

# **Anglia Level Crossing Reduction Strategy - Suffolk**

Precautionary Method of Works: Legally  
Protected Species

March 2018



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Network Rail

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# Executive summary

These precautionary methods were produced by Mott MacDonald for Network Rail for the specific purpose of the Anglia Level Crossing Reduction Strategy: Suffolk Order.

This report covers precautionary methods in relation to designated sites and habitats of principal importance (HPIs) (Section 41 of the NERC Act 2006), European badgers *Meles*, bats, breeding birds, great crested newt *Triturus cristatus*, hazel dormouse *Muscardinus avellanarius*, European otter *Lutra*, European water vole *Arvicola amphibius*, common species of reptile, and non-native invasive plant species (Indian balsam *Impatiens glandulifera*). The non-native invasive species listed above was found during desk top review undertaken as part of the Anglia Level Crossing Reduction Strategy Ecology Constraints Report: Suffolk (Mott MacDonald, 2017a). None were recorded during the field surveys.

Section 5 of this document includes recommendations for further surveys to inform mitigation and licensing requirements for badger, breeding birds, hazel dormouse, otter and water vole. These sections of the precautionary methods should be updated once surveys are complete.



# 1 Introduction

Mott MacDonald Limited was commissioned by Network Rail to produce a Precautionary Method statement in relation to legally protected species with potential to be affected by the proposed closure of, and/or changes to rights at 24 level crossings (hereafter known as the Scheme). These crossings are located on railway lines within the county of Suffolk.

The ecological features covered in this report are designated sites and habitats of principal importance (HPIs) (Section 41 of the NERC Act 2006), European badger *Meles meles*, bats, breeding birds, great crested newt *Triturus cristatus*, hazel dormouse *Muscardinus avellanarius*, European otter *Lutra lutra*, European water vole *Arvicola amphibius*, common species of reptile and non-native invasive plant species (Indian balsam *Impatiens glandulifera*).

Special Protection Areas (SPAs) are protected under EC Birds Directive (Directive 2009/147/EC) and are included in the Natura 2000 ecological network, set up under the Habitats Directive 92/43/EEC. Ramsar wetland and Sites of Special Scientific Interest (SSSI) are protected under the Wildlife and Countryside Act 1981 (as amended) from certain activities that may be damaging to the features of interest. SSSI's are also afforded protection under the Countryside and Rights of Way Act 2000 (in England and Wales). County Wildlife Sites (CWS) are designated by local authorities and are a material consideration when planning applications are being determined. The Hedgerows Regulations (1997) protect countryside hedgerows by allowing the Planning Authority to control their removal. Reedbed habitat is protected under The Natural Environment and Rural Communities (NERC) Act 2006 which states:

*“Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.”*

Section 41 of the NERC Act 2006 lists the habitats and species that are of principal importance for the conservation of biodiversity in England.

All species of bats found in the UK, great crested newt, hazel dormouse and otter are fully protected as European Protected Species (EPS) under the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012). These species, together with water vole, common species of reptile and breeding birds are protected under the Wildlife and Countryside Act 1981 (as amended). Badgers are protected under the Protection of Badgers Act 1992. Non-native invasive plant species (such as Indian balsam) are listed under Schedule 9 Part 2 of the Wildlife and Countryside Act 1981 (as amended) and it is illegal to plant or otherwise cause these species to grow in the wild.

The legislation relating to the protected species and non-native invasive species found or considered likely to be present within the Scheme is summarised in Appendix A.

For EPS subject to the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012), Natural England's guidance (2013) states:

*“If the consultant ecologist, on the basis of survey information and specialist knowledge of the species concerned, considers that on balance the proposed activity is reasonably unlikely to result in an offence under Regulation 41 or 45 then no licence is required”*

A range of factors are taken into consideration when assessing whether works can proceed in the absence of a licence including the scope of works, evidence of such species and proximity of existing known populations. In cases where a licence is not required, Natural England advise that reasonable precautions be taken to avoid affecting EPS during works and that an audit trail is kept of this decision (Natural England, 2013).

This report act as an audit trail for the decision-making process. Based on the current conditions of each level crossing included within the Scheme and the nature of the proposed works. As long as the methods of working outlined in this document are implemented in full, the proposed works would not result in a breach of the above legislation and no further detailed mitigation, such as the need for a protected species mitigation licence, is required to proceed with the works.

