

**A66 Northern Trans-Pennine Project
TR010062**

**2.7 Environmental Management Plan
Annex C1 Working in and Near SAC
Method Statement (Rev 2) (Tracked)**

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**2.7 ENVIRONMENTAL MANAGEMENT PLAN
ANNEX C1 WORKING IN AND NEAR SAC METHOD
STATEMENT**

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C1 Working in and Near SAC Method

C1.1 Introduction

Overview and purpose

- C1.1.1 This document forms Annex C1 of the Environmental Management Plan (EMP) (Application Document 2.7). Annex C1 is an extended essay plan for a Method Statement for working in or near Special Areas of Conservation (SAC) for the A66 Northern Trans-Pennine project (the Project). It will be completed on an iterative basis by the Principal Contractor (PC) as the Project progresses through the detailed design and construction planning stage, resulting in a final method statement for consultation and approval prior to construction commencing.
- C1.1.2 This Method Statement is intended to set out the detail of the methods to be employed during any works within or near to any SAC and describe how the key environmental controls will be implemented.
- C1.1.3 The Method Statement includes:
- Location of SACs in proximity of the Project and description of key features and their sensitivity
 - Brief description of works to be undertaken in proximity to SACs
 - Equipment to be used
 - Step by step description of the method to be implemented
 - Key environmental control measures to be applied
 - Monitoring to be undertaken.
- C1.1.4 For clarity, this Method Statement pertains to all construction activities to the extent that they fall within the boundary of the SAC itself, or any functionally linked watercourses (as defined within the Environmental Statement, Application Document Number 3.2 and Habitats Regulations Assessment Stage 2: Statement to Inform Appropriate Assessment (SIAA) Document Number 3.6), or within 200m of the boundary of the SAC or functionally linked watercourses (or within the floodplain of those watercourses, whichever is the greater distance).

Project Description

- C1.1.5 The A66 lies within three local planning authority administrative areas: Eden District, Durham County and Richmondshire District as illustrated in Figure 1.1: A66 Location and Overview Plan, in Chapter 1: Introduction (ES Volume 1, Application Document Number 3.2).
- C1.1.6 The Project will be delivered as a number of schemes:
- M6 Junction 40 to Kemplay Bank
 - Penrith to Temple Sowerby
 - Temple Sowerby to Appleby
 - Appleby to Brough
 - Bowes Bypass
 - Cross Lanes to Rokeby
 - Stephen Bank to Carkin Moor

- A1(M) Junction 53 Scotch Corner.

- C1.1.7 The western section of the project, comprising the M6 Junction 40 to Kemplay Bank, Penrith to Temple Sowerby, Temple Sowerby to Appleby and Appleby to Brough schemes interact with the catchment area of the River Eden SAC. A section of the route in the Temple Sowerby to Appleby scheme will cross the Trout Beck and its associated flood plain on a new viaduct before heading in a south easterly direction towards Crackenthorpe. Trout Beck forms part of the River Eden SAC and River Eden SSSI. Whilst the floodplain beyond the riparian zone (which consists of heavily improved grassland on both banks) is not with the SAC/SSSI boundary, it serves a key role in terms of supporting river process. In addition, new viaducts and bridges will be provided at the Appleby to Brough scheme to cross over Moor Beck and Cringle Beck, which are functionally linked to the River Eden SAC and support multiple species protected by this designation.
- C1.1.8 All works within the catchment of the River Eden (in particular any works close to the watercourses or within the floodplain of the river and its tributaries) have the potential to affect the SAC, and specific control measures must be implemented to prevent any impacts arising, as set out in the EMP (Application Document Number 2.7).
- C1.1.9 The North Pennine Moors SAC is also located between the Appleby to Brough and Bowes Bypass schemes. No works are proposed in close proximity to this SAC, and the main control measure to be implemented (as described in the EMP, Application Document Number 2.7) is the prevention of movement of construction traffic between the eastern and western parts of the Project, in order to minimise the potential for increased emissions on the existing A66 along this reach. This site is not discussed further in this method statement as no specific construction works are proposed in proximity to the SAC.
- C1.1.10 Future iterations of the SAC Method Statement will accord with this extended essay plan and will provide detailed information regarding the chosen method for working in and around the River Eden SAC and the appropriate environmental control measures to be applied to ensure the highest level of protection for the SAC and its qualifying attributes.

