

The Sizewell C Project

8.3 Sizewell Link Road Landscape and Ecology Management Plan - Clean Version

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EXECUTIVE SUMMARY

This Sizewell link road Landscape and Ecology Management Plan (LEMP) provides clear objectives and principles for the establishment and long -term management of the landscape and ecological mitigation identified for the soft estate within the Sizewell link road site (hereafter referred to as the 'site'), following construction of the Sizewell link road. The spatial extent of the LEMP is the same as the area within the Illustrative Masterplan provided at Figures 4.2.2 to 4.2.8 within Volume 2, Chapter 4 of the Second Environmental Statement Addendum [REP5-068]. The aim of the LEMP is to ensure post-construction habitats are created correctly and managed for their successful establishment and integrated within the surrounding landscape.

Objectives for post-construction habitats and landscape areas have been informed and established through a review of ecological survey information, the landscape strategy, policy requirements and in response to site specific mitigation and consultation.

The overriding intention of the site re-instatement, once the Sizewell link road has been constructed, is to conserve, restore and enhance landscape character and biodiversity at a landscape scale to provide long-term benefits to the biodiversity of Suffolk as a whole. Where practicable, existing landscape features of importance for ecology and visual screening will be retained during construction.

New habitats will contribute to enhancing the landscape character of this section of the Ancient Estate Claylands and Rolling Estate Claylands. They will also minimise the visual impact of Sizewell link road in views from the surrounding landscape, minimise impacts on cultural heritage resources, improve access and recreation infrastructure and ensure the long-term sustainability and resilience of the landscape, including to predicted climate change.

Habitat creation approaches and subsequent management of the habitats that will be created are set out within this document including time frames.

Monitoring of post-construction and existing habitats must be undertaken to measure the success of the habitat establishment and subsequent management proposals and to determine if interventions are required.

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1 INTRODUCTION

- 1.1.1 This **Sizewell link road LEMP** provides clear objectives and general principles for the establishment and longer-term management of the landscape, and ecological mitigation identified for the area within the Sizewell link road site (hereafter referred to as the 'site'), following construction of the Sizewell link road. The spatial extent of the **LEMP** is the same as the area covered by the **Illustrative Masterplan** provided at **Figures 4.2.2** to **4.2.8** within **Volume 2**, **Chapter 4** of the **Second Environmental Statement (ES) Addendum** [REP5-068].
- 1.1.2 The aim of the **LEMP** is to ensure newly created post-construction habitats are successfully created and then correctly managed to ensure their successful establishment and integration within the surrounding landscape.
- 1.1.3 The overarching objective of the **LEMP** is to set out how the habitats to be established within along Sizewell link road must be created and then managed in the long-term. Objectives for these habitats and areas have been informed and established through a review of ecological survey information, the landscape strategy, policy requirements and in response to site specific mitigation and consultation.
- 1.1.4 The **LEMP** must be reviewed throughout the detailed design process to ensure it continues to reflect the details of the target communities identified. Details of how the implementation of the **LEMP** must be monitored are set out in section 6.
- 1.1.5 Detailed landscape schemes will be submitted pursuant to Requirement 22A before the Sizewell link road is commenced. The landscape scheme must then be managed in accordance with this **LEMP** unless otherwise agreed by ESC pursuant to Requirement 22A of the dDCO. The first five years of management are critical to the establishment of the landscape. Any agreements with the Highway Authority under Article 21 of the dDCO for adopting the highway will include landscape and ecology management obligations.
- 1.1.6 Detailed descriptions of the proposed development and the different phases of development are provided in the amended version of **Volume 6**, **Chapter 2** of the **ES** [REP5-058].
- 1.1.7 This document should be read in conjunction with the following documents:
 - Code of Construction Practice (CoCP) (Doc Ref. 8.11(C));
 - Associated Development Design Principles [REP7-035];

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- Sizewell Link Road Plans Plans for Approval: Sizewell Link Road Proposed Landscape Masterplan and Finished Levels – Key Plan and Sheets 1 to 4 (Doc Ref. 2.10(B));
- A Draft protected species licence for bats (Sizewell C Project Bat Method Statement [REP7-080]) and great crested newt [REP7-026 and REP7-026a] and non-licensable method statements for bats and reptiles, as appended to the CoCP (Doc Ref. 8.11(E)).
- 1.1.8 Level 1 control documents will either be certified under the DCO at grant or annexed to the DoO. All are secured and legally enforceable. Some Level 1 documents are compliance documents and must be complied with when certain activities are carried out. Other Level 1 documents are strategies or draft plans which set the boundaries for a subsequent Level 2 document which is required to be approved by a body or governance group. The obligations in the DCO and DoO set out the status of each Level 1 document.
- 1.1.9 This **LEMP** is a Level 1 document and must be complied with through the construction in the management of the Sizewell link road unless otherwise agreed with East Suffolk Council. This is secured by Requirement 22°(5) of the **DCO**. Any updates to this document must be approved by the East Suffolk Council in accordance with the procedure set out in Schedule 23 of the DCO. This **LEMP** requires further documents to be submitted for approval at particular stages of the Sizewell C Project:
 - Habitat creation method statements (to East Suffolk Council)
 - Monitoring strategy (to the Ecology Working Group)
- 1.1.10 Where further documents or details require approval, this document states which body or governance group is responsible for the approval and/or must be consulted. Any approvals by East Suffolk Council or Suffolk County Council will be carried out in accordance with the procedure in Schedule 23 of the DCO. The DoO establishes the governance groups and sets out how these governance groups will run and, where appropriate, how decisions (including approvals) should be made. Any updates to these further documents or details must be approved by the same body or governance group and through the same consultation and procedure as the original document or details.
- 1.1.11 Where separate Level 1 or Level 2 control documents include measures that are relevant to the measures within this document, those measures have not been duplicated in this document, but cross-references have been included for context. Where separate legislation, consents, permits and licences are described in this document they are set out in the **Schedule of Other Consents, Licences and Agreements** (Doc Ref. 5.11(B)) [REP3-011].