Should the Scheme conditions differ from those detailed below in Section 2 either prior to or during the proposed works, further mitigation may be required. Specialist ecological advice should be sought should this situation arise.

This excludes those sections of proposed new footpaths which have not been surveyed or where detailed further survey is required (e.g. badger, otter, water vole, Cetti's warbler *Cettia cetti* and dormouse). In these instances, further surveys are required to inform mitigation requirements. This report will need to be updated once baseline conditions have been fully assessment prior to works (see Section 5).

Potential risk to legally protected species and habitats as a result of the Scheme will also be managed through the contractor's obligation to comply with Network Rail's Contract Requirements-Environment (CR-E). Compliance with relevant sections of the CR-E will be demonstrated through the contractor's Construction Environment Management Plan (CEMP) that will be agreed with Network Rail before physical works can begin. The production of a CEMP in advance of physical works is mandatory on Network Rail schemes and this legal requirement appropriately manages construction risk. These precautionary methods have been produced in line with the objectives set out by the CR-E and provides the methodology to be carried out on site during works.

## 2 Background

### 2.1 The Project

Network Rail's Anglia Level Crossing Reduction Strategy aims to reduce the risk that level crossings pose. The proposal aims to manage the possible closure or change of use of around 130 level crossings in Anglia across Cambridgeshire, Suffolk, Essex, Havering, Hertfordshire, Southend and Thurrock. Of these crossings, 24 are located within the county of Suffolk. These are contained in the draft Suffolk Level Crossing Reduction Order (Suffolk Order) which is part of the wider Anglia Level Crossing Reduction Strategy.

### 2.2 The Proposed Works

Outlined below are the works categories assigned to each crossing as defined in The Network Rail (Suffolk Level Crossing Reduction Order) Design Guide NR12-SCC (Network Rail, 2017).

- Category 1 - Closure of historic Public Rights of Ways that currently have no physical infrastructure to allow crossing of the railway;
- Category 2 - Closure of (mostly private) level crossings with no works required outside of the Network Rail boundary and no Public Rights of Way in the vicinity to be affected;
- Category 3 - Closure of level crossings and extinguishment of the Public Rights of Way (outside of the Network Rail boundary) where there is an existing alternative means of crossing the railway in the vicinity (e.g. an existing Public Right of Way on a parallel route);
- Category 4 - Closure of level crossings and extinguishment of the Public Right of Way (outside of the Network Rail boundary) and a diversion to new or enhanced infrastructure (such as new footpaths, steps, bridleways, circular routes etc.) at an alternative railway crossing point nearby;
- Category 5 - Closure of level crossings with works required outside of the Network Rail boundary (e.g. changes to signage) but without affecting other Public Rights of Way in the vicinity of the crossing;
- Category 6 - Downgrade or change of use involving extinguishment of public vehicular rights (except for specified private users where applicable) whilst keeping the crossing open for non-motorised users (e.g. conversion to bridleway or footpath); and
- Category 7 - Proposals that will facilitate grade-separated access from each side of the railway as part of another Network Rail Scheme.

Installation of fencing within Network Rail land is required at the majority of level crossings to prevent trespass onto the railway.

### 2.3 Summary of Ecological Surveys

Mott MacDonald was commissioned by Network Rail to undertake an ecological appraisal to inform 24 level crossings included in the Suffolk Order. Crossings were scoped in where the proposed works would result in potential direct or indirect impacts on adjacent habitats based on the category of works and a desk top review of potential ecological constraints. Following the screening exercise, 18 level crossings were scoped in for an ecological appraisal. Field surveys were conducted between April 2016 and September 2017 where access was available. All ecological features that occur within the 30m Zone of Influence (Zoi) of each crossing in the

Scheme was investigated. The Zol is an area defined by the assessment in which there may be ecological receptors subject to impacts and subsequent effects as a result of the Scheme.

The proposed route associated with S01 is located adjacent to the boundary of the Stour and Orwell Estuary Special Protection Area (SPA) European site, and the Stour and Orwell Estuary Ramsar wetland of international importance. A Habitats Regulations Assessment (HRA) Task 1 Screening was completed in 2017 and identified that no likely significant effect is expected as a result of the new footpath. A Stage 2: appropriate assessment is therefore not required.