C1.2 Baseline Conditions

River Eden SAC

Legislation

- C1.2.1 The Conservation of Habitats and Species Regulations 2017 offer protection to a number of plant and animal species via the designation of Special Areas of Conservation (SAC) and Special Protection Areas (SPA). In the United Kingdom these Regulations are implemented through the WCA 1981 (as amended).
- C1.2.2 The Regulations also offer protection to a number of 'European Protected Species' (EPS), and make it an offence to deliberately capture, kill,

disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4.

- C1.2.3 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019¹ does not make any substantive changes to the protection of SACs, SPAs or species classed as EPS. It does however change the nomenclature of the protected sites network within the UK. The Natura 2000 site network, comprising SPAs, SACs and Ramsar sites is now officially titled the National Sites Network within the UK.

Key sensitivities

- C1.2.4 The qualifying habitats and key sensitivities of the River Eden SAC relevant to the Project include:

- Rivers with floating vegetation often dominated by water crowfoot: Watercourses of plain to montane levels with the *Ranunculon fluitantis* and *Callitricho-Batrachion* vegetation.

- C1.2.5 Annex II species that are a primary reason for designation of this site include:

- Otter (*Lutra lutra*)
- Sea lamprey (*Petromyzon marinus*)
- Brook lamprey (*Lampetra planeri*)
- River lamprey (*Lampetra fluviatilis*)
- Atlantic salmon (*Salmo salar*)
- Bullhead (*Cottus gobio*)
- White-clawed (or Atlantic stream) crayfish (*Austropotamobius pallipes*).

- C1.2.6 The SAC is connected² either by the river habitat passing under the A66 or for part of its length being adjacent to the Project. A number of minor tributaries of the River Eden which do not form part of the SAC itself, have been demonstrated to support the species for which the site is designated, and are therefore considered functionally linked and should be treated the same as the SAC itself.

- C1.2.7 A map will be provided as part of the method statement clearly demarcating proposed works within River Eden SAC (and all functionally linked watercourses), or within 200m or the floodplain (whichever is the greater distance) of the SAC, highlighting the location of the protected watercourses and the extent of the floodplain, as well as proposed working areas.

Key risks

- C1.2.8 The Project interacts with watercourses which are designated as part of the River Eden SAC. The key aspects of construction that interact with the SAC are the crossing of the Trout Beck and its associated flood plains,

¹ The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 <https://www.legislation.gov.uk/ukdsi/2019/9780111179512/regulation/21> Accessed 27/01/22

² 'Connectivity' is a review of the presence of connective semi-natural habitats between the designated site and the Order Limits, including the identification of any barriers limiting connectivity.

the crossing of a series of functionally linked watercourses to the north of Warcop and the installation of a number of new drainage outfalls.

C1.2.9 Key risks to the SAC associated with construction include:

- Disturbance to key species (as outlined in section C1.2.5)
- Species mortality / injury
- Damage to aquatic and riparian habitats
- Introduction and/or spread of invasive non-native species (particularly Himalayan balsam and signal crayfish)
- Introduction of crayfish plague
- Altered surface and groundwater quality, quantity
- Contamination of surface and groundwater
- Impacts to species associated with changes to shading and lighting
- Disruption of flood flows and altered geomorphological processes

C1.2.10 This section of the method statement will be updated to include location specific risks once the working methods for each of the crossings and all works within the floodplain of the River Eden and its tributaries are finalised through the detailed design of the Project.

C1.3 Construction Methodology

Overview

C1.3.1 As part of the Temple Sowerby to Appleby scheme, there is the requirement to construct a large overbridge over the Trout Beck, using a multi-span solution with multiple piers located in the Trout Beck flood plain to cover a distance of approximately 400m (in order to prevent disruption of flood flows and geomorphological processes). No piers shall be located in Trout Beck itself. For the Appleby to Brough scheme there is a requirement to construct single span viaducts over ~~the tributaries of the Trout Beck, which include~~ the Moor Beck and Cringle Beck. Land has also been identified in the area of the Moor Beck and Cringle Beck for Flood Compensation areas to be provided, based on final designs that shall be subject to consultation with the Environment Agency and the Lead Local Flood Authority in accordance with the procedure set out in Section 1 of the EMP-as required.

C1.3.2 Other works may be required within the floodplain of the River Eden SAC, including installation of outfalls and drainage features.

C1.3.3 Given the sensitivity of the environment at these locations, the PC will investigate the potential for, and implement where practicable, off-site construction of as many features of the Project within close proximity to the SAC as possible. This will minimise the risk of pollution of watercourses associated with the SAC and reduce the working time in the vicinity of the SAC, thus reducing disturbance effects.

Location of works

C1.3.4 ES Figure 14.1: Surface Water Features and ES Figure 6.1: A66 Ecology Statutory and Non-Statutory Designated Sites Map (Application Document 3.3) shows the relevant watercourses and their floodplains.