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1.1.12 For the purposes of this document the term 'SZC Co.' refers to NNB Nuclear Generation (SZC) Limited (or any other undertaker as defined by the DCO), its appointed representatives and the appointed construction contractors.



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2 DOCUMENT STRUCTURE

- 2.1.1 The structure of this document is as follows:
 - Section 3: sets out the baseline for the existing landscape typologies, habitats and soils types within the site;
 - Section 4: sets out the landscape and ecological vision of the LEMP;
 - Section 5: sets out management prescriptions per habitat type; and
 - Section 6: sets out monitoring requirements per habitat type.
- In addition to the above, this **LEMP** is supported by **Figures 1** and **2**. These figures appeared originally as **Figure 7.1** within **Volume 6**, **Chapter 7** of the **ES**, and **Figure 6.3** within **Volume 6**, **Chapter 6** of the ES [APP-463] but have been updated in this LEMP to reflect the current proposals. **Figures 3** to **9** have been produced specifically for this document.



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3 BASELINE

3.1 Existing habitats and landscape typologies

- a) National Character Areas
- 3.1.1 The Suffolk Coast and Heaths NCA 82 (Ref. 1.1) is situated on the North Sea coast between Great Yarmouth to the north and the port town of Harwich to the south. It forms a long, narrow band extending between 10 kilometres (km) and 20km inland. The South Norfolk and High Suffolk Claylands NCA 83 (Ref. 1.2) is located on the western boundary of NCA 82. It occupies a large area of central East Anglia, stretching from just below Norwich in the north to the River Gipping in the south.
- 3.1.2 The eastern extent of the site and surrounding area is situated within NCA82: Suffolk Coast and Heaths. NCA82 shows characteristics of gently undulating farmland with areas of woodland and forest plantation in the surrounding area. This NCA is described within the NCA summary as sparsely settled and "...mainly flat or gently rolling, often open but with few commanding viewpoints". More than half of the NCA is utilised for arable and pig farming. The remainder of the NCA (beyond the study area) is coast, lowland heaths (Sandlings) and forest plantations. Close to the boundary between NCA82 and the adjacent NCA83, the landscape is described as "The boundary between the Suffolk Coast and Heaths and the more wooded boulder clay plateau of central East Anglia (South Norfolk and High Suffolk Claylands and South Suffolk and North Essex Claylands) is incised by several small east—west river valley corridors".
- 3.1.3 The western extent of the site and study area is situated within NCA83: South Norfolk and High Suffolk Claylands (Ref 6.16). This NCA covers a large area of central East Anglia, and is a predominantly flat clay plateau incised by numerous small-scale wooded river valleys. Large areas of woodland are noted as being scarce within this LCA, with views frequently open and occasionally exposed "although within the valleys it is possible to find quite confined landscapes with intimate views". NCA83 is also "an area of mixed settlement patterns with nucleated villages found in the west and along the river valleys, intermixed with dispersed hamlets and moated farmsteads. Large, often interconnected village greens or commons are a key feature of the area". The description also notes that "PRoW, including the Boudicca Way and Angles Way long-distance footpaths, and country estates and parklands continue to provide recreational opportunities".
- 3.1.4 The site and surrounding area is generally representative of its corresponding character area with the small east-west valley corridors, arable farmland and woodland. The landscape is characteristically flatter to the west and more rolling to the east.



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- b) Local landscape character areas/types
- 3.1.5 The following LCTs, as identified within the Suffolk Landscape Character Assessment (Ref. 1.3), are located within 2km of the site and are shown on **Figure 1**:
 - Ancient Estate Claylands;
 - Coastal Levels;
 - Estate Sandlands;
 - Rolling Estate Claylands; and
 - Valley Meadows and Fens.
- 3.1.6 Most of the site lies within the Ancient Estate Claylands LCT, with some areas towards the valley bottoms falling within the Rolling Estate Claylands LCT.
- 3.1.7 The Ancient Estate Claylands LCT is a clay plateau area running north-south and located to the west of both the coastal levels and the 'Sandlands'. Key characteristics include parklands, of which there are a number in the vicinity of the site, a dispersed settlement pattern with isolated farmsteads, and a mix of organic and straight field boundaries, depending on landowner influences.
- 3.1.8 The Rolling Estate Claylands LCT is found on rolling valley sides, which within the study area includes several unnamed watercourses that flow into the Minsmere Old River, including two main rivers referred to as 'Middleton Watercourse' and 'Theberton Watercourse'. The east facing valley slopes that the site passes through are broadly characteristic of this LCT, having a rolling landform and fragmented woodland cover.
 - c) Baseline habitats
- 3.1.9 **Figure 2** details the broad habitat categories as defined by the Phase 1 habitat categories (Ref. 1.4), present within the site.
- 3.1.10 The site comprises predominately intensively managed arable fields with no scarce arable weeds or other notable plant species having been identified. Arable field margins are a habitat listed under Suffolk's Priority Species and Habitat list, but no botanically rich arable margins were identified within the site boundary.
- 3.1.11 There are also small areas of poor semi-improved grassland, including one large field of neutral semi-improved grassland supporting common grassland species including Meadow Foxtail (*Alopecurus pratensis*), Soft-