Full details of the ecology field surveys completed between April 2016 and January 2017 at the level crossings scoped in for an ecological appraisal are found in the Anglia Level Crossing Reduction Strategy Ecology Constraints Report: Suffolk (Mott MacDonald, 2017a).

Additional protected species surveys and botanical surveys recommended within the constraints report were completed at crossings S04 and S05, in August 2017, where access allowed. The results of these surveys are considered within this report.

The proposed routes associated with crossings S07 and S17 will cross through non-statutory designated sites (County Wildlife Sites (CWS). CWS also lie immediately adjacent to S03, S05 and S21. Consultation with the Suffolk County Ecologist is ongoing. Consultation with Suffolk Wildlife Trust will be undertaken to agree precautionary works proposed at S21.

These precautionary methods cover those legally protected species potentially affected by the proposed closure of, and/or changes to rights at 18 level crossings on railway lines within Suffolk.

### **2.3.1 Work activities covered in this Precautionary Method Statement**

The report covers works which are anticipated to commence during Spring 2018. It covers the following programmes of work:

- Removal of some existing level crossing infrastructure and installation of fencing within Network Rail land;
- Removal/trimming of trees/ vegetation for diversions to new or enhanced infrastructure (such as new footpaths, steps, bridleways, circular routes, bridges etc.);
- Ground disturbance for footbridges and culverts;
- Clearance of vegetation for access tracks and grade-separated access;
- Removal/trimming of vegetation for changes to signage; and
- Access points;

The specific works proposed for each level crossing are outlined within the Suffolk Order and not all of the works outlined above will occur at each crossing. No other works within Suffolk will be undertaken as part of the Suffolk Order. Any activity subsequently programmed that is not as detailed within the Order documents, will require assessing by a suitably experienced ecologist to establish whether any further precautionary mitigation measures are required.

## **2.4 Scope of the Precautionary Method Statement**

The precautionary methods detailed within this report have considered the scope and localised, small scale works associated with the proposed closure of, and/or changes to rights at the 18 crossings and assesses how those works could potentially affect badgers, bats, breeding birds, great crested newt, hazel dormouse, otter, water vole, common species of reptile and non-native invasive plant species (Indian balsam) within the Zol of the works.

Full details of the ecological assessment and ecological constraints associated with work at each crossing is found in the Anglia Level Crossing Reduction Strategy Ecology Constraints Report: Suffolk (Mott MacDonald, 2017a).

Section 3 of this report includes the rationale as to why the proposed works are considered unlikely to lead to an offence being committed in relation to protected species associated with the Scheme and why a protected species mitigation licence may or may not be required, where the baseline currently allows.

Section 4 of this report includes both general and species-specific measures to be employed by the Network Rail for minimising impacts to wildlife during the proposed works. The A3 sheets highlight the habitats and identification of signs typical of the legally protected species that have potential to be present within the Scheme; precautionary methods of working and the procedures to be followed should they be recorded within the Scheme during the works.

Maps are provided in Appendix B that detail the locations of the crossings that have potential for each legally protected species to be present.

## 3 Rationale as to why a Precautionary Method Statement is considered appropriate

### 3.1 General licence/consent requirements

#### 3.1.1 Designated site and HPis

Special Protection Areas (SPAs) are European protected sites (part of the EU Natura 2000 ecological network) classified in accordance with Article 4 of the EC Birds Directive (Directive 2009/147/EC). Ramsar sites are wetlands of international importance designated under the Ramsar Convention (ratified in the UK in 1976). Ramsar wetland and Sites of Special Scientific Interest (SSSI) are protected under the Wildlife and Countryside Act 1981 (as amended). SSSI's are also afforded protection under the Countryside and Rights of Way Act 2000 (in England and Wales). CWS are designated by local authorities and hedgerows are protected under The Hedgerows Regulations (1997). Reedbed habitat is listed under Section 41 of the NERC Act 2006.

Where a development has the potential to affect a Natura 2000 site or Ramsar wetland, a Habitats Regulations Assessment (HRA) is required to provide extra information to Local Planning Authorities (LPA) and Natural England. Certain activities are prohibited on SSSI land without Natural England's consent. Permission from Natural England must be requested in writing if a listed activity is intended for works in a SSSI. Proposals to carry out works within a CWS or to HPis, must be discussed with the LPA.