Construction programme and phasing

- C1.3.5 This section will detail out the programme for the specific works associated with the SAC.
- C1.3.6 Works giving rise to significant noise and vibration and any in river working is required to be timed outside of the key migration and spawning season (1st October to 31st of May). In reiver working will not be required in the River Eden SAC but may be required in functionally linked watercourse in the Appleby to Brough scheme.

Typical construction methods

Preparatory works

- C1.3.7 To construct the watercourse crossing bridges, it is expected that a temporary bridge may be required (in particular at Trout Beck) to facilitate movement of plant and materials across the watercourse. All temporary crossings of Trout Beck or other watercourse functionally linked to the River Eden SAC will be clear span crossings. These ~~is~~ will be constructed in a manner that avoids any direct impacts on the watercourse or its riparian habitats (i.e. works within 8m of the watercourse itself will be avoided). The temporary bridge(s) will be installed early in the construction phase and will remain present until the main crossing is operational and plant and materials can be transported on the main bridge itself.
- C1.3.8 Where required, ~~a~~ haul road(s) will be constructed across the floodplain for the full length of the crossing. Where these are located within the floodplain of watercourses functionally linked to the SAC, they would avoid the introduction of foreign sediments into the floodplain or watercourses by using modular metal folding roads/grids rather than imported materials, so– as to not impact the geomorphology of the sensitive area. This will be constructed of compacted clean stone, or a suitable alternative. The haul road(s) will be constructed at ground level and any building up of levels within the flood plain will be avoided where practicable, to ensure flood flows can operate as normal. The length of any ramp required between the haul road and temporary bridge structure shall be limited, as far as reasonably practicable, to prevent loss of floodplain storage.
- C1.3.9 Temporary working platforms will be constructed at each pier location to facilitate the installation of the piers and the movement of the bridge sections into place. These will be large enough to accommodate piling rigs and cranes as required. Again these will be constructed at ground level where practicable, to avoid building up of levels within the floodplain.
- ~~C1.3.9~~ C1.3.10 Works within the floodplain will include measures to maintain flood storage and flood flow conveyance during construction works, as evidenced in the Ground and Surface Water Management Plan (see REAC commitment D-RDWE-01).

Foundations

~~C1.3.10~~C1.3.11 Subject to the site's ground investigation records and the size of the overbridge(s) required, foundations may be a pile raft solution, individual piles or a mass fill concrete base. This will be finalised in the detailed design phase.

~~C1.3.11~~C1.3.12 To construct the pile foundation solution, a conventional piling rig is likely to be used to undertake the drilling and concreting of the piles below ground. Piles are normally circular columns in the ground, ranging from depths of 5m to over 15m made from concrete and steel reinforcement. Depending on the design these piles could be connected together at the surface with a large reinforced concrete structure known as a pile cap.

Abutments and piers

~~C1.3.12~~C1.3.13 To form the abutment and pier walls, where it is not possible to form them off-site, it is likely that they will be cast in situ using concrete and steel reinforcement. To construct the walls, large wooden or metal shutters will be constructed to contain the concrete and steel reinforcement. Readymix Concrete will then be poured into the enclosed shutter using a crane with a concrete skip or with the use of a concrete pump.

~~C1.3.13~~C1.3.14 Depending on the overbridge design and span arrangements, a central pier or piers may not be required for smaller structures. When considering the abutments or pier construction methodology, these could also be constructed from precast units or reinforced concrete columns that are surrounded by earth retained solutions (abutments only).

Bridge deck

~~C1.3.14~~C1.3.15 To form the bridge deck, it is likely that steel or precast concrete beams will be manufactured offsite and brought to the scheme in question via large road transport vehicles during a possible traffic management closure. The beams will then be lifted into position using a crane from a dedicated lift site on or off the A66 road. During such key lifts, it is likely that the A66 and associated connecting roads will require road closures to ensure the safe installation.

~~C1.3.15~~C1.3.16 Depending on the bridge deck design and size, an onsite pre-casting facility may be considered if it forms a viable construction solution with added environmental benefits. If implemented, this will be located away from the catchment of the River Eden SAC. Infrastructure requirements must also be taken into consideration when evaluating this option, noting any additional impacts on stakeholders.

~~C1.3.16~~C1.3.17 Depending on the number of beams, their width and spacing, it is likely that precast panels will be placed between the beams to formulate the deck. It is then likely that steel reinforcement will be fixed on the newly formed surface and concrete placed, to integrate the beams and support formwork. Once the deck is complete, drainage, surfacing and road markings will be installed.