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brome (*Bromus hordaceus*), Fescues (*Festuca* spp.), Yorkshire-fog (*Holcus lanatus*), Meadow Buttercup (*Ranunculus acris*), Creeping Buttercup (*Ranunculus repens*) and Common Bird's-foot-trefoil (*Lotus corniculatus*). There are also two smaller areas of neutral semi-improved grassland present within the site. Both areas of grassland support a variety of common species including Meadow Foxtail, Soft Brome, Yorkshire-fog and Meadow Buttercup.

- 3.1.12 The arable fields present within the site are bordered by fences and hedgerows and most of the hedgerows present are species-rich with trees. Alongside Littlemoor Road is a species-rich road verge.
- 3.1.13 Twelve blocks of broadleaved semi-natural woodland and two blocks of plantation woodland are present wholly or partly within the site. None of these woodlands are ancient.
- 3.1.14 Within the site boundary, there are seven ditches and four watercourses and of these, ten were surveyed and all were dry at the time of survey. Most of the ditches had recently been cleared of all aquatic and marginal vegetation at the time of survey.
- 3.1.15 107 waterbodies (ponds) were identified within 500m of the site of which seven within the site boundary held water on the survey date.
- 3.1.16 Protected species relevant to the scheme include great crested newt (*Triturus cristatus*), the breeding bird assemblage and the bat assemblage. The great crested newts breed in several of the ponds within and adjacent to the site boundary.
- 3.1.17 Further contextual information about the terrestrial ecology baseline can be found in Volume 6, Chapter 7 [APP-461] and Volume 6, Chapter 7, Appendix 7A [APP-462] of the Environmental Statement.
- 3.2 Soils
- 3.2.1 The site is underlain by quaternary sand overlain by a range of drift deposits, from heavy textured till and head deposits to sands and gravels. This variation in geology results in variability in soil characteristics.
- 3.2.2 The main soil type present within the site is characterised as being slowly permeable seasonally waterlogged clayey and fine loamy over clayey soil. These belong to the Ragdale Soil Association¹. Typical profiles for these soils comprise dark greyish and mottled clay, or clay loam topsoil overlying greyish brown to grey mottled subsoil (which can be calcareous). The

¹ A Soil Association represents a group of soil types which are typically found occurring together in the landscape.



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- presence of mottling (small patches of red/red-brown colour) are evidence of periodic waterlogging of these soils.
- 3.2.3 The main land use on these soils where they occur in eastern England is described as being Winter cereals.
- 3.2.4 In the eastern part of the site the soils are described as freely draining slightly acid, but base-rich soils. These belong to the Melford Soil Association. Typical profiles for these soils comprise dark brown clay loam overlying yellowish brown to pale brown clay loam or clay which can be very calcareous at depth.
- 3.2.5 These soils are mapped as occurring in a strip to the east of the A12 (Area 1), along the line of Fordley Road (between Areas 3 and 4), south-west of Anneson's Corner (Area 4), and west of Brown's Plantation (Area 6).
- 3.2.6 From the detailed surveys the soils in each area of the site are described as set out in **Table 3.1**.

Table 3.1: Soil texture descriptions

Area	Location	Description of soil texture
Area 1.	From the A12 to Footpath E-344/013/0 and E584/016/A (land west of the East Suffolk line)	Medium to heavy textured clay loams overlying heavy textured clays.
Area 2.	From land west of the East Suffolk line to Littlemoor Road.	Heavy textured clay loams and light textured sandy loams overlying heavy textured clays.
Area 3.	From Littlemore Road to east of Garden House Farm (including link to B1122 west of Middleton Moor).	Predominantly heavy textured clay loams, and light textured sandy loams overlying heavy textured clays with some medium textured clay loams overlying medium textured clay loams (sandy).
Area 4.	From east of Garden House Farm to land west of Theberton.	Heavy textured clay loams, and light textured sandy loams overlying heavy textured clays as well as lightly textured loams overlying lightly textured sands.



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Area	Location	Description of soil texture
Area 5.	From land to the west of Theberton to the south of Theberton.	Medium to heavy textured clay loams and light textured sandy loams overlying heavy textured clays.
Area 6.	From south of Theberton to the B1122 adjacent to Brown's Plantation.	Medium textured clay loams overlying heavy textured clays or lightly textured sands as well as lightly textured loams overlying lightly textured sands.