#### 3.1.2 European Protected Species (EPS)

All species of bats found in the UK, great crested newts, hazel dormouse and European otters are EPS subject to the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012). A range of factors are taken into consideration when assessing whether works can proceed in the absence of a licence including the nature of the proposals; the suitability of habitats within the Scheme to support protected species; evidence of such species; and proximity of existing known populations.

Dormice are a nocturnal arboreal species, primarily associated with highly diverse broadleaved woodlands, with well-developed understoreys and species rich hedgerows (Bright et al, 2006) but have also been recorded within reed beds, culm grassland and conifer plantations (Chanin and Woods, 2003). Important food sources for dormice include flowers, fruits, nuts, seeds, insects and caterpillars (Bright et al, 2006). Whilst primarily considered to be arboreal, research has shown that dormice will cross open ground over short distances in order to access food sources and/or for dispersal (Chanin and Gubert, 2012).

#### 3.1.3 Nationally protected species

##### 3.1.3.1 Badger

Badgers and their setts are protected under the Protection of Badgers Act 1992 (as amended) (see Appendix A). A licence may be required for any work within the vicinity of a sett that is likely to cause disturbance to badgers. Licences are not granted from December to June inclusive because cubs may be present within setts. When assessing the requirement for a licence in respect of development, Natural England states that badgers are relatively tolerant of

moderate levels of noise and activity around their setts, and that a low or moderate level of apparent disturbing activity at or near to badger setts does not necessarily disturb the badgers occupying those setts.

#### 3.1.3.2 Breeding birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), with some species afforded greater protection under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). In addition to the protection that all birds receive, Schedule 1 birds and their young are protected against intentional or reckless disturbance at, on or near an active nest. This can include pairing behaviour occurring prior to nesting. There are no licensing purposes that explicitly cover development activities affecting wild birds.

#### 3.1.3.3 Common reptiles

There is no requirement for a licence where development works affect common species of reptiles. Instead, Natural England advise that where reptiles are present, they should be protected from any harm that might arise during the development works through appropriate mitigation.

#### 3.1.3.4 Water vole

Water voles are protected under the Wildlife and Countryside Act 1981 (as amended). Licences cannot be issued for the specific purpose of development or other construction activities which could have an impact on water voles.

When development work is proposed in or near an area which is either known to or likely to contain water voles, the developer will need to implement suitable mitigation to prevent impacts to water voles. The preferred mitigation option is to leave water voles in situ, with the development works adopting avoidance measures through redesign of the proposals.

Where impacts cannot be avoided, operations aimed at displacing water voles from a development site would need to be undertaken under a licence. In England, small scale (limited to continuous lengths of bank not exceeding 50m) displacement of water voles can be carried out at certain times of the year (February to April) for the purposes of conservation under a Class Licence by a registered person. For larger scale displacements or displacements outside of this period, a site-specific conservation licence is required.

In the circumstances where it is considered that the best outcome for water voles is to capture and translocate to a different location, there may be genuine grounds for Natural England to issue a conservation licence for the purpose of translocating the water vole population to suitable alternative habitat.

### 3.2 Rationale for this Precautionary Method Statement

#### 3.2.1 Designated sites and HPis

The proposed route associated with S01 is located adjacent to the boundary of the Stour and Orwell Estuary SPA European site, and the Stour and Orwell Estuary Ramsar wetland of international importance. Report 367516/RPT192 (Mott MacDonald, 2017b) provides a Habitats Regulations Assessment (HRA) Task 1 Screening for the proposal. It provides information to enable screening of the proposed route option at S01 Sea Wall with respect to the determination of a likely significant effect (LSE) on European sites of nature conservation importance. This Task 1 Screening report identified that no likely significant effect alone or in

combination is expected during the construction and operational phase of the new footpath and as such, does not require further assessment on site integrity. No SSSIs are affected by the scheme.

Impacts on non-statutory designated sites are unlikely due to the localised, small scale nature of the works. Minimal habitat removal would be required for the creation of new routes. No potential loss of integrity to the SPA/ Ramsar or CWSs is anticipated and no resurfacing of new access within the sites. Access to the SPA/ Ramsar or CWSs would be unchanged and there are no implications for loss of habitat or disturbance.

To further ensure that such an offence is not committed, it is proposed that work should proceed under the precautionary method detailed in Section 4.

