO, and the requirements of the CEMP. The CEMP will be managed alongside the PC's Environmental Management System (EMS), meeting the International Organisation for Standardisation (ISO)14001 requirements.

1.1.5 On completion of construction, the PC will prepare a final version of the CEMP for the operational and maintenance phase of the scheme in the form of a Handover Environmental Management Plan (HEMP). The HEMP will be implemented by the maintenance authority responsible for the maintenance of the scheme during the operational phase. The need for and approval of these management plans is secured under Requirements 3 and 4 of the Development Consent Order.

1.1.5

1.1.6 This process is depicted in Figure 1.1 below.

Figure 1.1: Evolution of the OEMP



## Objectives of this OEMP

1.1.7 The overall objectives of this OEMP 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 OEMP and other relevant documents.

1.1.8 This OEMP 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 from commencement to completion and included -the following phases of construction:

- Demolition
- Prior to construction (for example advanced works)
- During construction (works)
- Post construction until completion (when the HEMP will replace it)

1.1.9 Throughout the OEMP, specific references are made to Schedule 8 Requirements and Protective Provisions within the ***Draft DCO (REP2version 0.5 submitted as part of Deadline 7-001)*** relating to relevant matters either prior to, during, or after construction.

1.1.10 [Note: Following receipt of the DCO for the scheme, the OEMP will be updated to reference specific Requirements relating to the various phases of construction.]

## 1.2 Overview of the scheme

### Existing corridor

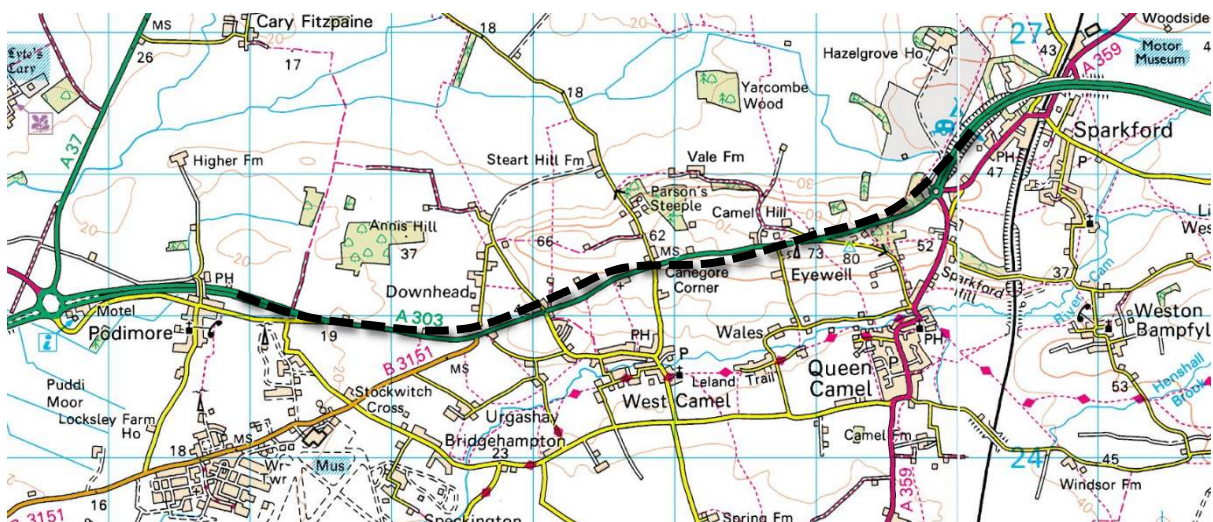
1.2.1 The existing A303 forms part of the Strategic Road Network (SRN) and a strategic link between the south west and the rest of the south, south-east and London. The A303 corridor comprises multiple road standards, including dual-carriageway, single-carriageway, and single-carriageway sections with overtaking lanes. Speed limits also vary between 40mph and 70mph, depending on the character of the road and its surroundings.

### Existing road



- 1.2.2 The section of the existing A303 that is being upgraded as part of this scheme commences at the eastern limits of the existing dual-carriageway of Podimore Bypass. Travelling east, the road reaches the junction with the B3151 before bearing north-east and rising upwards through Canegore Corner to reach the crest of Camel Hill at Eyewell. This section of the road is characterised by a single lane road, with double white lines negating overtaking and subject to a 50mph speed limit. There are several priority junctions along the route giving access to the settlements of Queen Camel and West Camel to the south and Downhead to the north, as well as several farm accesses and parking laybys.
- 1.2.3 From the crest of Camel Hill, the road descends to meet the roundabout at the western limit of the dual-carriageway of Sparkford Bypass (Hazlegrove Roundabout). This section comprises 2 lanes in the westbound direction, 1 lane in the eastbound direction and is also subject to a 50mph speed limit. Hazlegrove Roundabout forms a junction between the A303 and the A359 which runs south through Queen Camel and north-east through Sparkford. The roundabout also provides access to a service station, and to an independent preparatory school within the Registered Park and Garden of Hazlegrove House.
- 1.2.4 The section of the existing A303 that is being upgraded is 5.6 kilometres long.
- 1.2.5 The extents of the scheme are illustrated in Figure 1.1 below. Annex A shows the proposed red line boundary for the scheme.

Figure 1.1: Scheme extents



Source: Mott MacDonald Sweco Joint Venture

## Scheme proposals

- 1.2.6 The proposed scheme is to provide a continuous dual-carriageway linking the Podimore Bypass and the Sparkford Bypass. The scheme will involve the removal of at-grade junctions and direct accesses. The proposed Hazlegrove

Junction will be constructed to grade-separated standards and Downhead Junction and Camel Cross Junction will be constructed to compact grade-separated standards, as illustrated on **Figure 2.4 General Arrangement Plans (APP-102)**.

**4.2.61.2.7** The speed limit for the highway once open will be 70 miles per hour, and the area of the proposed scheme within the red line boundary is approximately 119 hectares.

**4.2.71.2.8** An **Environmental Masterplan** (**Environmental Statement Addendum Appendix B Figure A2.4 Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5 to 6 C04, Sheet 7 C03, submitted as part of Deadline 7 Figure A2.4 of OD-012**), has 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.

**4.2.81.2.9** A detailed description of the scheme is provided within Chapter 2 The Scheme of the **Environmental Statement (APP-039)** and **Chapter 2 of the Environmental Statement Addendum (OD-010)**.

## 1.3 Environmental context

- 1.3.1 The existing A303 corridor is the centre of the study area which runs from the north of Sparkford to the north of Podimore. The A303 transportation corridor is a discordant feature within a predominantly rural landscape. The A359 forms a lower grade transportation route in the eastern extents of the study area while the A37 lies just outside the study area to the west. A network of local support roads link farmsteads, small villages and clusters of houses within the study area.
- 1.3.2 Residential areas are predominantly concentrated to the south of the A303 and the study area, with the prominent historic villages of Sparkford, Queen Camel and West Camel. To the north of the A303 and the study area, residential properties comprise predominantly of isolated farmsteads and small collections of houses. Hazlegrove House Registered Park & Garden (RPG) and Hazlegrove School influences the character of the north-eastern section of the study area. Queen Camel and West Camel are designated as Conservation Areas around their characteristic historic core.
- 1.3.3 Land use has some variation across the study area but it is predominantly a mixture of arable and pastoral farming. Farmland north of the A303 mainly



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comprises large, irregular arable fields, whereas land to the south of A303 mainly comprises medium, irregular pastoral fields.

- 1.3.4 The Royal Naval Air Station (RNAS) at Yeovilton is a substantial conflicting feature in the southwest of the study area. Not only are the large warehouses, runways and military infrastructure at odds within the flat agricultural landscape, but the regular air traffic is a frequent disruptor of tranquillity in the area.
- 1.3.5 There is a well-connected network of Public Rights of Way (PRoW) within the study area, including parts of the Leland Trail long distance footpath which stretches from Alfred's Tower in Stoke sub Hamdon to Ham Hill in the Cranbourne Chase AONB. Although the Leland Trail to the south of the A303 is the most notable PRoW within the study area, other rights of way are distributed across the landscape.
- 1.3.6 The following statutory environmental designations are located within the vicinity of the scheme:
- There are 2 scheduled monuments (Romano-British settlement immediately south-west of Camel Hill Farm and Medieval settlement remains 100 metres and 250 metres north of Downhead Manor Farm) within 1 kilometre of the scheme.
  - The eastern end of the scheme will pass through the southern third of Hazlegrove House (Grade II Listed) Registered Park and Garden.
  - There are 2 conservation areas (Queen Camel and West Camel) within 1 kilometre of the scheme.
  - There are numerous Grade I, Grade II and Grade II\* Listed buildings within 1 kilometre.
  - There are 3 Special Areas of Conservation (SACs) (Mells Valley SAC, North Somerset and Mendip Bats SAC, and Bracket's Coppice SAC) designated for bat populations within 30 kilometres of the scheme.
  - There is 1 Site of Special Scientific Interest (SSSI) (Sparkford Wood) 1.3 kilometres north-east.
  - There is 1 designated ecological site (Whitesheet Hill SSSI) within 200 metres of the Affected Road Network (ARN).
- 1.3.7 The following non-statutory environmental designations are located within the vicinity of the scheme:
- There are 15 Local Wildlife Sites (LWSs) within 2 kilometres of the scheme.
  - There are 2 Local Geological Sites (LGSs) within 1 kilometre of the scheme.

- 1.3.8 The key environmental designations located within 2 kilometres of the scheme extents, or just outside, are shown on the environmental constraints plan contained within Annex A.

## 1.4 Scheme objectives

### Department for Transport objectives

- 1.4.1 The Department for Transport (DfT) has an aspiration for the SRN to be smoother, smarter and sustainable by 2040 (see Part 1, Chapter 2 of the [Road Improvement Investment Strategy \(RIS\)](#)<sup>5</sup>). The DfT aims to achieve this by focussing on 8 key performance areas as set out in Part 3, Chapter 1 of the RIS. These are:

- Making the network safer
- Improving user satisfaction
- Supporting the smooth flow of traffic
- Encouraging economic growth
- Delivering better environmental outcomes
- Helping cyclists, walkers and other vulnerable users of the network
- Achieving real efficiency
- Keeping the network in good condition

- 1.4.2 Further information is available in the RIS<sup>5</sup>.

### Highways England objectives

- 1.4.3 The objectives of the scheme as detailed in the ***Case for the Scheme (APP-149)*** are:

- Capacity – reduce delays and queues that occur during peak hours at seasonal times of the year.
- Safety – improve safety for all users of the A303 between Sparkford and Ilchester, as well as the wider A303 / A358 corridor.
- Support economic growth – facilitate growth in jobs and housing by providing a free-flowing and reliable connection between the south east and the south west.
- Environment – avoid unacceptable impacts on the surrounding natural and historic environment and landscape and optimise opportunities for enhancement.

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<sup>5</sup> DfT (2015) *Road Investment Strategy: 2015 to 2020* [online] available at: <https://www.gov.uk/government/collections/road-investment-strategy> (last accessed March 2018).

- Local communities – reduce community severance and promote opportunities for improving their quality of life.
- Connectivity – improve the connectivity of the south west to the rest of the UK and improve business and growth prospects.
- Resilience – improve journey time reliability and resilience, and provide extra capacity to make it easier to manage traffic when incidents occur.

## 2 Project team roles and responsibilities

### 2.1 Site roles and responsibilities

2.1.1 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.

### 2.2 Project management organisation

2.2.1 Overseeing management of the scheme will be directed by Highways England and any appointed Employer's Agent for the scheme. Highways England will delegate some site supervision roles such as the Engineering Clerk of Works and procure specialist consultants to supervise, monitor or check the PC's Method Statements and sensitive activities where required. The key scheme roles for Highways England and the PC are listed in Table 2.1. Individual names and contact details will need to be confirmed and inserted where applicable by Highways England and the PC once appointed and confirmed.

Table 2.1: General site contacts and responsibilities

Role	PCF Stage	Contact and Organisation	Telephone	Email
Highways England Project Manager	All	[TBC]	[TBC]	[TBC]
PC Environmental Manager	5/6	[TBC]	[TBC]	[TBC]
PC Environmental Clerk of Works	5/6	[TBC]	[TBC]	[TBC]
PC Environmental Specialist(s)	All	[TBC selected specialists]	[TBC]	[TBC]
Community Liaison Officer	5/6	[TBC]	[TBC]	[TBC]

2.2.2 [Note: Individual names and contact details will need to be inserted into Table 2.1 by Highways England and PC].

### 2.3 Environmental management responsibilities

2.3.1 The PC will have a contractual responsibility for producing the full CEMP once the design and construction plans have been finalised.

2.3.2 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.

2.3.3 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 2.2.

Table 2.2: Environmental management 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.
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.

2.3.4 The PC will have a contractual responsibility for preparing the HEMP on completion of construction, for handover to the managing agent.