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4 LANDSCAPE AND ECOLOGY VISION

4.1 Objectives

- 4.1.1 The objectives that underpin this management plan are designed to contribute towards the overall design principles for the development as articulated in the Associated Development Design Principles (Doc. Ref. 8.3) [REP7-035].
- 4.1.2 The overriding intention is to conserve, restore and enhance landscape character and biodiversity. Where practicable, existing landscape features of importance for ecology and visual screening must be retained during the construction of Sizewell link road, such as Brown's Plantation and Bobbett's Wood.
- 4.1.3 Given the scale of development, construction will result in the removal of vegetation and habitat loss and fragmentation (but mainly of relatively lower value arable land). The intention is to integrate the Sizewell link road into the landscape that it passes through to contribute to enhancing the landscape character of this section of the Ancient Estate Claylands and Rolling Estate Claylands.
- 4.1.4 Other design objectives are to create and manage planting to minimise the visual impact of the Sizewell link road in views from the surrounding landscape. This will minimise impacts on cultural heritage resources, improve access and recreation infrastructure and ensure the long-term sustainability and resilience of the landscape including to predicted climate change.
- 4.1.5 Specific landscape and ecological objectives, which must guide long-term management, are as follows:
 - To return the temporary construction areas along the route to their current uses, which are predominantly arable and semi-improved pasture agriculture respectively.
 - To reinforce and expand existing linear wooded corridors and create others to provide greater long-term connectivity for bats and other species on a landscape scale. Specifically, native woodland to be created east of the East Suffolk Line, in the vicinity of the existing Fordley Road, in the vicinity of Trust Farm, and linking Plumtreehills Covert to Pretty Road.
 - Provide replacement ponds to compensate for the temporary and permanent loss of great crested newt breeding ponds and for woodland planting, hedgerow planting and grassland planting to replace lost terrestrial habitats and to improve connectivity for this species.



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- To provide enhancement ponds to provide additional pond habitats in the area and to enhance retained watercourses within order limits to contribute to bio-diversity net gain.
- Ensure mitigation structures such as oversized culverts, crop kerb, filter drains / underpasses remain functional and provide safe crossing points for protected species, with a particular focus on great crested newts and bats, over the course of the operational phase.
- Ensure landscape features and mitigation areas for nocturnal species are not illuminated or subject to light spill and dark corridors provided.
- To maximise the capacity of wildlife and landscape to cope with climate change, using a planting palate of species resilient to drought and disease that are not reliant on irrigation measures.
- 4.1.6 These management objectives have been designed with the aim of enabling restoration at a landscape scale. The integration of infrastructure, landscape and access; and minimising habitat severance and increasing connectivity will provide long-term benefits to biodiversity of Suffolk as a whole rather than at a site level.

4.2 Habitat Types - Overview

- 4.2.1 This **Sizewell link road LEMP** provides management and monitoring specifications for the following broad landscape types that are to be created, enhanced or restored following completion of construction within the development site boundary. **Figures 3** to **9** illustrate the habitat types that will be created on the post-construction site within the site boundary, and which are covered by this **Sizewell link road LEMP**. The habitat types are as follows:
 - arable farmland;
 - broadleaved woodland;
 - scattered/specimen trees;
 - native hedgerows;
 - species-rich grassland;
 - ponds / waterbodies; and
 - watercourses.



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4.3 Habitat Types

a) Arable Farmland

4.3.1 Areas subject to temporary possession must be restored back to arable agriculture, where that is the current land use. These fields therefore revert back to and continue to be managed by the landowner as they are at present with field margins being retained and are therefore not the focus of this **LEMP**.

b) Broadleaved Woodland

4.3.2 New areas of woodland will be established through planting. The new woodland will buffer and link existing areas of woodland within the site, as well as provide visual screening, and must be predominantly native broadleaved with a small component of mixed woodland (to increase climate change resilience). It must have structural and species diversity, and management must be aimed at enhancing biodiversity value rather than commercial timber management.

c) Scattered Trees

4.3.3 New areas of scattered trees must be planted around road junctions and infiltration basins in order to provide a transition between broadleaved woodland and grassland, unless visibility splays for the junctions or access requirements for the basins prevent their planting. The trees must be native broadleaved, with species diversity, and management must be aimed at enhancing biodiversity value.

d) Specimen Trees

- 4.3.4 Existing individual specimen trees, particularly veteran or ancient trees, must be retained wherever practicable. Planting of individual specimen trees must be undertaken in the vicinity of veteran or ancient trees that will be lost as part of the construction. These trees must be of the same species as the veteran or ancient trees lost, and of local provenance where possible. Management must be aimed at allowing these speciment trees to develop an open crown that could mature into a veteran or ancient tree over time.
- 4.3.5 Bat 'hop-overs' will be created using retained mature vegetation and / or transplanted specimen trees. This approach has the best opportunity of permitting safe passage across the road for bats at the earliest opportunity. These 'hop-overs' will be linked into existing retained and newly proposed hedgerows and new woodlands as much as is possible.

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4.3.6 Planting/transplanting methods and design will need to be agreed with the highway authority but will be focussed on the key locations identified below. An image of a crossing point on the existing B1122, with tall vegetation is presented as below in Image 1.



Image 1: An example of a hop-over formed of tall vegetation across the existing B1122

4.3.7 Surveys have been conducted across the Sizewell link road site to identify areas which are likely to require mitigation to facilitate road crossing by bats. Fourteen locations where vegetation or features that have potential be used by commuting bats were identified from aerial imagery, these are presented in Image 2. Of the 14 locations investigated (numbered 10 – 23), the following six locations met the threshold to *potentially* require a 'hopover': 11, 12, 13, 20, 21 and 22. The locations of these is presented in Image 2. Whether these six locations require a 'hop-over' is being clarified by further surveys.