### **3.2.2 Badger**

Habitat loss would be small in the context of surrounding suitable habitats and no badger setts were identified within 30m of the proposed routes during the surveys. It is therefore considered reasonably unlikely that the works will result in wilful killing, injury or capture of badgers or intentional or reckless damage, destruction or obstruction of a sett. Similarly, it is considered reasonably unlikely that the works will result in deliberate disturbance to a badger whilst occupying a sett.

Therefore, on the basis of specialist knowledge and experience working with badgers, it is considered on balance that the works are reasonably unlikely to result in an offence under the Protection of Badgers Act 1992 and no licence is required.

However, to ensure that such an offence is not committed, it is proposed that work should proceed under the precautionary method detailed in Section 4.

### **3.2.3 Bats**

To inform proposals at S25 and S31, ground level assessments of trees within the land boundary of the proposed route were undertaken in 2016 in accordance with the Bat Conservation Trust (BCT) Good Practice Guidelines (Collins, 2016) and British Standard 8596:2015 'Surveying for bats in trees and woodland guidelines' (BSI, 2014). No potential (bat) roost features (PRF) were identified along the proposed routes and the underbridge at S25 was determined to have low potential for roosting bats.

No tree removal is required for the proposed routes as part of the Scheme. Vegetation clearance along the proposed routes will be minimal. Habitat lost will be very small in the context of the wide areas within which bats can forage and commute and no additional lighting is proposed.

Taking into account the habitats present within the footprint of the proposed works and in the wider area and the limited suitable bat roosting opportunities within the structures/ trees present within the Scheme it is considered reasonably unlikely that the works will result in deliberate capture, injury or killing of bats.

Similarly, it is considered highly unlikely that the works will result in deliberate disturbance to bats in such a way as to be likely to impair their ability to survive, breed, reproduce, rear or nurture their young, hibernate or migrate; or to affect significantly the local distribution or abundance of the species.



Due to the limited potential for bats to be using the structures/ trees within the Scheme that are to be affected it is considered reasonably unlikely that the proposed works will result in damage or destruction of their resting places.

The works will not affect any structures/ trees that could be used by bats as maternity roosts and so the proposed works will not result in the damage or destruction of their breeding places.

Therefore, on the basis of specialist knowledge and experience working with bats, it is considered on balance that the proposed works are reasonably unlikely to result in an offence under the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012) and no Natural England development licence is required.

Similarly, it is considered reasonably unlikely that works will result in disturbing a bat in its place of shelter or obstructing access to such a place and therefore the proposed works are reasonably unlikely to result in an offence under the Wildlife & Countryside Act 1981.

However, to ensure that such an offence is not committed, it is proposed that work should proceed under the precautionary method detailed in Section 4.

#### **3.2.4 Breeding birds**

Works carried out outside the typical core breeding bird season (01 September to 28 February 2018) are unlikely to cause an offence under the Wildlife and Countryside Act 1981 (as amended) with regards to any wild bird.

As the majority of the works are being undertaken during the core breeding bird season (considered to be 01 March to 31 August), it is proposed that work should proceed under the precautionary methods detailed in Section 4 to ensure that no offence is committed under the Wildlife and Countryside Act 1981 (as amended) with regards to any wild bird.

#### **3.2.5 Great crested newt**

In the absence of detailed survey information, a precautionary approach would be adopted whereby it is assumed that great crested newts may be present in the potential foraging and/or commuting habitats identified (Appendix B). The water bodies will not be directly affected by the works. However, foraging and/or commuting habitat within the site may be affected by the vegetation clearance. The works will result in small scale, localised ground disturbance which will take place over a short period of time.

The template for the Natural England Method Statement used for development licensing purposes (Natural England, 2015) includes a Rapid Risk Assessment, which provides an initial estimate of the potential risk of the proposed works resulting in an offence being a committed under the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012) and therefore requiring mitigation and/ or a licence from Natural England. The calculation is based on the area of suitable habitat affected and the distance from breeding ponds. This calculator tool was applied to the proposed scope of works.

The result of the NE Rapid Risk Assessment is green: offence highly unlikely (see Appendix C).

Works are to be limited to above ground clearance only and no resurfacing along suitable habitat is proposed. Vegetation clearance will be minimal and will not result in any long-term loss of large areas of suitable habitat or result in permanent or temporary habitat fragmentation.