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### **3 Record of environmental actions and commitments**

- 3.1.1 The Record of Environmental Actions and Commitments (REAC) contained in Table 3.1 identifies the environmental commitments included within the Environmental Statement (ES) to address the potential environmental effects of the scheme. This REAC is an integral part of this Outline Environmental Management Plan (OEMP) and will continue to be integral to the CEMP and HEMP throughout the progression of the scheme.
- 3.1.2 The REAC has been developed and refined throughout the pre-applications stage and Examination stage with input from key stakeholders through the Statement of Common Ground process.
- 3.1.3 The REAC will be further 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 3.1: Record of environmental actions and commitments

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
<b>General (G)</b>									
G1	ES – CH2 ( <b>APP-039</b> )	Hours of working	Construction work will take place between 07.00 and 18.00 on weekdays and from 07.30 to 13.00 on Saturdays, with no working on Sundays, Bank and Public Holidays. There may be exceptions to these hours to accommodate elements such as oversized deliveries and tie-in works, likely to involve a maximum of 4 full weekend closures. Exceptions to working hours detailed above will be agreed in writing with South Somerset District Council.	Not applicable	Daily site audits.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor.	P and C	Signature:  Date:
G2	ES –CH8 ( <b>APP-045</b> )	Protection of protected species during construction	During construction, toolbox talks or other instruction methods will be undertaken to allow operatives to: <ul style="list-style-type: none"> <li>Identify habitats suitable for protected species, individual species themselves, and measures for when these are encountered.</li> </ul> These toolbox talks will be included within the CEMP.  In the event that any protected or priority species which were not previously identified in the environmental statement (or any nesting birds) are found during construction activities, works in the vicinity of the identified species must cease and it be reported immediately to the Ecological Clerk of Works.	Phase 2 ecology surveys indicate presence of protected species.	Agree methods with Natural England where applicable. Protection measures undertaken in accordance with agreed methods.	Contractual responsibilities between Highways England and Principal Contractor, and Requirements of the DCO.	Principal Contractor.	P and C	Signature:  Date:
G3	ES – CH2 ( <b>APP-039</b> )	Avoidance of double handling of materials	Material deliveries will be programmed on an 'as required' basis to avoid temporary storage and double handling.	Not applicable	Daily site audits.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor.	P and C	Signature:  Date:
G4	ES – CH2 ( <b>APP-039</b> )	Reduce light disturbance for sensitive receptors.	Construction: <ul style="list-style-type: none"> <li>Lighting will be directional, and positioned sympathetically, to minimise light spill and disturbance for sensitive receptors.</li> <li>Lighting would be at the minimum luminosity necessary and use low energy consumption fittings. Where appropriate, lighting would be activated by motion sensors to prevent unnecessary usage. It would comply with the Institute of Lighting Professionals Guidance Notes for the Reduction of Obtrusive Light GN01<sup>6</sup> and the provisions of BS 5489,</li> </ul>	Sensitive receptors within the vicinity of compounds and storage areas.	Inspection during installation of lighting.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor.	C	Signature:  Date:

<sup>6</sup> Institute of Lighting Professionals (2011) Guidance notes for the reduction of obtrusive lights [online] available at: <https://www.theilp.org.uk/documents/obtrusive-light/> (last accessed May 2018).

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			Code of practice for the design of road lighting <sup>7</sup> , where applicable. Operation <ul style="list-style-type: none"> <li>The main A303 carriageway will not be lit. No local roads would be lit except for the existing Hazlegrove Roundabout and its approaches. At Hazlegrove Roundabout, each column shall be fitted with an LED P850 lantern. Each lantern shall be luminous intensity class G6, tilted at zero degrees.</li> <li>Hazlegrove Underbridge will be lit during the day time only.</li> </ul>						
G5	ES – CH2 ( <b>APP-039</b> )	Protection of local network.	Wheel washing facilities will be installed at all compounds and material storage areas to mitigate the risk of construction material fouling the local network. This may involve a simple coarse gravel running surface or jet wash, or in the case of a heavily used exit point, wheel washers.	The local road network is used regularly.	Installation and use of facilities.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor.	C	Signature:  Date:
G6	ES – CH2 ( <b>APP-039</b> )	Ensure positive community relations.	Prior to construction, the contractor will register with the National Considerate Constructor's Scheme and establish a forum to disseminate construction information to the Statutory Authorities, advisory bodies, landowners, parish councils, local interest groups and the general public, in line with the stakeholder communications plan. A Community Relations Officer will be appointed who will be responsible for these specific tasks. In cases where the construction works have an impact on neighbouring properties, businesses and buildings as identified within Chapters 5 to 14 of the ES, the occupants of these premises will be advised of these works no later than 6 weeks prior to their occurrence. The frequency of these meetings will be determined in consultation with South Somerset District Council and the PC.	Not applicable	National Considerate Constructor's Scheme and establish a forum to disseminate construction information to the consultees.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor.	P and C	Signature:  Date:
<u>G7</u>	<u>N/A</u>	<u>To ensure all proposed environmental mitigation elements retain their function notwithstanding any design amendments within the vertical</u>	<u>Construction to take place in accordance with the Works Plans (REP5-003) and Environmental Masterplan (Environmental Statement Addendum Appendix B Figure A2.4 Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5 to 6 C04, Sheet 7 C0, submitted as part of Deadline 7) and written landscaping scheme (as approved under Requirement 5 of the DCO).</u>	<u>Potential for mitigation bunds to lose their function as noise / landscape / visual screening.</u>	<u>Compliance with the Works Plans (REP5-003), Environmental Masterplan (Environmental Statement Addendum Appendix B Figure A2.4 Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5</u>	<u>Contractual responsibilities between Highways England and Principal Contractor, and Requirements of the DCO</u>	<u>Principal Contractor</u>	<u>C</u>	<u>Signature:</u>  <u>Date:</u>

<sup>7</sup> British Standards Institution (2013) BS 5489, Code of practice for the design of road lighting. Lighting of roads and public amenity areas [online] available at: <https://shop.bsigroup.com/ProductDetail/?pid=00000000030217237> (last accessed May 2018).

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
		and horizontal limits of deviation. This includes the heights of proposed mitigation bunds, which are tied to the height of the carriageway so that the height of the bund is always maintained in relation to the height of the carriageway.			to 6 C04, Sheet 7 C03, submitted as part of Deadline 7) and the landscaping scheme approved under Requirement 5 of the DCO.				
<b>Air Quality (AQ)</b>									
AQ1	ES - CH5 (APP-042)	To limit and control emissions to air during construction.	Works will be carried out in accordance with the best practicable means, as described in Section 79 (9) of the Environmental Protection Act 1990, to reduce fumes or emissions which may impact upon air quality. This will include: <ul style="list-style-type: none"> <li>Minimise height of stockpiles and profile to minimise wind-blown dust emissions and risk of pile collapse.</li> <li>Locate stockpiles out of the wind (or cover, seed or fence) to minimise the potential for dust generation.</li> <li>Ensure that all vehicles with open loads of potential dusty materials are securely sheeted or enclosed.</li> <li>Enforce a maximum speed limit of 15mph on surfaced roads and a 10mph speed limit on unsurfaced haul roads and work areas, to prevent the generation of dust by fast moving vehicles.</li> <li>Damp down surfaces in dry conditions.</li> <li>Water should be sprayed during cutting / grinding operations (such as cutting curb slabs).</li> <li>All vehicle engines and plant motors shall be switched off when not in use.</li> <li>High dust generating activities within site compounds should be located as far away from nearby receptors as possible.</li> </ul>	Community receptors, and ecological designated sites sensitive to changes in NOx concentrations within the vicinity of the scheme.	Daily site audits.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor.	C	Signature:  Date:
<b>Cultural Heritage (CH)</b>									
CH1	ES - CH2 (APP-043)	Protection of archaeological remains during construction.	The temporary site compounds will be prepared by the removal of <del>vegetation-topsoil</del> and overlaying with geotextile membrane prior to placement of temporary granular fill material. For the section of the haul route that runs adjacent to the Camel Hill Scheduled	Based on the results of the geophysical surveys this locality has the potential for high value buried archaeology.	Inspection during installation. Daily site audits.	Contractual responsibilities between Highways England and	Principal Contractor.	C	Signature:  Date:

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			Monument, the ground will be raised through the installation of geotextile, <del>over the existing ground</del> following topsoil strip, prior to the placement of temporary granular fill material. On completion of the scheme, these compound areas will be restored to their original condition, before being returned to the landowner or incorporated into the environmental mitigation proposals.			the Principal Contractor.			
CH2	ES – CH2 ( <b>APP-043</b> )	Protection and reinstatement of heritage asset during construction (Howell Hill stone boundary wall).	Where Howell Hill stone wall (a linear feature forming the eastern boundary to the highway) is removed to make way for permanent works related to the scheme, stone will be set aside to be reused in construction of the scheme. The location and method of construction will be decided in consultation with SSDC. Recording of the length of wall to be removed will be carried out in line with the methodology set out in the OHWSI.  Where the wall is to be removed for temporary works during construction it will be reinstated in the same location. The method of reconstruction will be decided in consultation with South Somerset District Council.	Potential for loss of feature which contributes to local historic landscape character.	Recording of length of wall to be removed. Reuse of removed stone within the scheme. Reconstruction of temporarily removed length of wall in a historically sensitive manner.	Contractual responsibilities between Highways England and the Principal Contractor, and Requirements of the DCO	Principal Contractor	C	Signature:  Date:
CH3	ES – CH 6 ( <b>APP-043</b> )	Protection of Camel Hill Scheduled Monument during construction	Protection fencing and a buffer zone around Camel Hill Scheduled Monument to be erected prior to construction, following consultation on the type of fencing, location of fencing, extent of buffer zone, and methodology of erection, maintenance and removal, with Historic England and Somerset County Council. The fence is to be located outside of the footprint of the designated area. The fencing and buffer zone is to remain in place throughout construction.	Informed by the results of the full geophysical surveys and the results of archaeological evaluation adjacent to the scheduled monument as this locality has the potential for high value buried archaeology. Potential for asset to be damaged during construction due to proximity to the scheme.	Consultation on protection methodology with local authority archaeological advisor and Historic England. Protection measures installed, maintained and removed in line with agreed methodology.	Contractual responsibilities between Highways England and Principal Contractor, and Requirements of the DCO.	Principal Contractor	P and C	Signature:  Date:
CH4	ES – CH 6 ( <b>APP-043</b> )	Protection and reinstatement of listed milestone during construction	If the milestone is located during works prepare a methodology detailing the recording, removal, safe storage, restoration and reinstatement of the grade II listed milestone at Canegore Corner (National Heritage List for England (NHLE) reference 1345996) following.. This methodology, including the proposed location of the milestone will be prepared in consultation with Somerset County Council, Historic England and South Somerset District	Listed milestone requires removal.	Record, remove, store and reinstate milestone	Contractual responsibilities between Highways England and the Principal Contractor, and Requirements of the DCO.	Principal Contractor	P and C	Signature:  Date:

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			<p>Council. The work is to be carried out in accordance with this methodology.</p> <p><u>If the milestone is not recovered during works, consultation will be undertaken with South Somerset District Council and Historic England regarding potential mitigation. This will focus on the significance of the milestone through its function and context as a marker of the former turnpike route. This will focus on the significance of the milestone through its function and context of a marker of the former turnpike route. Mitigation could include a record of the milestone from existing material and site survey, a replica milestone, or a modern interpretation of the milestone. Highway safety will be a key consideration in terms of agreeing the design and location of any proposed solution.</u></p>						
CH5	ES – CH 6 ( <b>APP-043</b> )	Protection of archaeological remains related to Hazlegrove House RPG during construction.	Protection fencing and a buffer zone around the areas of driveway earthworks to be retained within the Hazlegrove House RPG to be erected prior to construction. This will be erected following consultation on the type of fencing, location of fencing, extent of buffer zone, and methodology of erection, maintenance and removal, with Historic England, the Gardens Trust, and the Somerset County Council. The fencing and buffer zone is to remain in place throughout construction.	Based on the results of the geophysical surveys this locality has the potential for high value buried archaeology.	Consultation on protection methodology with local authority archaeological advisor. Protection measures installed, maintained and removed in line with agreed methodology.	Contractual responsibilities between Highways England and the Principal Contractor, and Requirements of the DCO.	Principal Contractor	P and C	Signature:  Date:
CH6	ES – CH 6 ( <b>APP-043</b> )	Protection of heritage assets during construction (Royal Observer Core at Camel Hill)	Protection fencing and a buffer zone around the areas the Royal Observer Corps at Camel Hill to be erected during construction, following consultation on the type of fencing, location of fencing, extent of buffer zone, and methodology of erection, maintenance and removal, with South Somerset District Council. The fencing and buffer zone is to remain in place throughout construction.	Potential for asset to be damaged during construction due to proximity to the scheme.	Consultation on protection methodology with local authority archaeological advisor. Protection measures installed, maintained and removed in line with the methodology.	Contractual responsibilities between Highways England and the Principal Contractor, and Requirements of the DCO.	Principal Contractor	P and C	Signature:  Date:
CH7	ES - CH 6 ( <b>APP-043</b> )	Preservation by record of archaeological remains.	Prepare an archaeological Written Scheme of Investigation (WSI) (based on the Outline Heritage WSI to be submitted during the DCO Examination) in consultation with Somerset County Council, South Somerset District Council and Historic England. Undertake the archaeological works as described within the WSI. The WSI should include any mitigation or recording identified as a result of the evaluation work. The archaeological works may take the form of archaeological excavation and / or strip map and <del>sample record recording</del> and / or <del>watching brief</del> <u>archaeological monitoring</u> . The works will be monitored by the Somerset	Based on the results of the geophysical surveys this locality has the potential for high value buried archaeology.	Consultation with the Local Authority Archaeological Advisor and Historic England. Production of a WSI. Appointment of an archaeological sub-contractor to undertake the agreed works. Publication of results of the archaeological work.	Contractual responsibilities between Highways England, the detailed design consultant and Principle Contractor, and Requirements of the DCO.	Detailed design consultant and Principal Contractor	P and C  (Reporting may continue into the operation phase.)	Signature:  Date:



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			County Council. A report will be produced and published for the results of the mitigation; these will require approval from the local authority archaeological advisor.						
CH8	ES - CH 6 ( <b>APP-043</b> )	Preservation by record of archaeological remains (driveways at Hazlegrove RPG).	Within Hazlegrove House RPG, the remains of the driveways that will be removed by the scheme will be subject to archaeological recording in line with the WSI.	Based on the results of the geophysical surveys this locality has the potential for high value buried archaeology.	Works to be undertaken by an archaeological sub-contractor in line with the methods outlined in the WSI. Publication of results of archaeological work.	Contractual responsibilities between Highways England and the Principal Contractor, and Requirements of the DCO.	Principal Contractor	C	Signature:  Date:
CH9	ES - CH 6 ( <b>APP-043</b> )	Reduce adverse views from Hazlegrove House RPG	The layout of the soil storage area at Hazlegrove House RPG to be designed in such a way to minimise the impact on static views south west from the house and kinetic views moving south west through the parkland. This will include the location of areas and functions of the storage area and screening by way of suitable fencing or timber hoardings. The design of the soil storage area will be prepared in consultation with SSDC, The Gardens Trust and Historic England prior to construction.	The RPG is highly sensitive to change.	Sensitive layout of construction compound and soil storage areas.	Contractual responsibilities between Highways England and the Principal Contractor, and Requirements of the DCO.	Principal Contractor	C	Signature:  Date:
CH10	ES - CH 6 ( <b>APP-043</b> )	Protect the character of Hazlegrove House RPG.	The landscape scheme at Hazlegrove House RPG including screening, landscape planting, erection of fences, surfacing and appearance of the balancing pond should reflect the parkland character of the RPG. This includes location of planting and species to be used. The landscaping scheme including maintenance will be prepared in consultation with SSDC, The Gardens Trust and, Historic England prior to undertaking any landscape works within the RPG.	The RPG is highly sensitive to change.	Implementation and maintenance of the planting scheme in consultation with South Somerset District Council, The Gardens Trust and Historic England.	Contractual responsibilities between Highways England and the Principal Contractor, and Requirements of the DCO	Principal Contractor	A	Signature:  Date:
CH11	ES - CH 6 ( <b>APP-043</b> )	Protect the setting of and archaeological remains associated with Medieval settlement remains 100m and 250m north of Downhead Manor Farm scheduled monument	No excavation will be undertaken to install the ecological mitigation area to the east of Downhead. The fence will take the form of a hand driven post fence. The design and method of installation of the fencing will be prepared in consultation with Historic England and Somerset County Council prior to its installation.	The Scheduled Monument is highly sensitive to change	Installation of the ecological mitigation area in consultation with Historic England and Somerset County Council.	Contractual responsibilities between Highways England and the Principal Contractor, and Requirements of the DCO	Principal Contractor	A	Signature:  Date:
CH12	ES - CH 6 ( <b>APP-043</b> )	Protection of heritage assets during construction (Milestone on	Protection fencing and a buffer zone around the areas the Milestone on B3151 at NGR ST56382471 to be erected during construction, following consultation on the type of fencing, location of fencing, extent of buffer zone, and methodology of erection,	Potential for asset to be damaged during construction due to size and proximity to the scheme.	Consultation on protection methodology with South Somerset District Council. Protection measures installed, maintained and	Contractual responsibilities between Highways England and the Principal	Principal Contractor	P and C	Signature:  Date:



Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
		B3151 at NGR ST56382471)	maintenance and removal, with South Somerset District Council. The fencing and buffer zone is to remain in place throughout construction.		removed in line with methodology.	Contractor, and Requirements of the DCO			
CH13	ES Addendum - CH 4 (OD-010)	Protection of heritage assets during construction (Eyewell)	Protection fencing and a buffer zone around the Eyewell to be erected during construction, following consultation on the type of fencing, location of fencing, extent of buffer zone, and methodology of erection, maintenance and removal, with the South Somerset District Council Conservation Officer. The fencing and buffer zone is to remain in place throughout construction.	Potential for asset to be damaged during construction due to size and proximity to the scheme.	Consultation on protection methodology with South Somerset District Council Protection measures installed, maintained and removed in line with methodology.	Contractual responsibilities between Highways England and the Principal Contractor, and Requirements of the DCO	Principal Contractor	P and C	Signature:  Date:
CH14	ES - CH 6 (APP-043)	<u>Unexpected archaeological finds during construction.</u>	<u>An unexpected finds protocol will be written and implemented to deal with archaeology unexpectedly uncovered during construction, including treasure. This will set out the process of notification, recording and reporting for unexpected finds.</u>	<u>Potential for unexpected archaeological finds to not be recorded in line with national legislation and policy.</u>	<u>Consultation on unexpected finds protocol with South Somerset District Council and Historic England prior to construction. Implementation of protocol during construction.</u>	<u>Contractual responsibilities between Highways England and the Principal Contractor, and Requirements of the DCO</u>	<u>Principal Contractor</u>	<u>P and C</u>	<u>Signature:</u>  <u>Date:</u>
<b>Landscape (L)</b>									
L1	ES - CH7 (APP-044)	To limit visual intrusion and impacts upon landscape character during construction.	The following measures to be undertaken to reduce visual intrusion and impacts upon the landscape throughout construction: <ul style="list-style-type: none"> <li>Keep a well-managed and tidy site.</li> <li>Welfare units and temporary site offices in a colour that will aid integration with the surrounding landscape where possible.</li> <li>Boundary fencing or timber hoarding (2 metres in height) will be erected around all compounds and material storage areas.</li> </ul>	Sensitive landscape and visual receptors within close proximity to construction activities.	Daily Site Audits.	To be implemented by the Principal Contractor.	Principal Contractor.	C	Signature:  Date:
L2	ES - Appendix 7.1 <i>Arboricultural Constraints Report (APP-069)</i> and Appendix 7.3 <i>Arboricultural Impact Assessment (AIA) (APP-071)</i>	To limit the impact of construction on existing trees and vegetation to be retained	Erection and maintenance of tree protection fencing in compliance with the Arboricultural Method Statement (Annex B.6 of this report) and BS5837:2012 (Trees in relation to design, demolition and construction – Recommendations) during the construction period. This should include: <ul style="list-style-type: none"> <li>Check the robustness and positioning of tree protection fencing.</li> <li>Check that no materials or plant are stored within the tree protection fencing.</li> </ul>	Not applicable	Daily Site Audits and the reference to and adherence with the Arboricultural Method Statement (to be produced).	To be implemented by the Principal Contractor and the scheme arboriculturalist.	Principal Contractor and the scheme arboriculturalist.	C	Signature:  Date:
L3	ES – CH7 (APP-044)	To limit visual intrusion and impacts upon landscape character during operation	Mitigation planting areas to be maintained for a period of 5 years from completion of the scheme. This will be detailed in the Landscape and Ecological Management Plan (LEMP). The LEMP should include the required management regime for the	Sensitive landscape and visual receptors and ecology receptors within close proximity to the scheme.	Successfully implement Environmental Masterplan ( <a href="#">Environmental Statement Addendum Appendix B Figure A2.4</a> )	To be implemented by the Principal Contractor and the scheme	Principle Contractor and scheme landscape architect.	O	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			grassland areas within the red line boundary to increase biodiversity.		<a href="#">Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5 to 6 C04, Sheet 7 C03, submitted as part of Deadline 7 Figure 2.8, APP-107</a> design in line with LEMP and the CEMP - supervision and review of planting works.	Landscape Architect.			
<a href="#">L4</a>	<a href="#">Deadline 6 Report (REP6-007)</a>	<a href="#">To retain long distance views from Slate Lane to the south</a>	<a href="#">A review of the landscape design as part of the environmental masterplan to be undertaken to ensure the retention of long-distance views from the PRow along Slate Lane looking south. It will be important to ensure that these long-distance views are designed whilst still ensuring that the landscape screening of views to the proposed Downhead Junction are retained. Consultation with South Somerset District Council's Landscape Architect to be undertaken as part of the detailed design when retaining these long-distance views is required.</a>	<a href="#">Visual receptors along Slate Lane who are afforded long-distance views across to the south</a>	<a href="#">Successfully implement Environmental Masterplan (Environmental Statement Addendum Appendix B Figure A2.4 Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5 to 6 C04, Sheet 7 C03, submitted as part of Deadline 7) design in line with LEMP and the CEMP - supervision and review of planting works.</a>	<a href="#">To be implemented by the Detailed Designer</a>	<a href="#">Detailed Designer</a>	<a href="#">O</a>	<a href="#">Signature:</a>  <a href="#">Date:</a>
<a href="#">L5</a>	<a href="#">Deadline 6 Report (REP6-007)</a>	<a href="#">To reduce adverse visual effects from the vicinity of Camel Hill Farm and the perception of the area with travellers on the A303</a>	<a href="#">Investigate other means of screening the proposed A303 from Camel Hill farm that would be more in keeping with the rural character, such as a stone-faced bund. Consultation with South Somerset District Council's Landscape Architect to be undertaken as part of the detailed design when designing the visual screening in this location.</a>	<a href="#">Visual receptors would experience adverse effects from a wooden environmental barrier</a>	<a href="#">Successfully implement Environmental Masterplan (Figure 2.8, APP-107) design in line with LEMP and the CEMP - supervision and review of planting works.</a>	<a href="#">To be implemented by the Detailed Designer</a>	<a href="#">Detailed Designer</a>	<a href="#">O</a>	<a href="#">Signature:</a>  <a href="#">Date:</a>
<a href="#">L6</a>	<a href="#">Deadline 6 Report (REP6-007)</a>	<a href="#">To ensure the bridges are in keeping with the local character of the area</a>	<a href="#">Investigate the design of the proposed bridges at Hazlegrove and Downhead Junctions to ensure they are more reflective of the local landscape or the A303 corridor. This should be undertaken in consultation with South Somerset District Council, who have suggested the use of local stone facing panels or pier substructures.</a>	<a href="#">The bridges would have an adverse effect on the character of the local area</a>	<a href="#">Compliance with the detailed design.</a>	<a href="#">To be implemented by the Detailed Designer</a>	<a href="#">Detailed Designer</a>	<a href="#">O</a>	<a href="#">Signature:</a>  <a href="#">Date:</a>
<b>Biodiversity (B)</b>									
B1	ES - CH8 (APP-045)	Protection and creation of priority habitats	During works: <ul style="list-style-type: none"> <li>Where hedgerows are required to be removed to facilitate the works, these will be replaced within the same location and any existing gaps planted with appropriate native species. Topsoil, containing the seedbank, will be translocated from the woodland within Hazlegrove RPG (works numbers 100 and 101 on the works plans, AS-004)</li> </ul>	Loss of priority habitats as a result of the scheme	Compliance with the <a href="#">Environmental Masterplan (Environmental Statement Addendum Appendix B Figure A2.4 Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5</a>	Contractual responsibilities between Highways England and Principal Contractor, and their Environmental Consultant.	Principal Contractor	C and O	<a href="#">Signature:</a>  <a href="#">Date:</a>