Culverts

C1.3.18 If any temporary culverts are required in Trout Beck or other watercourses functionally linked to the River Eden SAC they shall comply with the Institute of Fisheries Management Fish Pass Manual for new culverts unless otherwise agreed with the Environment Agency.

Installation of outfalls

~~C1.3.17~~C1.3.19 A number of new drainage outfalls will be constructed, discharging to tributaries of the River Eden SAC (including some that form part of the SAC itself). Where these outfalls discharge at a location with existing hard banks, they will be designed to tie into the existing hard structure. The methodology to be implemented at these locations will be developed in such a way to reduce any risk of contamination of the watercourses and minimising any working within the watercourse.

~~C1.3.18~~C1.3.20 Where outfalls discharge to natural banks these will be designed to be open ditches (i.e. no new hard outfalls will be created). They will be designed to facilitate erosion patterns, in order to allow the natural migration of watercourses to continue. Such ditches will be excavated using appropriate machinery. The ditch will be created fully prior to the outfall being excavated to minimise the risk of sediment-laden runoff entering the watercourse. All works will be done from as far away from the watercourse banks as practicable.

Detailed construction methodology

Watercourse crossings

~~C1.3.19~~C1.3.21 This section of the method statement will be updated once detailed construction planning is complete to describe the specific working methods to be implemented at each crossing location, including maps showing location of any temporary structures and phasing of the construction. A step by step methodology will be described for each phase of the works, including detail of equipment to be used.

Installation of outfalls

~~C1.3.20~~C1.3.22 This section will be updated to describe specific working methods at each outfall location associated with the SAC. A step by step methodology will be described for each phase of the works, including detail of equipment to be used.

C1.4 Control Measures

Timing of works

C1.4.1 This section will set out how specific measures will be implemented at each location relevant to the SAC in order to ensure impacts are minimised as far as practicable.

- C1.4.2 This will include detailed construction timings in line with the programme constraints set out in the Statement to Inform Appropriate Assessment (Application Document 3.6).

Working hours

- C1.4.3 Most construction works will be undertaken during standard day working hours of 7am until 6pm. Works in and near the SAC should be avoided at night, however, if it is essential to undertake works at night or weekends for the purposes of safety and cannot be avoided the PC will liaise with the Natural England and other relevant stakeholders to agree timing of works and relevant mitigation if required.

Pollution prevention

- C1.4.4 This section will set out how specific pollution prevention measures will be implemented at each location relevant to the SAC in order to ensure no pollution occurs and impacts are minimised as far as practicable.
- C1.4.5 This is likely to include adhering to pollution prevention guidelines and best practice, for example measures outlined in *Pollution prevention for businesses (Department for Environment, Food and Rural Affairs, 2016)*³.
- C1.4.6 All works within the floodplain of watercourses associated with the SAC will have specific control methods in place to ensure no chemicals, fuels or other potentially polluting substances are stored within the floodplain in order to prevent pollution during a flood event.

Erosion control

- C1.4.7 All works direct to the banks of watercourses associated with the SAC will be kept to a minimum (limited to only installation of new outfalls). This section will set out how specific erosion control measures will be implemented at each location relevant to the SAC in order to ensure impacts are minimised as far as practicable.
- C1.4.8 This is likely to include the installation and maintenance of erosion control measures where any aspect of the watercourse banks are disturbed until the work area has stabilised and vegetation became sufficiently re-established to prevent erosion of the bank. Where there is a risk of sediment run-off, sediment interception techniques would be used, described below.

Sediment control

- C1.4.9 This section will set out how specific sediment control measures will be implemented at each location relevant to the SAC in order to ensure impacts are minimised as far as practicable.
- C1.4.10 This is likely to include phasing of SuDS and required drainage implementation as part of pre-commencement and preparatory works ahead of main construction works to manage sediment runoff. This requirement is especially important ahead of any archaeological

³ Department for Environment, Food and Rural Affairs (2016) Pollution prevention for businesses

investigations and soil strips, which will expose large amounts of soil. Where the permanent drainage cannot be installed ahead of such works, temporary drainage will be implemented, including full sediment management control.

- C1.4.11 A sediment management plan will be required to be produced by the PC to determine what the appropriate controls are for the site. This may include details of additional temporary cut-off ditches to manage sediment runoff, silt fences, bunds and as a worst-case precaution the use of siltbuster water processing devices.
- C1.4.12 Areas of exposed sediment deemed at risk of erosion during heavy rainfall or flood inundation should be protected using either temporary measures (e.g. sheeting) or semi-permanent measures (for example coir matting) until vegetation is able to establish on these surfaces.