Considering the habitats present within the footprint of the proposed works and in the wider area, and the small scale of the works it is considered reasonably unlikely that the works will result in deliberate capture, injury or killing of great crested newts.

Similarly, it is considered reasonably unlikely that the proposed works will result in deliberate disturbance to great crested newts in such a way as to be likely to impair their ability to survive, breed, reproduce, hibernate; or to affect significantly the local distribution or abundance of great crested newts.

Due to the limited potential for great crested newts to be using the habitats within the area of works it is considered reasonably unlikely that the proposed works will result in damage or destruction of their resting places.

As the works will not affect any ponds, they will not involve deliberate taking or destroying the eggs of great crested newts during the breeding season.

Therefore, on the basis of specialist knowledge and experience working with great crested newts, it is considered on balance that the proposed works is reasonably unlikely to result in an offence under regulation 41 of the conservations of habitats and species regulations 2010 (as amended) and no protected species mitigation licence is required.

Similarly, it is considered reasonably unlikely that works will result in disturbing a great crested newt in its place of shelter or obstructing access to such a place and therefore the proposed works is reasonably unlikely to result in an offence under the Wildlife & Countryside Act 1981 (as amended).

However, to ensure that such an offence is not committed, it is proposed that work should proceed under the precautionary method detailed in Section 4.

### 3.2.6 Hazel dormouse

Hedgerows to be crossed by the proposed routes were reviewed to assess their connectivity to the surrounding network of hedgerows and areas of woodland, including ancient woodland, using OS mapping. The assessment considered the results of the initial ecological survey (identification of species rich / species poor hedgerows / management). The requirement for dormouse habitat suitability surveys were identified and undertaken at S04 and S05.

The habitats adjacent to the proposed new route at S05 (ancient woodland and hedgerows) are considered to be optimal. The habitats adjacent to the proposed new route at S04 are considered to be sub-optimal for dormice (species poor hedgerow with gaps, grass and tall ruderal) and no further surveys are required.

Additional surveys are required ahead of construction at S05 (Section 5) and have not yet been completed. Further survey work may identify the requirement for a dormouse licence to be obtained. These additional licensed works (if required) are not covered by these Precautionary Methods. Licences from Natural England can take six weeks (longer during busy periods or if the first submittal is not approved). The construction program needs to consider the seasonality of surveys and program them in accordingly to allow sufficient time for mitigation or licencing requirements, if necessary.

Taking into account the habitats present within the footprint of the proposed works and in the wider area and the localised scale and nature of the works at S04, it is considered reasonably unlikely that the works will result in deliberate capture, injury or killing of hazel dormice.

Similarly, it is considered reasonably unlikely that the proposed works will result in deliberate disturbance to hazel dormice in such a way as to be likely to impair their ability to survive, breed, reproduce rear or nurture their young, hibernate; or to affect significantly the local distribution or abundance of hazel dormice.

Due to the limited potential for hazel dormice to be using habitats, it is considered reasonably unlikely that the proposed works will result in damage or destruction of hazel dormice resting places or breeding places.

Similarly, it is considered reasonably unlikely that works will result in disturbing a hazel dormouse in its place of shelter or obstructing access to such a place and therefore the works are reasonably unlikely to result in an offence under the Wildlife & Countryside Act 1981 (as amended).

However, to ensure that such an offence is not committed, it is proposed that work should proceed under the precautionary method detailed in Section 4.

### 3.2.7 European otter

In the absence of detailed otter survey information, a precautionary approach has been adopted whereby it has been assumed that otters are present at crossings identified as having potential habitat for otter within the Ecology Constraints Report: Suffolk (Mott MacDonald, 2017). The majority of the proposed routes have no impacts anticipated to watercourses. Proposed routes that cross watercourses make use of existing crossings where possible. Where proposed routes require new crossings over a watercourse, the proposed works would have a low impact on this species if present. Any loss of foraging habitat will be temporary and the area very small in the context of the surrounding habitats. No holts or potential resting places were identified within the Zol during the surveys.

Additional surveys are required ahead of construction at S03 (Section 5) and have not yet been completed. Mitigation requirements for this route are therefore not included within these precautionary methods.

Considering the habitats present within the footprint of the proposed works and in the wider area and the localised scale and nature of the works, it is considered reasonably unlikely that the works will result in deliberate capture, injury or killing of otters.