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			<p>and used within the new areas of woodland creation, notably the area either side of Pepper Hill Copse.</p> <ul style="list-style-type: none"> <li>Minimal topsoil to be applied for all grassland areas to encourage the establishment of nutrient poor species rich grassland. <u>Wherever it is possible for this habitat type to establish without any topsoil (dependant on the substrate beneath) none would be applied. Application of topsoil increases nutrient levels within the soil, which has a detrimental effect on species diversity and therefore it will be applied only where necessary, such as where the below substrate would not adequately support grassland habitat.</u></li> <li>To mitigate the loss of 12 veteran trees, the intact hulk of the veteran tree should be felled and relocated in close proximity to a nearby veteran tree, woodland or parkland area. This will provide an opportunity for those invertebrates and fungi resident within the tree to relocate, provided there is suitable habitat nearby and will ensure that the hulk of the tree continues to provide deadwood resource in the future.</li> <li>Works to install vehicular access across the ditch within the main compound area would be supervised by an Ecological Clerk of Works to ensure that access is positioned in the most appropriate place to minimise potential habitat degradation.</li> <li>Once works have been completed, the ditch habitat would be reinstated and enhanced. This would include removal of any material used to construct the crossing and planting of aquatic and marginal vegetation in line with the landscape masterplan.</li> </ul> <p>During operation:</p> <ul style="list-style-type: none"> <li>'Cut and remove' to be employed for grassland management (including amenity grassland) to reduce nutrient levels and increase diversity.</li> </ul>		to 6 C04, Sheet 7 C03, submitted as part of <u>Deadline 7) Masterplan (Figure 2.8, APP-107)</u> , CEMP and LEMP.				
B2	ES – Confidential Badger Report which will be issued to the PC.	Protection of badgers	<p>Before works:</p> <ul style="list-style-type: none"> <li>In advance of construction works commencing on site, a badger survey would be undertaken to ensure that the status of the setts remains the same and also to identify any additional setts which</li> </ul>	Badgers are still present within the setts identified during the Phase 2 ecology surveys and no new setts have established within 30m of the scheme.	Compliance with Badger Mitigation outlined in the <u>Environmental Masterplan (Environmental Statement Addendum Appendix B Figure A2.4</u>	Contractual responsibilities between Highways England and Principal Contractor, and their	Principal Contractor	P, C and O	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			<p>may have been excavated within the construction footprint since.</p> <ul style="list-style-type: none"> <li><u>The following works will be completed under a Natural England development licence:</u> <ul style="list-style-type: none"> <li>Permanent closure of setts 1a, 1b, 1c, sett 19, sett 30 and sett 64 (licensable period is between 1 July – 30 November, with 21 clear days of badger activity required).</li> <li>Temporary closure of setts 5,18,63 (licensable period is between 1 July – 30 November, with 21 clear days of badger activity required).</li> </ul> </li> <li>Refer to Appendix D of the Confidential Badger Report for the badger sett mitigation locations.</li> </ul> <p>During works:</p> <ul style="list-style-type: none"> <li>Cover open excavations or provide ramps.</li> <li>Exclusion zone of 30 metres for all works around the retained badger setts (or until the exclusion of badger setts to be closed has been completed, for those being permanently closed).</li> <li>Refer to Appendix B of the Confidential Badger Report for badger sett locations.</li> </ul> <p>Operational:</p> <ul style="list-style-type: none"> <li>Installation of badger tunnel and badger fencing and around the tunnel.</li> <li>Monitoring of badger tunnel, twice annually for 2 years.</li> </ul>		<p><u>Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5 to 6 C04, Sheet 7 C03, submitted as part of Deadline 7)Environmental Masterplan (APP-107).</u></p> <p>Badger Mitigation Licence – Report of Actions under licence.</p>	Environmental Consultant. Any licensable activity will be carried out under the relevant licence.			
B3	ES - CH8 and Bat Technical Report <b>(Appendix 8.4, APP-077)</b>	Protection of bats	<ul style="list-style-type: none"> <li>Before works: An internal inspection of the building (F001 at land parcel WS64408, grid reference ST581256) to be scheduled a year prior to the planned demolition, along with emergence and re-entry surveys. Results from these surveys to be used to determine whether roosts within the building have become active again, and therefore the need for an EPS licence.</li> <li>Installation of a bat house within suitable habitat, to mitigate the loss of building F001 at land parcel WS64408.</li> <li><u>Night works are not anticipated to take place along the extent of the northern haul route. Traffic along the northern haul route would occur during the following working hours: between 7:00 and 18:00 on weekdays and 07:30 and 13:00 on Saturdays. There may be a small period of time during March / October when the</u></li> </ul>	<p>Minimum of 220 bat boxes to be installed within suitable habitats adjacent to the scheme assumes– assuming land owner’s permission is achieved.</p> <p>Monitoring surveys assumes land owner access is given for 5 years post construction.</p>	<p>Compliance with Bat Mitigation outlined in the <u>Environmental Masterplan (Environmental Statement Addendum Appendix B Figure A2.4 Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5 to 6 C04, Sheet 7 C03, submitted as part of Deadline 7)Environmental Masterplan (Figure 2.8, APP-107).</u></p>	Contractual responsibilities between Highways England and Principal Contractor, and their Environmental Consultant.	Principal Contractor	P, C and O	Signature:  Date:

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			<p><del>days are short and bats may be flying at times that vehicles are using the track but the risks of bat mortalities would be low given the short period of time concerned. A speed limit of 10 mph would be in place, which would minimise the risk of collisions. Once construction works are completed each day, sTemporary hop overs installed, using sizeable trees placed in tubs will be placed across a haul route that will temporarily bisect a bat commuting route. These will be in place over night and then removed again in the morning. The commuting route is located or dead hedging, approximately 220m east of Canegore Corner and south of , which links to the northern soil bund vegetated with trees and edges, leading to Steart Wood.</del></p> <p>During works:</p> <ul style="list-style-type: none"> <li>• Building F001 to be re-surveyed for bats 1 year prior to demolition. Building to be subject to a soft strip immediately prior to demolition.</li> <li>• Bat house to be constructed within ecological mitigation area to the east of F001.</li> <li>• Habitat on site to be retained where possible; habitat loss to be minimised.</li> <li>• Where hedgerows require removal only during the construction phase, hedgerows to be reinstated and enhanced</li> <li>• Hedgerow removal to be minimised where possible, and gaps restricted to 10m wide where this is feasible to reduce the potential for severing commuting lines. However, there are areas within the scheme where larger extents of hedgerow require removal to accommodate the scheme design.</li> <li>• All areas of hedgerow to be retained must be fenced to prevent encroachment of plant and materials.</li> <li>• Buffer zones of at least 10m to be retained between construction activities and all hedgerows and woodland, and a buffer of at least 15m to be retained between construction activities and any trees and buildings, where roosts have been identified. It is not possible to retain a 15m buffer between works and roosts WS56543; ST106774 and ST84283. However, WS56543 is inactive and works</li> </ul>						



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			<p>within 15m of ST106774 are minor and will not lead to disturbance impacts. Works are proposed 14.5m from ST84283 (supporting a small number of common species); this buffer is considered appropriate. Please refer to Figure E.7 of <b>Appendix 8.4 Bat Technical Report (document reference TR010036/APP/6.3)</b> for confirmed bat roost locations.</p> <ul style="list-style-type: none"> <li>• 'Dead hedging' to be put in place to maintain linear features during construction.</li> <li>• Night time working to be avoided where possible to minimise the need for artificial lighting.</li> <li>• Where artificial lighting is required, directional and wildlife sensitive lighting to be used to prevent light spill onto hedgerows and treelines.</li> <li>• Approximately 60 bat boxes to be installed within suitable habitats adjacent to the scheme (location of boxes to be determined during detailed design). Bat boxes will be of a range of designs to support a variety of different bat species.</li> <li>• All trees to be felled for the scheme should be re-inspected for roosting bats prior to felling. This should comprise climb and inspect surveys with endoscopes.</li> <li>• Where no further evidence of bats is identified, then trees must be soft felled, and left on the ground for at least 1 day before being disposed of.</li> <li>• Where evidence of bats is recorded, the tree must not be felled as further emergence and return surveys may be required to establish which species of bat is roosting within the tree, and the type of roost. Natural England will then need to be consulted and an EPSM licence prepared.</li> </ul> <p>Operational</p> <ul style="list-style-type: none"> <li>• Planting of mature trees to act as a hop over for the hedgerow approximately 220m east of Canegore Corner, which links to the northern soil bund vegetated with trees and edges, leading to Steart Wood. In addition, planting to encourage bats to use the nearby underbridge (located to the west) and potentially installing illuminated bollards in the verge to deter species, such as lesser</li> </ul>						



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			<p>horseshow bats, crossing the road should be considered during the detailed design. South Somerset District Council should be consulted on the detailed design for mitigation in this location.</p> <ul style="list-style-type: none"> <li>Annual monitoring of bat boxes and bat house for 3 years post construction.</li> <li>Annual crossing point surveys at locations which were subject to severance, 3 years post construction.</li> <li>Annual landscape scale transects, 3 years post construction.</li> </ul>						
B4	ES - CH8 and Barn Owl Technical Report ( <b>Appendix 8.5, APP-078</b> )	Protection of barn owls	<ul style="list-style-type: none"> <li>Before works: Prior to the start of the works the 2 recorded Occupied Breeding Sites (OBS) and all previously identified Potential Nesting Sites (PNS) must be rechecked within 1km of the works. Please refer to <b>Appendix A of Appendix 8.5 Barn Owl Technical Report (APP-078)</b>.</li> <li>Closure of OBS1 will need to take place outside of the breeding season by a licenced ecologist.</li> <li>Installation of 3 new nest boxes to mitigate for the loss of OBS1.</li> </ul> <p>During works:</p> <ul style="list-style-type: none"> <li>No works will take place within 20m of an active barn owl nest. Please refer <b>Appendix A of Appendix 8.5 Barn Owl Technical Report (APP-078)</b> for the location of active barn owl nest.</li> <li>13 additional nest boxes to be provided at least every 1km, if this can be negotiated with local landowners.</li> </ul> <p>Operational:</p> <ul style="list-style-type: none"> <li>Annual monitoring of nest boxes and screening planting, for 5 years post construction.</li> </ul>	<p>Additional nest boxes to be provided at least every 1km, assuming local landowners will grant permission.</p> <p>Monitoring surveys assumes land owner access is given for 5 years post construction.</p>	Compliance with barn owl mitigation outlined in the <b>Environmental Masterplan (APP-107)</b> .	Contractual responsibilities between Highways England and Principal Contractor, and their Environmental Consultant.	Principal Contractor	P, C and O	Signature:  Date:
B5	ES - CH8 and Breeding Bird Technical Report ( <b>Appendix 8.6, APP-079</b> )	Protection of breeding birds	<p>During works:</p> <ul style="list-style-type: none"> <li>If works commence in the bird breeding season (March to August inclusive), a suitably experienced ecologist should carry out a nesting bird check on any vegetation to be cleared, or vegetation to be retained, but which is directly adjacent to major works, no more than 24 hours prior to works commencing.</li> <li>Where nesting birds are identified works should cease within the evidenced zone of likely disturbance of the nest for that species until birds have fledged and the nest is no longer in use. The buffer zones</li> </ul>	100 bird boxes to be installed within suitable habitats adjacent to the scheme, assumes land owner permission is achieved. A pair of breeding hobbies were recorded approximately 280m north of the proposed construction works.	Compliance with breeding bird mitigation outlined in the <a href="#">Environmental Masterplan (Environmental Statement Addendum Appendix B Figure A2.4 Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5 to 6 C04, Sheet 7 C03, submitted as part of Deadline</a>	Contractual responsibilities between Highways England and Principal Contractor, and their Environmental Consultant.	Principal Contractor	C	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			<p>for nesting bird species found during construction works will be determined by the Ecological Clerk of Works, dependent on the nesting bird species and nature of works in proximity to the nest.</p> <ul style="list-style-type: none"> <li>Replacement planting of hedgerows and woodland and the installation of 100 bird boxes (location of boxes to be determined during detailed design).</li> <li>Construction works within the vicinity of the breeding hobbies should be undertaken outside the breeding season, or otherwise screening of the works should be undertaken using hoarding or similar.</li> </ul>		<del>7) Environmental Masterplan (Figure 2.8, APP-107).</del>				
B6	ES - CH8 and Reptile Technical Report (Appendix 8.7, APP-080)	Protection of common reptiles	<ul style="list-style-type: none"> <li>Before works: Reptile displacement to be undertaken, which involves the removal of habitat in a careful phased manner within the active reptile season (March to September inclusive), to be carried out at reptile area B6, B7 and B8. Please refer to Figure D.1 of <b>Appendix 8.7 Reptile Technical Report (APP-080)</b> for reptile site locations.</li> <li>Reptile exclusion fencing to be installed under supervision of suitability experienced ecologist during the reptile active season (March – September) in area B6, B7, B8, area C26, area D10, D11, D13, D14, D15 and area D16, D17. Please refer to <b>Appendix F of Appendix 8.7 Reptile Technical Report (APP-080)</b> for exclusion fencing locations.</li> <li>Reptile capture and translocation at area B6, B7, B8, area C26, area D10, D11, D13, D14, D15 should be carried out for a minimum of 60 days and area D16, D17 should be carried out for a minimum of 70 days until 5 clear days are achieved. Please refer to <b>Figure D.1 of Appendix 8.7 Reptile Technical Report (APP-080)</b> for reptile site locations.</li> <li>After the capture programme, the remaining grassland habitat should be strimmed to ground level, and destructive searches of tree roots and a supervised topsoil strip should be undertaken before commencing construction activities within the excluded area. This need to be carried out with a suitably experienced ecologist present.</li> <li>The reptile receptor site for captured individuals needs to be enhanced prior to start of translocation; 2 hibernacula to be</li> </ul>	Assumes landowner consent to use land as receptor site and monitoring surveys.	Compliance with reptile mitigation outlined in the <a href="#">Environmental Masterplan (Environmental Statement Addendum Appendix B Figure A2.4 Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5 to 6 C04, Sheet 7 C03, submitted as part of Deadline 7) Environmental Masterplan (Figure 2.8, APP-107).</a>	Contractual responsibilities between Highways England and Principal Contractor, and their Environmental Consultant.	Principal Contractor	P, C and O	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			<p>installed and stock proof fencing to be installed in the northern area, to stop sheep grazing to allow grass structure to develop. Please refer to <b>Figure D.1 of Appendix 8.7 Reptile Technical Report (APP-080)</b> for receptor site location and enhancement.</p> <p>During works:</p> <ul style="list-style-type: none"> <li>An Ecological Clerk of Work to be present during habitat clearance, to assess and carry out hand searches in any potential reptile habitat prior to removal.</li> <li>Reptile exclusion fencing to remain in place during construction and regularly inspected and maintained. Please refer to Appendix F of <b>Appendix 8.7 Reptile Technical Report (APP-080)</b> for exclusion fencing locations.</li> <li>In 2021: Allow grazing within northern receptor area; mow 1m width strips during winter months within southern field to increase structural diversity.</li> <li>Grass areas at receptor site are to be left unmanaged between 2022- 2023</li> </ul> <p>Operational:</p> <ul style="list-style-type: none"> <li>Replacement and creation of habitats of value to reptiles, such as grassland, scrub, ponds, woodland glades and the provision of log and brash piles where appropriate.</li> <li>In 2024: Allow grazing within northern receptor area; mow 1m width strips during winter months within southern field to increase structural diversity.</li> <li>In 2025: Grass area to be left unmanaged.</li> <li>In 2026, management of receptor areas returns to landowner on the assumption that the Highways England verge has established and provides suitable habitat for reptiles to colonise.</li> <li>Reptile monitoring is required at the receptor site 5 years (2021 - 2025) following completion of translocation and construction works. Please refer to Figure D.1 of <b>Appendix 8.7 Reptile Technical Report (APP-080)</b> for receptor site location.</li> </ul>						
B7	ES - CH8 and Hazel Dormouse Technical Report ( <b>Appendix 8.8, APP-081</b> )	Protection of hazel dormice	<ul style="list-style-type: none"> <li>Before works: Prior to any clearance of woodland, scrub or hedgerow vegetation, personnel should receive a toolbox talk by a suitably qualified ecologist, covering</li> </ul>	Not applicable	Compliance with mitigation measures outlined within the to be included in the CEMP.	Contractual responsibilities between Highways	Principal Contractor	C	Signature:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			<p>the identification, ecology, conservation status and legislative protection of dormice.</p> <ul style="list-style-type: none"> <li>All retained woodland and hedgerow habitat to be fenced off so that it is protected from physical disturbance during the construction phase.</li> </ul>			England and Principal Contractor, and their Environmental Consultant.			Date:
B8	ES - CH8 and Great Crested Newt (GCN) Technical Report ( <b>APP-082</b> )	Protection of GCN	<p>Before works:</p> <ul style="list-style-type: none"> <li>Update presence / likely absence surveys of all ponds scoped out of the surveys completed in 2017 and those where GCN were not recorded. eDNA surveys to be completed, with further population surveys required if the eDNA surveys find GCN to be present.</li> <li>GCN mitigation licence to be obtained from Natural England, based on the Ghost Licence accepted by Natural England (REP4-007).</li> <li>Installation of exclusion and drift fencing around Meta-population A located at Downhead and meta-population C located at Hazlegrove. Please refer to Appendix B of <b>Appendix 8.9 GCN Technical Report (APP-082)</b> for pond and receptor site locations.</li> <li>Relocation programme of individuals from these areas to be carried out for a minimum of 60 days until 5 clear days are achieved. Individuals caught to be relocated into the receptor sites close by.</li> <li>Receptor sites to be enhanced before translocation including the creation of hibernacula at each site.</li> <li>Relocation programme to be undertaken during the active GCN season (between March and September inclusive).</li> <li>A 30 day trap out period is planned for ponds 41 and 7 until 5 clear days have been achieved. Please refer to <b>Appendix B of Appendix 8.9 GCN Technical Report (APP-082)</b> for pond site locations.</li> <li>If either pond is found to be holding water during the trapping period the ponds should be drained down under ecological supervision and any remaining GCN relocated.</li> <li>As part of the translocation, the exclusion fencing should be inspected and any damaged fixed.</li> <li>Any scrub within the trap out areas (and within the working area) should be progressively trimmed in sections to</li> </ul>	<p>Assumption regarding landowner consent to use land as receptor site.</p> <p>Monitoring surveys assumes land owner access is given for 4 years post translocation.</p>	<p>Compliance with GCN mitigation outlined in the <a href="#">Environmental Masterplan (Environmental Statement Addendum Appendix B Figure A2.4 Environmental Masterplan, Sheets 1 to 4 version C03, Sheets 5 to 6 C04, Sheet 7 C03, submitted as part of Deadline 7) Environmental Masterplan (Figure 2.8, APP-107)</a>.</p> <p>Great crested newts Mitigation Licence – Report of Actions under licence.</p>	Contractual responsibilities between Highways England and Principal Contractor, and their Environmental Consultant. Any licensable activity will be carried out under the relevant licence.	Principal Contractor	P, C and O	Signature:  Date:

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			<p>increase the effectiveness of the translocation. This should occur under the supervision of an ecologist, by reducing the height to 150mm above ground, hand searched by the ecologist, then taken to 50mm above ground.</p> <ul style="list-style-type: none"> <li>Once the capture programme has been completed, any potential hibernacula in the capture area should be dismantled by hand or under supervision by a licensed ecologist.</li> <li>Following completion of the trap out period, all remaining vegetation within the fenced off areas should be strimmed to 150mm above ground, hand searched by a licenced ecologist, then taken to 50mm above ground.</li> <li>A hand search should be undertaken, before strimming as close to the ground as possible, at least 24 hours after the initial cuts. The arisings should be removed.</li> <li>Once the phased vegetation clearance is complete, a destructive search should be undertaken to ensure no newts remain within the works areas.</li> <li>As a precautionary measure, all excavation works should be covered at the end of each shift or a ramp installed.</li> <li>Following clearance of habitats, the works area should be maintained as unsuitable for GCN for the duration of the works.</li> <li>Exclusion fencing should remain intact around the works areas to ensure that GCN do not enter the works areas following completion of the relocation.</li> </ul> <p>During works:</p> <ul style="list-style-type: none"> <li>No kerbs to be installed around the gully pots which are within 500m of meta-population A and C. However, if kerbs are essential, the gully pots should be located at least 10cm from the edge of the kerb to reduce the risk of GCN being channelled into the gully pots.</li> <li>Gulley pots within 500m of the meta-populations should be fitted with amphibian gully pot ladders.</li> <li>Exclusion fencing will be monitored and maintained throughout construction to ensure GCN do not re-enter the works area.</li> </ul> <p>Operational:</p>						

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			<ul style="list-style-type: none"> <li>Re-instatement and enhancement of suitable GCN habitat. Please refer to environmental master plan (<b>Figure 2.8, APP-107</b>) and <b>Appendix 8.9 GCN Technical Appendix (APP-082)</b></li> <li>Creation of 2 new wildlife ponds.</li> <li>Monitoring should be undertaken at the ponds of the Downhead population, including the newly created pond for 4 years post translocation (2021-2024). The monitoring should be carried out by a licenced ecologist.</li> <li>2 years of presence or absence monitoring should be undertaken at the Hazlegrove population (2021-2022).</li> <li>Annual inspection of hibernacula condition and maintenance, for a period of 5 years (2020-2025).</li> <li>Mitigation planting areas to be maintained for a period of 3 years from completion of the scheme.</li> <li>After the 3-year management period is completed the management of land outside the highways boundary to be returned to the landowner.</li> </ul>						
B9	ES - CH8 and Otter and Watervole Technical Report ( <b>Appendix 8.10, APP-083</b> )	Otter and water vole mitigation.	<p>During works:</p> <ul style="list-style-type: none"> <li>Where works, (including temporary works) are within close proximity to ditches known to support water vole, a minimum buffer of 5m from the edge of the ditch to be retained and fenced. Please refer to Appendix B of <b>Appendix 8.10 Otter and Watervole Technical Report (APP-083)</b>.</li> </ul>	Not applicable	Compliance with mitigation measures outlined within the to be included in the CEMP.	Contractual responsibilities between Highways England and construction contractors, and their Environmental Consultant.	Principal Contractor	C	Signature:  Date:
B10	ES - CH8 and Invertebrate Technical Report ( <b>Appendix 8.11, APP-084</b> )	Terrestrial invertebrates mitigation.	<ul style="list-style-type: none"> <li>Before works: Hedgerow removal to be carried out in the winter months, where brown hairstreak identified.</li> <li>Blackthorn bushes with brown hairstreak ovum to be translocated by a suitably experienced ecologist adjacent to hedgerows.</li> </ul> <p>Operational:</p> <ul style="list-style-type: none"> <li>Re-instatement and enhancement of invertebrate habitat, including ivy to provide mitigation for thick-headed fly.</li> <li>Once hedgerows have become established, when management is required, hedgerows containing blackthorn will involve cutting of only 1 side of the hedgerow every other year to prevent local extinction of brown hairstreak. Cutting of hedgerows will be</li> </ul>	Assumes permission is obtained from landowners to translocate ovum into suitable adjacent hedgerows.	Compliance with mitigation measures outlined within the to be included in the CEMP.	Contractual responsibilities between Highways England and Principal Contractor, and their Environmental Consultant.	Principal Contractor	P and O	Signature:  Date:



Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			undertaken in early August, when eggs and larvae are less likely to be present within blackthorn, or in January and February.						
<b>Geology and Soils (GS)</b>									
GS1	OSMP (Annex B.3) ES – CH9 ( <b>APP-046</b> )	The protection of soil structure and quality – to prevent degradation of soils both within and outside the permanent and temporary development areas.	<p>Completion of works in line with the site SMP (refer to Annex B.3 of this report for the Outline SMP). This is to ensure works are undertaken in accordance with appropriate guidelines including Defra's Construction Code of Practice for the Sustainable use of Soils on Construction Sites (2009) and the British Standards Institution Specification for topsoil BS3882 (2015) particularly in areas where reinstatement of agricultural land is required. BS3882:2015 will also apply for topsoil spreading on areas of newly constructed earthworks where import is required.</p> <p>The use of a proprietary geotextile membrane to protect the existing ground condition where haul routes or site compounds / storage areas are located. A layer of inert crushed granular material placed on a geotextile membrane will form temporary running surfaces for construction plant and reinforcement of access tracks. Car parking and pedestrian areas will be bolstered with asphalt surfacing. On completion of the scheme, the temporary haul routes will be restored and the areas returned to their original condition.</p> <p>Where importation of topsoil is required for spreading on areas of newly constructed earthworks, this will be selected in accordance with BS 3882:2015<sup>8</sup> to ensure that the topsoil provides suitable substrates for native plant species and to maximise biodiversity, in accordance with industry best practice.</p>	Not applicable	Completion of SMP (live document)	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	C	Signature:  Date:
GS2	OMMP (Annex B.2) OSWMP (Annex B.1) ES – CH9 ( <b>APP-046</b> )	To maximise the re-use of suitable geological resources while minimising waste generated.	Completion of works in line with the site Materials Management Plan (MMP) (refer to Annex B.2), Site Waste Management Plan (SWMP) (refer to Annex B.1) and compliance with the CL:AIRE document 'The Definition of Waste: Development Industry Code of Practice' (2008).	Not applicable	Completion of MMP and SWMP (live documents)	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	C	Signature:  Date:
GS3	ES – CH9 ( <b>APP-046</b> )	The protection of controlled waters: general.	Works to be carried out in accordance with Environmental Protection Act (EPA) 1990, Section 161A of the Water Resources Act	Not applicable	Daily site audits	Contractual responsibilities between	Principal Contractor	C	Signature:

<sup>8</sup> British Standards (2015) BS 3882:2015 *Specification for topsoil*.

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			<p>1991 and the Environmental Permitting (England and Wales) Regulations 2010. Reasonable and practicable steps to be taken to protect the water environment will include:</p> <ul style="list-style-type: none"> <li>The careful management of construction site drainage, including the use of cut-off ditches to collect site run-off, with run-off passed through settling lagoons or silt traps to allow removal of sediments prior to discharge. Where considered necessary, treatment plant will be made available on site for construction runoff water and groundwater from dewatering, including: <ul style="list-style-type: none"> <li>Settlement tanks</li> <li>Chemical dosing plant</li> <li>Concrete washwater plant</li> <li>Oil-water separators</li> <li>Materials separators</li> </ul> </li> <li>Management of excavated topsoils will be in line with the guidance provided within the SMP to minimise soil being entrained in runoff water.</li> <li>Works will be monitored by a suitably qualified Site Environmental Clerk of Works.</li> <li>An auditing programme will be implemented to verify environmental performance.</li> </ul>			Highways England and the Principal Contractor			Date:
GS4	ES – CH9 ( <b>APP-046</b> )	The protection of controlled waters during excavation and foundation works.	<ul style="list-style-type: none"> <li>Where piling or penetrative ground improvement is required, the works will be carried out in accordance with the Environment Agency guidance<sup>9</sup> <sup>10</sup>. If following the scheme GI, contaminated land is identified in areas of piling or penetrative ground improvement, a foundation works risk assessment will need to be undertaken to determine the likely effects relating to the driving of piles through any contaminated Made Ground or landfilled materials and into the underlying Secondary A Aquifer, and to identify what mitigation measures are appropriate for the site.</li> <li>The batching of concrete to only be undertaken in designated impermeable areas with a segregated drainage system, placement of temporary bunds</li> </ul>	Not applicable	Consultation with the Environment Agency.	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	C	Signature:  Date:

<sup>9</sup> Environment Agency (2001) *Piling and penetrative ground improvement methods on land affected by contamination: guidance on pollution prevention*. National Groundwater and Contaminated Land Centre Report NC/99/72 [online] available at: <http://www.merseygateway.co.uk/publicinquirydocs/Core-docs/CD-256.pdf> (last accessed March 2018).

<sup>10</sup> Environment Agency (2002) *Piling into contaminated sites*. National Groundwater and Contaminated Land Centre Report [online] available at: <http://webarchive.nationalarchives.gov.uk/20140329082414/http://cdn.environment-agency.gov.uk/scho0202bisw-e-e.pdf> (last accessed March 2018).