Flood risk management

- C1.4.13 This section will set out how specific flood risk management measures will be implemented at each location in order to ensure impacts from flooding are minimised as far as practicable. The likely considerations required at this stage are outlined in sections below and will be developed in full by the PC.
- C1.4.14 Construction platforms will be located in the floodplain. These will be required to be kept as low as possible in the floodplain so platforms are allowed to flood, rather than become a barrier to the flood event and risk wider area flooding.
- C1.4.15 The PC will work with the Environment Agency to ensure they are signed up to all flood alerts and are identified on the priority list of contacts for flood warnings. Given the flashy nature of the watercourses in the Project area, floods can occur with little warning and therefore ongoing management procedures will be important to prevent impacts (e.g. storage of plant and materials away from floodplains, removal of plant from floodplain each night, construction of temporary works to be flood resilient).

~~C1.4.15~~C1.4.16 High risk works (such as those involving large numbers of workers and use of chemicals) in flood risk areas shall be registered with the Environment Agency and added to the Flood Warning Duty Officers List of Works and Defects system (Schedule 8 register). This will allow the Environment Agency 24/7 duty team to be in direct contact with the relevant responsible person (as noted on the register) to provide early warnings of potential flooding from sources outside of the site in and out of normal working hours.

Material storage and plant transfer

- ~~C1.4.16~~C1.4.17 This section will set out how specific material storage and plant transfer measures will be implemented at each location relevant to the SAC in order to ensure impacts are minimised as far as practicable.

~~C1.4.17~~C1.4.18 Strict biosecurity measures will be required to be put in place. Measures will be required to specify no transfer of plant from eastern to western schemes without appropriate safeguards to avoid the introduction and/or spread of invasive non-native species to the SAC. The same measures – (e.g. cleaning and disinfection of vehicle wheels and any equipment to be used in watercourses) will also be required to be carried out for all plant and personnel newly arriving to site from other partlocations of the county/country outwith the site.

~~C1.4.18~~C1.4.19 Long term ~~M~~material storage within Flood Zone 3 shall be avoided. Where materials are required for imminent usage, ~~D~~details regarding temporary material storage in flood prone areas will be developed by the PC and provided in this section.

Bank stability

~~C1.4.20~~ If any new or temporary structures are required that could affect bank stability, ~~T~~this section will set out how specific measures to maintain bank stability ~~at crossing locations~~ will be implemented at each location relevant to the SAC in order to ensure impacts are minimised as far as practicable. Evidence shall be included to demonstrate how the measures will be effective and that the techniques and materials used will not have a detrimental effect on the SAC.

Lighting

~~C1.4.19~~C1.4.21 This section will set out how specific lighting controls will be put in place at each location relevant to the SAC in order to ensure impacts from lighting are minimised as far as practicable.

~~C1.4.20~~C1.4.22 This is likely to include a requirement for avoiding 24-hour lighting as far as practicable. Where temporary and/or night lighting is required, this is required to be directional and pointed away from the river corridor. Details on wavelengths of lights and use of certain ecological friendly lighting specifications will be detailed in this section.

Pre-construction surveys

~~C1.4.21~~C1.4.23 Pre-construction surveys will be undertaken in accordance with the requirements set out in the EMP (Application Document Number 2.7). Pre-construction survey results will be used to inform species-specific mitigation measures.

~~C1.4.22~~C1.4.24 This section will be developed by the PC and include details on required pre-construction surveys for key species associated with the SAC.

Species specific mitigation

~~C1.4.23~~C1.4.25 This section will set out any species-specific construction control mitigation measures to be implemented at each location relevant to the SAC in order to ensure impacts to key species are minimised as far as practicable.

~~C1.4.24~~C1.4.26 The requirement for species-specific mitigation will be informed by the results of the pre-construction surveys.

~~C1.4.25~~C1.4.27 A baseline for each of the relevant ecological receptors of the River Eden SAC is included in the Statement to Inform Appropriate Assessment (Application Document 3.6)

SAC crossing habitat reinstatement and management

~~C1.4.26~~C1.4.28 The construction footprint of the Trout Beck crossing, and crossings of other watercourses functionally linked to the River Eden SAC ~~its functionally linked tributaries~~ will be reinstated through return to previous use, or re-planted as part of proposed environmental mitigation as soon as practicable following completion of the crossing works.

~~C1.4.27~~C1.4.29 This section will detail SAC watercourse habitat reinstatement and management measures following construction.