Similarly, it is considered reasonably unlikely that the proposed works will result in deliberate disturbance to otters in such a way as to be likely to impair their ability to survive, breed, reproduce rear or nurture their young, or to affect significantly the local distribution or abundance of otters.

Due to the limited potential for otters within the Zol of the crossings, it is considered reasonably unlikely that the proposed works will result in damage or destruction of otter resting places or otter breeding places.

Therefore, on the basis of specialist knowledge and experience working with otters, it is considered on balance that the proposed works are reasonably unlikely to result in an offence under Regulation 41 of the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012) and no protected species mitigation licence is required.

Similarly, it is considered reasonably unlikely that the proposed works will result in disturbing an otter in its place of shelter or obstructing access to such a place and therefore the works are reasonably unlikely to result in an offence under the Wildlife & Countryside Act 1981 (as amended).

However, to ensure that such an offence is not committed, it is proposed that work should proceed under the precautionary method detailed in Section 4.

### 3.2.8 Common reptiles

In the absence of detailed survey information, a precautionary approach has been adopted whereby it has been assumed that common species of reptiles are present at crossings identified as having potential habitat for common reptiles within the Ecology Constraints Report: Suffolk (Mott MacDonald, 2017). The proposed works will not result in the long-term loss of large areas of this habitat or result in the permanent or temporary habitat fragmentation.

There are suitable habitats (grassland and scrub), suitable refuge and hibernation sites (for example log or stone piles, rabbit burrows and cable troughs) within the ZoI. There is a possibility that reptiles will therefore be encountered during the works. Any vegetation clearance should be undertaken during the active reptile season (March to October) and at sufficiently high temperatures (i.e. above 10°C). If vegetation clearance is carried out during the reptile hibernation season, should hibernating reptiles be recorded, they will be left undisturbed and their place of shelter returned to its original condition. Only where this is not possible shall the reptiles be removed with minimal handling and placed in a suitable, safe habitat to enable continued hibernation/ torpor. The works are therefore likely to result in small scale disturbance to reptiles during the hibernation period; this level of disturbance is not considered to be significant.

On the basis of specialist knowledge and experience working with common lizards, slow worms, grass snakes and adders, it is considered that the proposed works are reasonably unlikely to result in an offence under the Wildlife and Countryside Act 1981 (as amended) and translocation of reptiles from the Site is not considered necessary.

However, to ensure that such an offence is not committed, it is proposed that work should proceed under the precautionary method detailed in Section 4.

### 3.2.9 Water vole

In the absence of detailed survey information, a precautionary approach has been adopted whereby it has been assumed that water voles are present within the site. The majority of the proposed routes have no impacts anticipated to watercourses. Proposed routes that cross watercourses, make use of existing crossing where possible. Where proposed routes require new crossings over a watercourse, the proposed works would have a low impact on this species if present. Any loss of foraging habitat will be temporary and the area very small in the context of the surrounding habitats.

Any affected watercourses that have not yet been assessed for water vole potential will require additional survey ahead of construction (Section 5). Further survey work may identify the requirement for a water vole licence to be obtained. These additional licenced works (if required) are not covered by these precautionary methods. Licences from Natural England can take six weeks (longer during busy periods or if the first submittal is not approved).

Attention has been paid to the presence of water voles and, as far as is reasonable, appropriate action should be taken to safeguard the animals and their places they use for shelter and protection (see Section 4). On the basis of specialist knowledge and experience working with water voles, it is considered on balance that displacement of water voles under licence may be required following the additional surveys.

## 4 Precautionary Method Statement

### 4.1 General measures

The details of the precautionary methods will form the basis for a site briefing with the Contractor. A Mott MacDonald Ecologist will be present prior to the commencement of the site works to undertake a brief Tool Box Talk (TBT). The TBT will outline the known and potential ecological constraints within the footprint of the Scheme and sets out the methods of working that need to be employed by Network Rail for minimising impacts to protected species during the proposed works. A record of attendance to be completed as part of the TBT is provided in Appendix E.

It will be the responsibility of the Network Rail to ensure the measures detailed in these precautionary methods are undertaken. A member of staff that will be present on the Scheme for the full duration of the works will be appointed by Network Rail as the Scheme's Ecological Representative. The Ecological Representative will be responsible for ensuring that works minimise impacts to wildlife throughout the full duration of the works, when it is considered appropriate for an Ecologist not to be present. The Ecological Representative will be fully briefed on their required tasks by the Ecologist and the PMW updated to retain a record of these tasks.