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			<p>down-slope to contain any spillages, and the development of a spill response protocol.</p> <ul style="list-style-type: none"> <li>The discharge of potentially contaminated groundwater will be appropriately managed by the Contractor through the use of appropriate treatment prior to discharge.</li> </ul>						
GS5	ES – CH9 ( <b>APP-046</b> )	The protection of site soil and groundwater quality with respect to plant and working methods.	<p>Working method statements to be in place during construction, to ensure environmentally safe working practices on site with respect to the underlying ground and groundwaters. These will include (but not be limited to):</p> <ul style="list-style-type: none"> <li>The storage of oil, fuel and other potentially hazardous substances will be within a secure site compound located on a hardstanding area. Storage of these substances will be within an appropriately bunded area (110% of total capacity volume).</li> <li>There will be designated refuelling and maintenance areas and concrete batching areas located on impermeable hardstanding with drainage treated appropriately. Placement of temporary bunds down-slope of potentially polluting activities. will contain any spillages. A spill response protocol will be developed.</li> <li>Regular inspections of site plant will be carried out and the use of drip trays and training in the location and use of spill kits and emergency spillage procedures will be provided for site workers. Action Plans will be in place to effectively deal with any contamination issues during construction for example for spillages and leaks from construction plant.</li> <li>Adjacent areas outside the development boundary will be protected by site fencing to prevent accidental encroachment and damage of topsoil by site plant.</li> </ul>	Absence of GI data.	Production of working method statements. Daily site audits.	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	P, C	Signature:  Date:
GS6	ES – CH9 ( <b>APP-046</b> )	The management of soil and groundwater contamination risks.	<p>Following development, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of Environmental Protection Act (1990).</p> <ul style="list-style-type: none"> <li>Completion of works in line with the recommendations included within the scheme Remediation Strategy (to be written following the completion of the intrusive GI and subsequent contaminated land risk assessment).</li> </ul>	Absence of GI data.	Production of working method statements. Daily site audits. Consultation with the EA where necessary.	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	C	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			<ul style="list-style-type: none"> <li>Completion of works in line with the Method Statement produced (if necessary) for the removal, transportation, deposition and monitoring of any identified contaminated material, fuels, chemicals and waste.</li> <li>All contaminated waste created on site will undergo basic characterisation prior to disposal to an appropriate landfill. Waste Acceptance Criteria (WAC) testing will be undertaken where necessary.</li> <li>Every effort will be made to minimise waste to be landfilled with treatment at an appropriate facility or on-site treatment hub considered in the first instance.</li> <li>Any imported materials will comply with standards provided within the Remediation Strategy.</li> </ul>						
GS7	ES – CH9 ( <b>APP-046</b> )	Management of contamination risks: reporting	<p>A qualitative and quantitative Contaminated Land Risk Assessment (CLRA) to be prepared following the receipt of GI results for the scheme during the examination period, prior to commencement of construction. This will inform the conceptual site model and identify any unacceptable contamination risks and enable the selection of appropriate mitigation measures to ensure protection of human and environmental receptors (including controlled waters) during construction. Any mitigation measures required will be incorporated into the CEMP on completion of the CLRA. The CLRA scope will include:</p> <ul style="list-style-type: none"> <li>Confirmation of the current geo-environmental baseline for the proposed route including its potentially contaminative history along with geological, hydrogeological and hydrological factors updated with factual site data.</li> <li>Assessment of site specific GI chemical testing data using current best practice and standards to accurately determine the potential risks to human health, controlled waters, building materials, vegetation and in relation to ground gas risks given the different options for long term end use.</li> <li>Production of a revised Site Conceptual Model, to be used to determine the potential contaminant linkages present (source-pathway-receptor model).</li> </ul> <p>A Remediation Strategy to be prepared on completion of the CLRA, and consultation</p>	Absence of GI data.	Review of GI results and production of CLRA, Remediation Strategy and method statement, in consultation with South Somerset District Council and the Environment Agency.	Contractual responsibilities between Highways England and their Consultant.	Detailed Design Consultant	P, and C	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			<p>with the Environment Agency and South Somerset District Council on the Remediation Strategy prior to completion. The Remediation Strategy will include (but not be limited to):</p> <ul style="list-style-type: none"> <li>Review contaminated land risk assessment to identify pollutant linkages with unacceptable risks that require mitigation.</li> <li>Identifying feasible remediation options for each relevant pollutant linkage.</li> <li>Producing a remediation strategy that addresses all relevant pollutant linkages, where appropriate by combining remediation options.</li> </ul> <p>Following on from the Remediation Strategy, the preparation of a site-specific Method Statement for the removal, transportation, deposition and monitoring of any identified contaminated material will be developed by the Contractor if necessary and in line with the Pollution Prevention and Control Regime and the Environmental Permitting Regulations. The Method Statement will be incorporated within the CEMP, where necessary.</p> <p>The Method Statement will include specific instructions in relation to:</p> <ul style="list-style-type: none"> <li>The control of excavation, separation, handling and storage activities, to ensure that those soils identified as contaminated are not combined with uncontaminated soil.</li> <li>The on-site treatment of contaminated material if appropriate to allow re-use as appropriate thereby minimising the amount for offsite disposal.</li> <li>The issue of appropriate health and safety procedures when working with contaminated materials.</li> </ul>						
GS8	ES – CH9 ( <b>APP-046</b> )	Management of contamination risks: workers	Production of risk assessments specific to the works in order to identify risks and appropriate mitigation measures in line with all the relevant health and safety legislation and guidance, to ensure the safety of workers.	Construction activities pose a risk to workers on site.	Production of and adherence to risk assessments.	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	C	Signature:  Date:
GS9	ES – CH9 ( <b>APP-046</b> )	Obtain Land Drainage Consent for excavations and dewatering activities.	Discharge to surface waters will require a Land Drainage Consent from Somerset Drainage Board Consortium, for the following aspects of the scheme:	Excavations and dewatering would be required for certain aspects of the scheme.	Consultation with the Somerset Drainage Board Consortium.	Contractual responsibilities between Highways England and	Principal Contractor	C	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			<ul style="list-style-type: none"> <li>Renewal of an existing gateway crossing by means of a culvert or bridge.</li> <li>Creation of a new gateway crossing by means of a culvert or bridge.</li> <li>Piping a watercourse for a length of 8 metres or less.</li> <li>All structures or modifications in or within 9 metres of a watercourse (Headwalls, Sluices and Fencing).</li> <li>Any temporary works in or within 9 metres of a watercourse, that will be in place for less than 6 months.</li> </ul>			the Principal Contractor			
GS10	ES – CH9 ( <b>APP-046</b> )	Ensure appropriate methods of working in areas of historical landfills, infilled quarries or Made Ground.	<ul style="list-style-type: none"> <li>Further GI includes investigation at historic landfills and infilled quarries to accurately determine the extent and nature of contaminated materials within the red line boundary and a quantitative assessment of the associated risks and appropriate mitigation measures necessary. These are likely to include aquifer protection measures such as casing through any backfilled materials, recirculation or safe containment of drilling flush, plugging / reinstatement of landfill linings, appropriate disposal of excavated contaminated materials and reinstatement of capping materials if encountered.</li> <li>Landfill material, Made Ground and natural strata have the potential to produce ground gases. Ground gas risks will be assessed in accordance with current guidance following GI completion as part of the CLRA process and appropriate mitigation identified.</li> </ul>	Works in areas of historical landfills, infilled quarries or Made Ground.	Production of CLRA. Daily site audits. Consultation with the Environment Agency where necessary.	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	C	Signature:  Date:
<b>Material Assets and Waste (M)</b>									
M1	ES - CH10 ( <b>APP-047</b> )	Reduce the use of materials and ensure resource efficiency.	Minimise material requirements within the detailed design of the scheme, by specifying the use of infrastructure that contains a high proportion of recycled content (where design constraints allow), and by designing to reuse as much site-won material as possible.	The construction of the scheme will require large quantities of material.	Not applicable	Contractual responsibilities between Highways England and their Consultant.	Detailed design consultant	P	Signature:  Date:
M2	ES - CH10 ( <b>APP-047</b> )	Reduce impact of transportation of materials to site.	Locally sourced materials and suppliers to be used where possible.	Assumes materials can be sourced locally.	Not applicable	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	C	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
M3	ES - CH10 ( <b>APP-047</b> )	Reduce generation of waste.	Completion of works in line with the SWMP (refer to Annex B.1) to reduce waste arisings by implementing the waste hierarchy (prevention, reuse, recycle, recovery and as a last resort disposal). For example, surplus excavated materials should be reused within the landscaping of the scheme where possible.	The construction of the scheme will require large quantities of material.	Completion of SWMP (live document)	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	C	Signature:  Date:
M4	ES - CH10 ( <b>APP-057</b> )	Reuse of inert waste in nearby quarries.	Somerset has a long history of aggregate and building stone production. Therefore, opportunities to be sought for the reuse of inert waste in quarry restoration, and prioritised over disposal in landfill.	Nearby quarries contain material types needed for construction of the scheme.	Completion of SWMP (live document)	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	C	Signature:  Date:
M5	ES - CH10 ( <b>APP-047</b> )	Ensure appropriate waste management facilities are identified and used	Where material must be taken to a recycling or disposal site, these sites must have the appropriate permits and should be located as close to the works as possible.	Assumed waste infrastructure has capacity locally.	Completion of SWMP (live document)	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	C	Signature:  Date:
<b>Noise and Vibration (NV)</b>									
NV1	ES - CH 11 ( <b>APP-048</b> )	Limit noise emissions during construction.	Implement following noise mitigation measures during construction: <ul style="list-style-type: none"> <li>Select quieter plant than has been used in the assessment (worst-case scenario)</li> <li>Ensure equipment is maintained, in good working order, and is used in accordance with the manufacturer's instructions.</li> <li>Fit equipment with silencers or mufflers.</li> <li>Setting time restrictions on certain noisy activities.</li> <li>Manage deliveries to prevent queuing of site traffic.</li> <li>Do not leave plant running unnecessarily</li> <li>Careful orientation of plant with directional features</li> <li>Materials to be lowered instead of dropped from height</li> <li>Use of adjustable or directional audible vehicle-reversing alarms or use of alternative warning systems (for example, white noise alarms)</li> <li>Train and advise members of the construction team during toolbox talk briefings on quiet working methods.</li> <li>Temporary barriers should be erected to fully obscure the construction works from a receptor.</li> </ul>	Sensitive receptors within the vicinity of the scheme.	Mitigation measures to be included in the CEMP.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor	C	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
NV2	ES- CH 11 ( <b>APP-048</b> )	Mitigate effects of noise and vibration on local communities	Letter drops explaining the likely duration of construction works, along with the start and stop dates, and reassurance that everything is being done to minimise noise levels should be considered. A dedicated site contact for the public and complains handling procedure should be put in place. Further information that should be followed is contained in the Communications Relation Strategy (Annex B.6 of this report).--	Sensitive receptors within the vicinity of the scheme.	Compliance with the Communications Relation Strategy.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor	P and C	Signature:  Date:
NV3	ES - CH 11 ( <b>APP-048</b> )	Limit vibration during construction.	Where vibration levels have been predicted to exceed SOAEL (PPV 1.0mm/s) the Contractor should: <ul style="list-style-type: none"> <li>Consider the use of alternative piling methods and/or plant.</li> <li>Avoid piling at night in locations where it may have a noise or vibration impact.</li> <li>Keep occupiers informed of the likely times and duration of works.</li> <li>Monitor the vibration level at the nearest receptors (or at an equivalent offset distance) to enable the vibration level at receptors to be determined.</li> </ul> Please note that the locations would need to be determined by the Contractor once the construction plant has been confirmed.	Sensitive receptors within the vicinity of the scheme.	Mitigation measures to be included in the CEMP.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor	C	Signature:  Date:
NV4	ES - CH 11 ( <b>APP-048</b> )	Limit noise emissions and vibration during construction.	Appropriate risk assessment to be undertaken to ensure adverse levels of noise and vibration are not experienced both on-site (for members of staff on-site) and at dwellings.	Sensitive receptors within the vicinity of the scheme.	Compliance with the risk assessment.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor	P and C	Signature:  Date:
NV5	ES – CH11 ( <b>APP-048</b> )	Limit noise emissions during construction	Routine noise and vibration monitoring to be carried out during construction works in addition to monitoring at those properties identified as at risk from significant adverse effects from linear works and in the vicinity of construction compounds. Monitoring would include long term measurements at locations where construction activity is likely to exceed 10 working days.	Sensitive receptors within the vicinity of the scheme.	Mitigation measures to be included in the CEMP.	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor	C	Signature:  Date:
NV6	ES – CH11 ( <b>APP-048</b> )	Limit noise emissions during operation at The Spinney and Annis Hill Farm.	Compensatory mitigation in the form of secondary glazing and acoustic trickle vents will be offered to ensure increases in operational noise can be offset at The Spinney and Annis Hill Farm.	Sensitive receptors within the vicinity of the scheme.	Not applicable	Contractual responsibilities between Highways England and the Principal Contractor.	Principal Contractor	O	Signature:  Date:
<b>People and Communities (PC)</b>									



Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
PC1	ES – CH12 ( <b>APP-049</b> )	To ensure there is a safe environment for those travelling along the route, and for those delivering the construction works.	Implementation of the Traffic Management Plan (TMP) (refer to Annex B.6) will include the following measures: <ul style="list-style-type: none"> <li>Local road and A303 closures.</li> <li>A reduction in speed limits to 40mph on the departure from Podimore Roundabout taking into account a 1 + 1 contraflow.</li> <li>A reduction in speed limit to 50mph for approximately 1,100 metres on the western approach to the A303 works.</li> <li>Employment of average speed cameras to enforce limits.</li> <li>Temporary speed limits on local roads.</li> <li>Closures to the A303 between Podimore Roundabout, Sparkford Roundabout and the A371 Wincanton and a diversion route via the A359 form Sparkford Roundabout to Yeovil, and the A37 to the A303.</li> <li>Closures to local roads, although access will be maintained to adjacent villages and businesses at all times.</li> <li>Management of NMU routes.</li> </ul>	Local traffic and NMUs will still require access around the area.	Implementation of measures outlined in the TMP.	Contractual responsibilities between Highways England and the detailed design consultant and Principal Contractor.	Principal Contractor	P and C	Signature:  Date:
PC2	ES – CH12 ( <b>APP-049</b> )	To ensure that construction information is disseminated to landowners, parish councils, local interest groups and the general public.	Prior to construction, the appointed Contractor to register with the National Considerate Constructor's Scheme. Contractor to establish a forum established to disseminate construction information to landowners, parish councils, local interest groups and the general public. Properties, businesses and buildings, occupants of premises likely to be affected during construction are to be advised of the works prior to their occurrence.	Local community likely to be affected by the construction activities.	Registration with the National Considerate Constructor's Scheme and implementation of a forum to disseminate construction information.	Contractual responsibilities between Highways England and the detailed design consultant and Principal Contractor.	Principal Contractor	P	Signature:  Date:
PC3	ES – CH12 ( <b>APP-049</b> )	To minimise effects on all travellers during construction.	Constructions works to be phased to minimise effects on all travellers during construction. All temporary diversions for non-motorised users around the work site to be clearly signed, with alternative access arrangements maintained throughout the construction period, as required. The majority of existing crossings only to be closed once diversions are in place or the new arrangement has been established.	Local community likely to be affected by the construction activities.	Construction works are phased.  Non-motorised user routes are signed and alternative access is arranged where necessary.	Contractual responsibilities between Highways England and the detailed design consultant and Principal Contractor.	Principal Contractor	C	Signature:  Date:
PC4	ES – CH12 ( <b>APP-049</b> )	To ensure NMU routes impacted by the scheme are appropriately re-provided.	NMU facilities to be installed at locations as defined in the Figure 2.4 ( <b>APP-103</b> ).	NMUs likely to be affected by the construction activities.	Non-motorised user facilities correctly installed at locations as defined within the Right of Way Strategy.	Contractual responsibilities between Highways England and the detailed design consultant and	Principal Contractor	O	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
						Principal Contractor.			
<b>Road Drainage and the Water Environment (RDWE)</b>									
RDWE1	ES – Appendix 4.3 (APP-056)	To mitigate potential adverse effects upon surface waters and groundwater during the construction phase	Construction activities must be managed in accordance with CIRIA Guidelines. Guidance on best practice in relation to pollution prevention and water management is set out in the following documents: <ul style="list-style-type: none"> <li>CIRIA's <i>Environmental good practice on site</i><sup>11</sup>.</li> <li>CIRIA's <i>Control of water pollution from linear construction projects; Technical Guidance</i><sup>12</sup>.</li> <li>Environment Agency's <i>Protect groundwater and prevent groundwater pollution</i><sup>13</sup>.</li> </ul>	Watercourses and sensitive ecological sites within the vicinity of the scheme.	Daily site audits.	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	P and C	Signature:  Date:
RDWE2	ES – Appendix 4.3 (APP-056)	To mitigate potential adverse effects upon surface waters and groundwater during the construction phase	Specific measures to be implemented to limit the impact of construction activities on the water environment include: <ul style="list-style-type: none"> <li>All construction workers to be briefed on the importance of maintaining water quality, the location of surface water features, and the location and use of spill kits as part of the site induction.</li> <li>The construction drainage network to incorporate measures (for example interceptors) to prevent the discharge of hydrocarbons to surface or groundwater systems.</li> <li>In areas where there is increased risk of hydrocarbon / chemical spillage and around hazardous substance stores, additional precautions to be taken. These include bunding, impermeable bases, suitable drainage systems, and siting away from any open drainage channels.</li> <li>Any stockpiled materials to be stored within enclosed areas to enable the runoff to be stored and treated where required.</li> <li>It is advised that soil storage is kept a minimum of 12 metres away from a watercourse to avoid unnecessary pollution run-off into the watercourses.</li> <li>Any concrete works to be carefully controlled and where required, any</li> </ul>	Watercourses and sensitive ecological sites within the vicinity of the scheme.	Daily site audits.	Contractual responsibilities between Highways England and the Principal Contractor	Principal Contractor	P and C	Signature:  Date:

<sup>11</sup> Audus, Charles and Evans (2010) *Environmental Good Practice on Site* (Third Edition) (C692).

<sup>12</sup> Murnane, Heap and Swain (2006) *Control of water pollution from linear construction projects; Technical Guidance*

<sup>13</sup> Environment Agency (2017) *Protect groundwater and prevent groundwater pollution* [online] available at: <https://www.gov.uk/government/publications/protect-groundwater-and-prevent-groundwater-pollution/protect-groundwater-and-prevent-groundwater-pollution> (last accessed June 2018).

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
			<p>concrete tankers will be washed out in controlled areas.</p> <ul style="list-style-type: none"> <li>All plant and machinery to be maintained in a good condition and any maintenance required will be undertaken within safe areas.</li> <li>Pollution prevention and spill response procedures (in the form of an Incident Control Plan) to be developed by the contractor and a spill kit and clean up equipment maintained on site.</li> <li>Wheel washers and dust suppression measures to be used to prevent the migration of pollutants.</li> <li>Monitoring of the surface watercourses to be carried out before, during, and after construction to ensure no adverse impact on water quality.</li> <li>Manually operated penstocks to be provided immediately prior to all outfalls leading to a watercourse and upstream of attenuation pond flow control devices.</li> </ul>						
RDWE3	Statement of Common Ground between the Environment Agency and the Applicant ( <b>REP4-004</b> ).	To ensure the borehole / well at ST 55646 24982, within the footprint of the proposed works, does not provide a preferential pathway where contaminated runoffs / spills can enter the aquifer during construction or operation.	Continued liaison with the landowner (where the water supply is present) should be undertaken during detailed design and specific mitigation measures, such as appropriate decommissioning using current best practice, should be included within the CEMP.	The borehole / well could provide a preferential pathway to groundwater resources.	Mitigation measures to be included within CEMP.	Inclusion of mitigation measures in the CEMP and strict adherence to the CEMP.	Detailed design consultant	All	Signature:  Date:
<b>Climate (C)</b>									
C1	ES- CH13 ( <b>APP-050</b> )	Reduce the waste and use of unnecessary materials and fuel.	Plant equipment and vehicles to be used on the scheme will be selected based on their relative environmental performance taken from a technical specification.	Not applicable.	Reduction in waste and fuel used throughout the construction and maintenance periods. Completion of CEMP and SWMP (live documents)	Strict following of the CEMP and SWMP throughout the construction and maintenance periods.	Principal Contractor	All	Signature:  Date:
C2	ES- CH13 ( <b>APP-050</b> )	Evaluate the final carbon emissions post-construction	Post-construction / as built carbon assessment to be undertaken to consider the actual emissions from the construction of the scheme. This will require the Principal Contractor to monitor the activities on site closely in order to have the data to undertake this final carbon assessment.	Not applicable	As built and construction activity data.	Recording of construction activity – material deliveries (location and mode), plant	Principal Contractor	C	Signature:  Date:

Reference	Document reference	Objective	Action (including specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements (if applicable)	How the action is to be implemented	Responsible person(s)	When P=Pre-construction C=Construction O=Operation A=All	Completion record
						used and fuel consumption.			

## 4 Consents and permissions

### 4.1 Consents and Agreement Position Statement

4.1.1 A **Consents and Agreement Position Statement (APP-019)** has 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.

4.1.2 This chapter outlines the consents, permissions and agreements that will be, or will likely be, sought by the Highways England or the Principal Contractor (PC), insofar as they relate to the environmental aspects of the scheme.

4.1.3 [Note: This chapter will need to be updated for the CEMP to cover developments through the detailed design and construction planning phase, and thought the construction phase, in order to capture all relevant items.]

### 4.2 Consents and permissions

4.2.1 As outlined in the **Consents and Agreement Position Statement (APP-019)**, the principal consent for the scheme will be the DCO. The DCO process provides development consent for the works and enable land acquisition, along with many consents and powers to be dealt with at the same time. The DCO application may, however, need to be supplemented by other applications. At this point (~~in~~ during the Examination submission of the DCO application) the majority of consents and all of the powers required have been included, or addressed within the DCO as permitted by various provisions of the 2008 Act. These are outlined in the **Consents and Agreement Position Statement (APP-019)**.

4.2.2 Several additional consents and permissions that may also need to be sought separately from the DCO are outlined in the **Consents and Agreement Position Statement (APP-019)**. These additional consents and permissions that may be required in relation to delivering the EMP are outlined in Table 4.1.

Table 4.1 Consents and permissions that may be required to deliver the EMP

Type	Issuing authority	Requirement
Badger Licence.	Natural England	Consent must be obtained before construction works can commence.
Great Crested Newt Licence.	Natural England	Consent must be obtained before construction works can commence.
Land Drainage Consent.	Somerset Drainage Board Consortium	Consent must be obtained for: Renewal of an existing gateway crossing by means of a culvert or bridge.

Type	Issuing authority	Requirement
		<p>Creation of a new gateway crossing by means of a culvert or bridge.</p> <p>Piping a watercourse for a length of 8 metres or less</p> <p>All structures or modifications in or within 9 metres of a watercourse (headwalls, sluices and fencing)</p> <p>Any temporary works in or within 9 metres of a watercourse, that will be in place for less than 6 months.</p>
Approval from Lead Local Flood Authority (LLFA)	Lead Local Flood Authority	A Sustainable Drainage Strategy (surface water) is a Local List Planning Application Requirement. It should include the detailed design, management and maintenance of surface water management system including Sustainable Drainage Systems (SuDS).
Exemptions for operations such as U1 (import of waste for use in construction) and T15 (crushing of aerosols to minimise hazardous waste) (if exemption limits can be met).	Environment Agency	PC to identify and register relevant and required exemptions with the Environment Agency.
Noise: Control of Pollution Act Section 61 Consent.	Environmental Enforcement Officer.	<p>In advance of start date for construction.</p> <p>Consultation required to agree hours of working and any specific noise and vibration limits.</p>
Waste Carrier Licence.	Environment Agency	<p>PC to ensure their selected waste disposal contractor(s) holds a valid and current Waste Carrier Licence</p> <p>Waste Carriers to supply completed Transfer Notes for any collections and removals of non-hazardous or inert waste from site. These must be kept for 2 years.</p> <p>Waste carriers to supply completed hazardous waste transfer notes for any collections and removals of hazardous waste from site. These must be kept for 3 years.</p>
Waste Disposal Licence.	Environment Agency	<p>PC to ensure that waste is taken to facilities permitted to deal with that waste stream (including hazardous waste).</p> <p>Waste facilities to provide documentation to show that they are permitted to receive the waste streams.</p>
Hazardous Waste Producer Registration.	Environment Agency	<p>Hazardous waste producer registration is no longer required for any site having hazardous waste removed from their premises.</p> <p>Completion of the Consignment Notes for the removal of Hazardous Waste.</p> <p>Where required specialists to be contracted, for example asbestos removal.</p>

## **5 Environmental asset data and as built drawings**

### **5.1 Highways England Environmental Information System**

5.1.1 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.

5.1.2 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.

### **5.2 Collection and submission of EnvIS data**

5.2.1 Highways England's Interim Advice Note (IAN) (84/10)<sup>14</sup> 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,

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<sup>14</sup> Highways England (2010) Interim Advice Note 84/10 Part 1 Volume 10 Section 10 Highways Agency Environmental Information System – EnvIS [online] available at: <http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian84pt1.pdf> (last accessed June 2018).

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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.

5.2.2 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.

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



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## 6 Details of maintenance and EMP monitoring activities

- 6.1.1 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), meeting the ISO14001 standards.
- 6.1.2 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

- 6.1.3 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

- 6.1.4 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.
- 6.1.5 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

- 6.1.6 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*

- 6.1.7 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***

- 6.1.8 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.
- 6.1.9 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***

- 6.1.10 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.
- 6.1.11 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***

- 6.1.12 All the PC Risk Assessments, Method Statements and COSHH forms must consider environmental impacts and sensitivities in addition to health and safety concerns.
- 6.1.13 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.

## 7 Induction, training and briefing procedures for staff

### 7.1 Introduction

- 7.1.1 Table 7.1 identifies an indicative programme of training on environmental issues relevant to the scheme that have been identified 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
- 7.1.2 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.
- 7.1.3 The list below 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
- 7.1.4 Any additional induction and training requirements should be inserted within Table 7.1 below as they are identified throughout the lifetime of the scheme, by the PC.

Table 7.1 Indicative list of induction and TBT training required for the scheme

Topic	Personnel	Delivery	Delivery Format
Competent resources (staff)	All	By lead staff resource or employer id sub-contractor prior to commencement of activities.	Supply of specific certificates, for example Construction Skills Certification Scheme (CSCS) Project Cards, training confirmation.
Reporting of environmental observations and suggestions.	All	Site induction	Presentation and environmental reporting cards to be supplied. Posters with site reporting and environment contact numbers.
Communications to public.	All	Site induction	Follow Considerate Constructors Scheme principles (CCS) or a Communication Plan, if required.
Spill kit use.	All	Site induction	Toolbox talks and Deployment Training Session.
Refuelling / mechanical repairs and maintenance (off and on site)	All	Site induction	The Principal Contractor Site Induction Pack and PowerPoint Presentation (if applicable).