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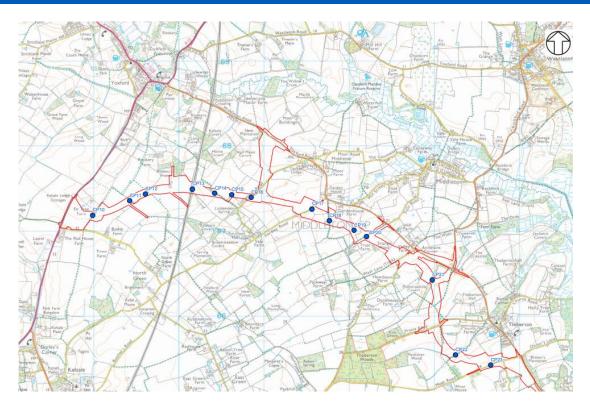


Image 2: Potential bat 'hop-over' locations (see text for details)

e) Native Hedgerows

4.3.8 New and replacement hedgerows must be created along much of the route of Sizewell link road, to provide landscape integration and habitat linkages. Hedgerows must contain native species, including a proportion of tree species, and be species rich.

f) Grassland

4.3.9 Following completion of construction, the majority of the post-construction area must be seeded to provide species-rich neutral grassland. There will be different end use requirements dependant on specific locations of the grassland e.g. around infiltration basins and swales or at created ponds. The grassland must comprise a native species mix including the following grass species: Crested Dog's-tail (*Cynosurus cristatus*), Quaking-grass (*Briza media*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Yellow Oatgrass (*Trisetum flavescens*), Red Fescue (*Festuca rubra*) and Common Bent (*Agrostis capillaris*). Forb species must include the following: Common Knapweed (*Centaurea nigra*) Oxeye Daisy (*Leucanthemum vulgare*), Common Bird's-foot-trefoil, Lady's Bedstraw (*Galium verum*), Common Sorrel (*Rumex acetosa*), Meadow Vetchling (*Lathyrus pratensis*), Meadow Buttercup, Ribwort Plantain (*Plantago lanceolata*), Cowslip (*Primula veris*) and Cat's-ear (*Hypochaeris radicata*).



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g) Ponds

4.3.10 A total of up to eight mitigation ponds must be provided to provide new breeding habitats for great crested newts (**Volume 3**, **Appendix 2.9.C** of the **ES Addendum** [AS-209]), whilst a further six ponds must be created to function as an enhancement of the aquatic habitats within the site post development.

h) Watercourses

- 4.3.11 Enhancement of existing watercourses within the extent of land which forms the permanent land take for the Sizewell link road will be undertaken (approximately 50m upstream and downstream of the proposed new culverts). In addition, enhancement measures will be incorporated within the three watercourse diversions (Middleton Drain, Pretty Road Drain watercourse diversion west to Pretty Road and Pretty Road Drain watercourse diversion east to Theberton watercourse) and and new wetland habitat, such as a scrape, incorporated into the Middleton Drain.
- 4.3.12 These enhancements will include, but not be limited to:
 - Varying channel width and bank gradient;
 - Creation of irregular pools of varying depth to create habitat mosaics;
 - Backwaters and side channels;
 - Berms:
 - Bends; and
 - Woody dams and other natural obstructions.



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5 MANAGEMENT PROPOSALS

5.1 Overview

- **Table 5.1** sets out the construction phase and pre-establishment management measures. **Table 5.2** sets out the management measures for habitats that will be created. **Table 5.3** sets out faunal enhancement management measures.
- 5.1.2 Establishment and aftercare works must be carried out by an approved landscape sub-contractor in accordance with good horticultural practice and the relevant British standards at the time of implementation.
- 5.1.3 Management procedures must be reviewed annually to ensure management is aligned with habitat creation.

5.2 Ground preparation and soil management

- 5.2.1 The availability of soil resources in the right condition is critical to the establishment of the required habitats.
- All soils would be handled in accordance with the measures set out in section 9, Part C the Code of Construction Practice (Doc Ref. 8.11 (E)) (Requirement 2) and the Soil Management Plan once it has been approved by East Suffolk Council (required under the CoCP). This sets out the ways in which soils mustbe stripped, transported, stockpiled and restored, with a reconditioning step detailed. These follow published best practice guidance and ensure that reinstated soils have the right physical and chemical characteristics for their required end use.
- 5.2.3 The requirements and methods for habitat creation must be included in a dedicated habitat creation method statement. The method statement must include acceptance criteria for the soils required for each habitat type and be submitted to East Suffolk Council for approval in accordance with the procedure set out in Schedule 23 of the DCO prior to works commencing.



Table 5.1: Establishment phase management

Management Item Reference	Management Item	Management measures	Timeframe/Frequency on Management Actions
Watering			
W1	Planting and seeding	Planting must be aligned with appropriate seasons (spring and late autumn) to reduce the requirement for watering.	As required
		Watering requirements for all new seeding and planting must be monitored until all establishment works are completed. Any losses are to be replanted in the next dormant season.	
Use of Herbicides a	and Fertilisers		
HF1	Herbicides and fertilisers	Following reinstatement, herbicides or fertilisers must not be used for any maintenance or management operations that may cause harm to existing land uses (i.e. publicly accessible areas, or agricultural areas) or existing habitats.	Following reinstatement



Table 5.2: Management measures for newly created habitats

Management Item Reference	Management Item	Management measures	Timeframe/Frequency on Management Actions
Weed Control			
WC1	Injurious weeds	Weed control relates to infestations of injurious weeds as follows: Broad-leaved Dock (<i>Rumex obtusifolius</i>), Curled Dock (<i>Rumex crispus</i>), Common Ragwort (<i>Senecio jacobaea</i>), Creeping Thistle (<i>Cirsium arvense</i>) and Spear Thistle (<i>Cirsium vulgare</i>).	March-October As required
		Injurious weed control must use mechanical means of control such as topping or pulling. In the event that these injurious weeds are found on site, specialist advice must be sought for any occurrences of invasive species, including Giant Hogweed (<i>Heracleum mantegazzianum</i>) and Japanese Knotweed (<i>Fallopia japonica</i>).	
WC2	Invasive species	In the event that species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) are found on site during the monitoring, treatment methods and measures to prevent the spread of these species must be implemented.	March-October As required
WC3	Herbicide application	Where weed killing is by a selective translocated herbicide, the herbicide must be applied during a period of active growth in accordance with the manufacturer's instructions. Weed-killing will be achieved by the total die-back of weeds. In the case of selective weed control there must be not more than 5% re-growth during the season.	March-October As required
WC4	Herbicide application	Where weed control is by spot application, a translocated herbicide must be applied with a device that ensures that the herbicide touches weed species only.	March-October



Management Item	Management Item	Management measures	Timeframe/Frequency on Management Actions
Reference			Actions
			As required
WC5	Removal of	Where weed control by pulling/hand-weeding, the work must consist of the removal of	March-October
	weeds by hand	the entire weed, including roots, by digging, forking, hoeing or pulling. Weeds must be removed prior to flowering and the arisings removed from site.	As required
Broadleaved V	Voodland		
BW1	Tree replacement	Any trees that fail or become damaged or diseased must be removed and replaced in the next planting season with others of similar size and species.	To be undertaken in planting season -
		Planting must be undertaken in the dormant season (November to February) in random	November to February
		single species groups of 5 – 20 plants at centres varying between 1.4 –2.5m, to avoid excessive overcrowding and shading out problems.	As required
		Planting must be done on a ratio of roughly 40% to 50% canopy trees, 20% to 30% understorey trees and scrub, and c.30% open space.	
		The larger blocks of woodland planting must be protected by installing deer fencing (rather than individual tree guards). The height of the fencing must be a minimum of 1.8m.	
		Tree guards must be used for smaller areas of woodland.	



Management Item Reference	Management Item	Management measures	Timeframe/Frequency on Management Actions
		Any stakes, guards and ties must to be monitored, replaced and adjusted to ensure tree growth is not adversely affected.	
BW2	Weeding	All weed growth must be controlled using mechanical means, such as strimming. Chemical treatments must only be used as a last resort and must not be used in areas accessible to the public.	May-October As required
Scattered/Spec	cimen Trees		
ST1	Planting	Planting must be undertaken in the dormant season (November to February) in random single species groups of 3 - 5.	Construction Phase November to February
		Tree guards must be used for individual trees.	Treverniser to rearranty
		Any stakes, guards and ties must be monitored, replaced and adjusted to ensure tree growth is not adversely affected.	
ST2	Tree replacement	Any trees that fail or become damaged or diseased must be removed and replaced in the next planting season with others of similar size and species.	To be undertaken in planting season - November to February As required



Management Item Reference	Management Item	Management measures	Timeframe/Frequency on Management Actions
ST3	Weeding	All weed growth must be controlled using mechanical means, such as strimming. Chemical treatments must only be used as a last resort and must not be used in areas accessible to the public.	May-October As required
ST4	Bat hop- overs - replacement of failed planted and transplanted trees	Trees used for these features must be inspected annually after installation. If trees have failed a suitable replacement (of an appropriate size and species) must be planted. All other Maintenance recommendations are as per other scattered / Specimen trees and should follow ST1 -3 above.	Annually
Native Hedger	ows		
H1	Hedgerow replacement	Any sections of hedgerows that fail or become damaged or diseased must be removed and replaced in the next planting season with similar species.	To be undertaken in planting season -
	planting	Planting of whips must be undertaken in the dormant season (November to February). Whips must be planted in double rows at a spacing of 20—30cm.	November to February One per annum
		Any stakes, guards and ties must to be monitored, replaced and adjusted to ensure hedgerow growth is not adversely affected.	



Management Item Reference	Management Item	Management measures	Timeframe/Frequency on Management Actions	
H2	Hedgerow margins	Hedgerow margins of a minimum 2m must be left undisturbed. The margins must be cut annually in late summer, after the flowers have seeded.	Main cut late Summer (late July/early August) One per annum	
Grassland				
G1	Grass cutting	To be determined as part of detailed design based on final specified grassland mixes.	To be based on specified grassland mixes.	
G2	Scrub removal	Where required, scrub will be managed or removed outside the breeding bird season to promote an open grassland sward. Scrub will not be removed where it is required for screening, or where it provides a boundary habitat.	September to February inclusive One per annum	
Ponds				
P1	All measures	Great Crested Newt mitigation ponds: The specification for and management of great crested newt mitigation ponds will be set out in the relevant licence application submitted to Natural England. (see also FE4 below)	TBC	



Management Item Reference	Management Item	Management measures	Timeframe/Frequency on Management Actions
P2	Water depth management	Water levels to be topped up using non-chlorinated/untreated water as required to ensure depth of ca. 50% of planned maximum depth during the establishment period. General aquatic vegetation removal must be undertaken in December-January to maintain silt level below 500mm from original pond base.	December-January One per annum.
P3	Vegetation Removal	The balance of open water to aquatic/marginal vegetation must be monitored in June every 2 years. Clearance of vegetation must be undertaken on a rotational basis (5-7 years or as required). Removal of vegetation must be undertaken in December-January annually.	December-January As required.
P4	Scrub removal	Scrub encroachment around banks must be monitored in June every 2 years to ensure scrub does not dominate and shade pond. Scrub must be cut back in November every 2 years to ensure shading of pond is less than 25%.	Every 2 years
P5	Pollution	Ensure pond is not degraded through pollution. Monitor for signs of eutrophication (algal blooms) or vegetation.	As required.
P6	Non-native species management	Ponds must be inspected for invasive aquatic species; Water/sediment/vegetation must not be transferred from other waterbodies.	As required.