<b>Topic</b>	<b>Personnel</b>	<b>Delivery</b>	<b>Delivery Format</b>
Tree root protection areas (RPAs)	All staff	Site induction	The Principal Contractor Site Induction Pack and PowerPoint Presentation (if applicable).
Waste from Welfare units and offices – Sewage	All staff	Site induction	The Principal Contractor Site Induction Pack and PowerPoint Presentation (if applicable).
Chemical handling and storage	Stores manager and any persons with access or contact	Site induction	The Principal Contractor Site Induction Pack and PowerPoint Presentation (if applicable).
Ecological sensitivities	All	Site induction. Prior to works close to sensitive areas.	Toolbox talks where relevant and daily site briefings.
Presenting nuisance (noise, vibration, dust and odours)	Any specialist installations (for example breaking out concrete, existing pavement) machine drivers and banks-men.	Site induction. Prior to works close to sensitive areas.	Toolbox talks where relevant and daily site briefings.

## 7.2 Environmental competencies

- 7.2.1 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.
- 7.2.2 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.

## 7.3 Training and site induction

- 7.3.1 All site personnel and visitors are to receive Site Safety induction and Environmental Awareness training from the PC before commencing activities on site. 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).

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- 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.

## **7.4 Toolbox talks and induction supporting materials**

- 7.4.1 Toolbox talks will 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.

## 8 Glossary

Term and abbreviation if necessary	Definition
Development Consent Order (DCO)	A (DCO) is the means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects (NSIP). This includes energy, transport, water and waste projects.
Construction Environmental Management Plan (CEMP)	A CEMP includes the specific measures that will be taken to control and manage the environmental impacts whilst the project is under construction that may otherwise occur for each of the environmental topics, such as noise, air quality, water resources and ecology. In addition, a description of the planned works and the general site arrangements should be included in the CEMP. The Principal Contractor will be responsible for ensuring the measures specified within the CEMP are implemented.
Contaminated Land Risk Assessment	The management and remediation of contaminated land that, in its current state, is causing or has the potential to cause significant harm or significant pollution of the water environment, is regulated by legislation contained within the Environmental Protection Act (1990) known as Part IIA.
Dust	The word 'dust' usually refers to particulate matter in the size range 1-75 microns in diameter. Dust can be mechanically transported either by wind or re-suspension by vehicles. It can also arise from wind erosion on material stock piles and earth moving activities.
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, water quality 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.
Environmental Clerk of Works	An environmental or construction professional with direct responsibility for monitoring compliance with planning consents, environmental permits, legislation and mitigation
Flood Risk Assessment (FRA)	An assessment of the likelihood of flooding in a particular area so that development needs and mitigation measures can be carefully considered.
Ground Investigation	Geotechnical investigations are performed by geotechnical engineers or engineering geologists to obtain information on the physical properties of soil and rock around a site.
Handover Environmental Management Plan (HEMP)	A management plan that contains essential environmental information needed by the body responsible for the future maintenance and operation of the asset.
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.
ISO 14001 Environmental Management Systems (EMS)	An ISO 14001 environmental management system (or commonly referred to as an EMS) is a structured system designed to help organisations manage their environmental impacts and improve environmental performance caused by their products, services and activities.
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 Wildlife Site (LWS)	Non-statutory sites that are given protection under the planning process.



Term and abbreviation if necessary	Definition
Materials Management Plan (MMP)	The Materials Management Plan (MMP) identifies materials to be generated and clarifies how they will be reused. The Materials Management Plan must be approved by an independent Qualified Person (registered with CL:AIRE).
Mitigation	Measures intended to avoid, reduce and, where possible, remedy significant adverse environmental effects.
Natural England	<p>Natural England are responsible for:</p> <ul style="list-style-type: none"> <li>• Helping land managers and farmers protect wildlife and landscapes.</li> <li>• Advising on the protection of the marine environment in inshore waters (0 to 12 nautical miles).</li> <li>• Improving public access to the coastline.</li> <li>• Managing 140 National Nature Reserves and supporting National Trails.</li> <li>• Providing planning advice and wildlife licences through the planning system.</li> <li>• Managing programmes that help restore or recreate wildlife habitats.</li> <li>• Conserving and enhancing the landscape.</li> </ul> <p>Providing evidence to help make decisions affecting the natural environment.</p>
Operation	The functioning of a project on completion of construction.
Receptor	A defined individual environmental feature that has the potential to be affected by a project.
Registered Park and Garden (RPG)	A park or garden that has been registered under Historic England's 'Register of Historic Parks and Gardens of special historic interest in England' due to its high level of historic interest.
Special Area of Conservation	A Special Area of Conservation (SAC) is defined in the European Union's Habitats Directive (92/43/EEC), also known as the Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora.
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.
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.
Soils Management Plan (SMP)	A soil management plan is an important part of ensuring soil sustainability during construction projects.
Written Scheme of Investigation (WSI)	A Written Scheme of Investigation outlines known and potential archaeological features and deposits or built heritage elements on a site and suggests a structure for exploring them using the latest, most appropriate and cost-effective archaeological techniques.

## **Annex A – Environmental constraints plan**

## **Annex B – Relevant management plans**

### **B.1 Outline Site Waste Management Plan**

## **B.2 Outline Materials Management Plan**

## **B.3 Outline Soils Management Plan**

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## B.4 Arboricultural Method Statement

An Arboricultural Method Statement should be prepared prior to construction by the appointed Arboriculturalist to ensure the appropriate protection to trees during construction, in line with the guidance contained within BS 5837:2012<sup>15</sup>.

A precautionary approach towards tree protection should be adopted and any operations, including access, proposed within the RPA (or crown spread where this is greater) should be described within the arboricultural method statement, in order to demonstrate that the operations can be undertaken with minimal risk of adverse impact on trees to be retained.

The arboricultural method statement should be appropriate to the proposals and might typically address some or all of the following, incorporating relevant information from other specialists as required:

- Removal of existing structures and hard surfacing
- Installation of temporary ground protection
- Excavations and the requirement for specialised trenchless techniques
- Installation of new hard surfacing – materials, design, constraints and implications for levels
- Specialist foundations – installation techniques and effect on finished floor levels and overall height
- Retaining structures to facilitate changes in ground levels
- Preparatory works for new landscaping
- Auditable / audited system of arboricultural site monitoring, including a schedule of specific site events requiring input or supervision.

The AMS should also include a list of contact details for the relevant parties.

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<sup>15</sup> British Standard (2012) BS 5837:2012 Trees in relation to design, demolition and construction. [online] available at: <https://shop.bsigroup.com/ProductDetail/?pid=00000000030213642> (last accessed June 2018).

## **B.5 Outline Traffic Management Plan**



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## **B.6 Communications Relations Strategy**

A Community Relations Strategy would be produced prior to construction, by the appointed Contractor. The Community Relations Strategy should aim to identify issues that are important to local people through ongoing dialogue and outreach and aims to use feedback received to improve scheme proposals. A Community Relations Strategy also acts as an effective communications channel to keep local people informed of updates and progress. Ideally a 2-way process, an effective community engagement strategy is based on transparency and meaningful dialogue that engenders trust and confidence between promoter and communities.

- Community outreach
- Issues understanding
- Scheme updates
- Scheme optimisation

## B.7 Landscape and Ecological Management Plan

A Landscape and Ecological Management Plan (LEMP) would be produced by the appointed Landscape Architect and Ecologist prior to construction. This should take the form of a Series 3000 Landscape and Ecology<sup>16</sup>. The Series 3000 would specify the landscape construction and maintenance works required for the contracted works.

Specified elements within the Series 3000 should include timings, frequency, preparatory works, materials, tools, reference drawings, procedures, responsibilities and exclusions required for the contractor to implement, establish and maintain the scheme. It is recommended that the Series 3000 document is made up of the following aspects detailed within Table B.1 below:

<u>Chapter</u>	<u>Indicative contents / aim of chapter</u>
<u>Introduction</u>	<ul style="list-style-type: none"> <li>• <u>Scheme description</u></li> <li>• <u>Objectives of the LEMP</u> <ul style="list-style-type: none"> <li>- <u>The Landscape and Ecological Management Plan (LEMP) will provide information on the management of landscape and ecological elements within the site boundary during its operation. The LEMP will identify the landscape and ecological mitigation measures set out in the Environmental Statement for the Scheme and provide information on how the measures will be delivered through landscape works and management in the future to ensure the objectives of the Scheme are achieved. It should be noted that the LEMP is intended to be a “live” document and to evolve during the construction process.</u></li> <li>- <u>The LEMP will identify the management types and maintenance objectives for the five-year aftercare period as well as providing a long-term management strategy with the long term aim of creating a sustainable landscape and habitat areas. It will also provide a document suitable for the future management of the site by others.</u></li> </ul> </li> <li>• <u>Roles and responsibilities</u></li> </ul>
<u>ENVIS Requirements</u>	<u>This section will address EnvIS (Environmental Information System) as Highways England’s primary tool for the recording of environmental assets, and the prescription of environmental management actions. Environmental design data will be submitted to Highways England in accordance with IAN 84/10 to provide a useful mechanism to review the progress and performance of environmental objectives in the future.</u>
<u>Landscape and Ecological Context</u>	<ul style="list-style-type: none"> <li>• <u>Landscape Character and Visual Context and general mitigation approach.</u></li> <li>• <u>Ecological Context and general mitigation approach.</u></li> </ul>
<u>Landscape and Environmental objectives and functions</u>	<u>Definition of landscape elements and landscape and environmental function in line with DMRB Volume 10 for each element (planting type or other environmental mitigation feature) relevant to the scheme for example Species Rich Grassland or ecological feature such as hibernacula.</u>

<sup>16</sup> Highways England (2001) Manual of Contract Documents for Highway Works Volume 1 Specification for Highway Works: Series 3000 Landscape and Ecology [online] available at: [http://www.standardsforhighways.co.uk/ha/standards/mchw/vol1/pdfs/series\\_3000.pdf](http://www.standardsforhighways.co.uk/ha/standards/mchw/vol1/pdfs/series_3000.pdf) (last accessed June 2018).

Chapter	Indicative contents / aim of chapter
<u>Landscape and Ecological Management</u>	<ul style="list-style-type: none"> <li>• <u>Reference to Series 3000 (to be appended to LEMP) for detailed specification of actions to be undertaken during implementation and maintenance of planting during aftercare period.</u></li> <li>• <u>Landscape Management</u></li> <li>• <u>Management actions and frequency of actions required for each landscape element within scheme boundary.</u></li> <li>• <u>Pre-construction and construction phase habitat and species mitigation measures, including those required under Natural England development licences. These include:</u> <ul style="list-style-type: none"> <li>- <u>Pre-construction or update surveys;</u></li> <li>- <u>Creation or enhancement of habitats as receptor areas for species, to include installation of features such as wildlife boxes and hibernacula;</u></li> <li>- <u>Exclusion of species such as great crested newts, reptiles barn owls and badgers from the works area, where necessary;</u></li> <li>- <u>Sensitive timing and method of habitat removal, to include destructive searches where appropriate and retention of soils for seedbank translocation of sensitive habitats;</u></li> <li>- <u>Implementation of temporary mitigation measures, such as fencing/ demarcation of retained habitats and buffers around sensitive receptors;</u></li> <li>- <u>Implementation of measures to ensure continued habitat connectivity during construction, such as dead hedging;</u></li> <li>- <u>Ecological Clerk of Works responsibilities;</u></li> <li>- <u>Toolbox talks to site personnel;</u></li> <li>- <u>Supervision of installation of permanent mitigation features such as the badger tunnel; amphibian ladders; wildlife boxes (additional to those mentioned above) and bat house;</u></li> </ul> </li> <li>• <u>Post construction management actions and frequency of actions required for ecological mitigation interventions, to include</u> <ul style="list-style-type: none"> <li>- <u>Creation of habitat areas including nutrient poor managed grassland; wildflower and species rich grassland; woodland and hedgerow habitat;</u></li> <li>- <u>Management of retained and created habitats up to 5 years post construction to optimise benefits for protected and notable species;</u></li> <li>- <u>Monitoring of species for up to 5 years post construction including great crested newts; reptiles, barn owls and badgers.</u></li> </ul> </li> </ul>

- General
- Weed Control
- Control of Rabbits and Deer
- Ground Preparation
- Grass Seeding, Wildflower Seeding and Turfing
- Planting
- Grass, Bulbs, and Wildflower Maintenance to increase biodiversity
- Watering
- Establishment Maintenance for Planting
- Maintenance of Established Trees and Shrubs
- Management of Waterbodies
- Special Ecological Measures



## **B.8 Scheme Asbestos Management Plan**

## **Annex C – Environmental method statements**

To be produced prior to construction by the appointed PC. This section should include relevant method statements where commitments have been made to do so, including, but not limited to:

- Protected species
- Buried archaeology

## **Annex D – Emergency procedures and record of environmental incidents**

To be produced prior to construction by the appointed PC. This section should include:

- confirmation of procedures in the event of an environmental emergency.

A record of environmental incidents (in table format) if occurred to include the following information:

- date and location of the incident;
- details of the reporting procedure followed;
- description of the incident and relevant legislation;
- remedial actions;
- lessons learnt; and
- details of any contact with enforcing bodies.



## **Annex E – Final environmental investigation and monitoring reports**

To be produced prior to construction by the PC. This section should include:

- copies of relevant reports (relating to protected species / habitats and cultural heritage investigations, and any environmental monitoring reports) or cross reference to the location of these if easily accessible elsewhere.