Management Item Reference	Management Item	Management measures	Timeframe/Frequency on Management Actions
		Non-native aquatic vegetation must be removed immediately if noted.	
Watercourses			
W1	Watercourse management	Watercourses will be slubbed as required (but no more frequently than 1 in 5 years), between mid-September and the end of February to avoid breeding birds unless other ecological mitigation measures have been agreed with the Ecology Working Group.	September-February One per annum
		Only short lengths of watercourses must be slubbed rather than whole watercourse lengths. Multiple sides of a ditch must not be slubbed at the same time. Scrub must be managed to ensure it does not encroach on ditches to prevent over-shading.	

Table 5.3: Faunal enhancement management measures

Management Item Reference	Management Item	Management measure	Timeframe/Frequency on Management Actions
FE1	Reptile hibernacula	No maintenance is required for the hibernacula, but if the structure is no longer suitable for wildlife (i.e. collapsed such that there are no longer cavities) then it must be replaced to the same specification.	One check per annum



Management Item Reference	Management Item	Management measure	Timeframe/Frequency on Management Actions
FE2	Reptile egg laying	No maintenance is required for the reptile egg laying sites, but if the structure is no longer suitable for wildlife (i.e. collapsed such that there are no longer cavities) then it must be replaced to the same specification.	One check per annum
FE3	Bat boxes	Any lost or damaged bat boxes must be replaced once they have been checked by a licenced bat worker to ensure that no bats are present.	As required
FE4	Great crested newts Management for great crested newt mitigation, and any relevant habitat enhancements, will be described in detail in the great crested newt license application submitted to Natural England.		As required

Table 5.4: Other features management measures

Management Item Reference	Management Item	Management measures	Timeframe/Frequency on Management Actions
OF1	Acoustic barriers (bunds or fences)	Retention of bund crests at their designed height and across their design footprint, and making good of any cracks, splits or other holes through any acoustic fences, including at the base.	To be undertaken throughout the period of the construction of the Sizewell C project. Inspections to be



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Management Item Reference	Management Item	Timeframe/Frequency on Management Actions
		carried out at least every two years unless agreed otherwise.



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6 MONITORING REQUIREMENTS

6.1 General Monitoring

- 6.1.1 During the initial establishment period of twelve months from completion of construction of the Sizewell link road, inspections must take place by a suitably qualified specialist biannually in spring and late summer. After the first twelve months inspections must be carried out annually in late summer, unless otherwise agreed with East Suffolk Council. Any Article 21 agreements with the Highway Authority will include any appropriate monitoring obligations for the highway which is being adopted.. These monitoring inspections will be used to measure the success of the management measures and determine if interventions are required in order to deliver the landscape and ecology vision.
- 6.1.2 The monitoring requirements areset out in **Table 6.1**, however specific detailed monitoring prescriptions will be detailed in a Monitoring Strategy for the established habitats which will be submitted to and approved by the Ecology Working Group. All monitoring must be reported to the Ecology Working Group and interventions will be required where results show that the overall design vision and landscape strategy for the development as articulated in the **Associated Development Design Principles (Doc. Ref. 8.3)** [REP7-035].
- 6.1.3 Ecology monitoring of species must be carried out in accordance with **the Terrestrial Ecology Monitoring and Mitigation Plan** (Doc Ref. 9.4(B)) (Requirement 4) and protected species licences as granted by Natural Englang and therefore is not duplicated here.



Table 6.1: Monitoring requirements

Habitat / Feature Type	Party responsible	Timing of Monitoring	Requirements
Establishment	SZC Co. until any agreements are made with the Highway Authority under Article 21 of the dDCO for adopting the	Various	There is always uncertainty where new habitat is being established. This is impacted by weather conditions, the quality of seed stock or green hay, variations in the conditions of the site, and problems with pernicious weeds. Therefore the management and monitoring of the target habitats must be intensive during the first year and frequent over the subsequent four years to ensure any problems are identified early and resolved quickly.
	highway		Inspections must be undertaken by a suitably qualified specialist.
	habitats and the effectiveness of this LEM paying particular attention to: the success of establishment include of planting; inappropriate use or vandalism; general appearance and condition;		The inspections must be undertaken to assess the establishment of habitats and the effectiveness of this LEMP and aftercare prescriptions, paying particular attention to:
		 the success of establishment including disease, damage or death of planting; 	
		inappropriate use or vandalism;	
		general appearance and condition;	
			 the presence of invasive or non-native species that require treatment; and
			any evidence of protected species that could have implications for future management.



Habitat / Feature Type	Party responsible	Timing of Monitoring	Requirements
			Safety issues reported by the public must be investigated as soon as practically possible and remedial works undertaken as necessary Public Engagement.
			Public engagement must be undertaken to keep users of the site informed of the works.
			A monitoring report must be prepared and submitted to the Ecology Working Group.
Target Communities	SZC Co. until any agreements are made with the Highway Authority under Article 21 of the dDCO for adopting the highway.	Check bi-annually years 0, 1 and 2 Check annually year 3 - 5 Years 5-10 – A review of monitoring requirements must be undertaken in year 5 to detail timings for Years 5-10. If objectives are not met, then the LEMP must be amended.	Before and after enhancement, reinstatement or creation a full botanical species list and quality assessment must be carried out to monitor the success of restoration and as a baseline for monitoring. This must include the presence and abundance of species. The National Vegetation Classification may be an appropriate method for collecting data for monitoring or this may be bespoken to the target communities. This must also include monitoring with regards to achieving the desired communities and quality as demonstrated in the Biodiversity Net Gain Report [REP5-090]. Monitoring is essential to track the development of the target habitat(s) and troubleshoot any problems. Target communities would be set for each habitat type for years 1, 2, 5 and 10. Success must be monitored via the yearly monitoring surveys and reporting which must be submitted to the Ecology Working Group.



Habitat / Feature Type	Party responsible	Timing of Monitoring	Requirements
Woodland	SZC Co. until any agreements are made with the	As above	Targets would be set according to thresholds identified for Section 41/Biodiversity Action Plan quality woodland in the Countryside Stewardship Higher Tier Scheme made specific to the site.
	Highway Authority under Article 21 of the dDCO for adopting the highway		Regular checks, at least one per annum, must be made during the first five years of establishment to replace dead or diseased specimens, control weeds, re-stake plants as necessary and check deer/rabbit fencing.
			Monitoring must follow the Common Standards Monitoring Guidance for Woodland Habitats. This weights desirable species against the injurious ones.
Scattered/Specimen Trees	SZC Co. until any agreements are made with the Highway Authority under Article 21 of the dDCO for adopting the highway	As above	Regular checks, at least one per annum, must be made during the first five years of establishment to replace dead or diseased specimens, control weeds, re-stake plants as necessary and check deer/rabbit fencing. Individual specimen trees planted as compensation for the loss of ancient or veteran trees must be monitored to ensure suitable space is available around the trees for an open crown to develop.
Hedgerows	SZC Co. until any agreements are made with the	As above	Targets would be set according to thresholds identified for Section 41 of the NERC Act/Suffolk Biodiversity Action Plan quality hedgerows in the Countryside Stewardship Higher Tier Scheme made specific to the site.



Habitat / Feature Type	Party responsible	Timing of Monitoring	Requirements
	Highway Authority under Article 21 of the dDCO for adopting the highway		Regular checks, at least one per annum, must be made during the first five years of establishment to replace dead or diseased specimens, control weeds, re-stake plants as necessary and check deer/rabbit fencing. Monitoring must follow the Hedgerow Survey Handbook.
Grassland	SZC Co. until any agreements are made with the Highway Authority under Article 21 of the dDCO for adopting the highway	As above	Regular checks, at least one per annum, of the newly established areas of grassland must be made during the first five years of establishment. Targets would be set for each grassland type according to the species list gathered before construction and thresholds identified for Section 41 of the Natural Environment and Rural Communities (NERC) Act (Ref. 1.5)/Suffolk Biodiversity Action Plan (Ref. 1.6) as well as the Joint Nature Conservation Committee guidance. Monitoring must follow the Common Standards Monitoring Guidance for Lowland Grassland. This weights desirable species against the injurious ones.
Ponds	SZC Co. until any agreements are made with the Highway Authority under Article 21 of the dDCO for	As above	Regular checks, at least one per annum, of the newly established ponds must be made during the first five years of establishment. Water and silt levels must be monitored in June annually. Targets would be set for ponds according to thresholds identified for Section 41 of the Natural Environment and Rural Communities (NERC)



Habitat / Feature Type	Party responsible	Timing of Monitoring	Requirements
	adopting the highway		Act (Ref. 1.5)/Suffolk Biodiversity Action Plan (Ref. 1.6) as well as the Joint Nature Conservation Committee guidance.
Wetland habitats	SZC Co. until any agreements are made with the Highway Authority under Article 21 of the dDCO for adopting the highway	As above	Regular checks, at least one per annum, of the newly established habitats must be made during the first five years of establishment to control scrub encroachment. Monitoring must follow the Common Standards Monitoring Guidance for Ditches and Common Standards Monitoring Guidance for Rivers.
Bat hop overs	SZC Co. until any agreements are made with the Highway Authority under Article 21 of the dDCO for adopting the highway	As above	Regular checks, at least one per annum, must be made during the first five years of establishment to replace dead or diseased specimens (of planted / transplanted trees), control weeds, re-stake plants as necessary and check deer/rabbit fencing. Individual specimen trees planted / transplanted should be monitored to ensure that suitable space is permitted for them to develop a full crown (which provides cover across the road above the traffic flow).
Year five survey and review	SZC Co.	Year 5	The following surveys, at a minimum, must be included in the year five review: 1 protected species surveys;



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Habitat / Feature Type	Party responsible	Timing of Monitoring	Requirements
			2 monitoring surveys of bat and bird boxes; and
			3 the reptile population.
			The results of the surveys must be reviewed to identify any revisions to the management measures deemed to be required to meet the objectives for the medium and long-term. Revised measures must be produced to guide the next five years. This information must be presented as a 'Five Year Monitoring Report' and submitted to the Ecology Working Group.

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FIGURES

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