The Ecologist will remain at each site during the implementation of key measures set out within this document. Key measures include all recommended ecology surveys and/or mitigation strategies that require a suitably qualified ecologist to be present to ensure works minimise risks to protected species.

Tasks identified within this report which can only be undertaken by an ecologist are specified within Section 4.2. The Ecological Representative will ensure that a copy of the Precautionary Method Statement is available during the works.

A list of telephone numbers of Ecologists and Ecological Representative (to be added once known) is included in Appendix D in case a protected species is found and further advice is required.

A preconstruction walkover survey would be undertaken by an ecologist at each site to confirm baseline conditions and refine requirements for mitigation during works (Section 5). This precautionary method statement would be updated in response to survey findings.

### 4.2 Species specific measures

Species specific precautionary methods are presented in this section. Each A3 sheet highlights the habitats and identification of signs typical of the legally protected species that have potential to be present within the Scheme; precautionary methods of working and the procedures to be followed should they be recorded within the Scheme during the works. Maps are provided in Appendix B for each legally protected species and to show the crossings where these species may be present.



4.2.1 Designated sites and HPIs

4.2.1.1 Special Protection Areas (SPA) and Ramsar wetland

Ramsar sites are wetlands of international importance designated under the Ramsar Convention (ratified in the UK in 1976) and are protected under the Wildlife and Countryside Act 1981 (as amended). SPAs are European protected sites (part of the EU Natura 2000 ecological network) classified in accordance with Article 4 of the EC Birds Directive (Directive 2009/147/EC). A HRA Task 1 Screening report identified that no likely significant effect alone or in combination is expected during the construction and operational phase of the new footpath and as such, does not require further assessment on site integrity. Full details are presented in report 367516/RPT192 (Mott MacDonald, 2017b).

Habitats and identification on site

Badger sett openings are D-shaped, typically situated on sloping ground in or near woodland clearings or at the base of hedgerows. Typically, a spoil heap will be piled up outside the sett entrance and old bedding may also be present. The sett can be a single entrance, or many entrances with obvious pathways between them.



Badger prints have five toes, a wide palm and five long claws.



Badgers dig latrines to contain their dung, which is distinguishable from dog or fox dung as it is often soft with an earthy smell.



4.2.1.2 County Wildlife Sites (CWS)

Local authorities may designate certain areas as being of local conservation interest. The criteria for inclusion, and the level of protection provided, may vary between areas. The designation of a CWS is classified by Natural England as being a 'Local Site' designation, though sites can also be of a regional and national importance. CWS are areas of land with significant conservation importance. These sites, together with statutory designations, are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined.

The proposed route of new sections of footpath will cross through non-statutory designated sites (CWSs at S07 and S17). CWSs also lie immediately adjacent to S03 and S05. Access to each CWS would be unchanged and the small scale, localised nature of the works has no implications for loss of habitat or disturbance. Indirect impacts potentially arising from works adjacent to a watercourse would be controlled by the application of best practice guidance and Network Rail standards. It is considered that there is no potential loss of integrity at any of the CWSs. However, consultation with the Suffolk county ecologists is ongoing.

Contractors are to be made aware of the sensitivity of surrounding habitats associated with the designated sites. Contractors should restrict movements to the alignment only and locate any welfare units/site vehicles, if required, outside the boundary of the CWSs and where possible, on hard standing to minimise impacts.

4.2.1.3 Protected hedgerows

The Hedgerows Regulations (1997) protect countryside hedgerows. A countryside hedgerow is protected if it meets certain criteria for length, location and 'importance'. A hedgerow is important (and is protected) if it is at least 30 years old and meets at least one other criteria set out under Hedgerows Regulations (1997). The regulations allow the Planning Authority to protect 'important' countryside hedgerows by controlling their removal through a system of notification.

Hedgerow surveys are required at S05 to determine whether the hedgerow meet the criteria to qualify as 'important' under the Hedgerows Regulations 1997 (Section 5).

4.2.2 Badger

4.2.2.1 Crossings where badgers may be present

No badger setts were identified during the field surveys undertaken between March 2016 and September 2017. Evidence of badgers (foraging signs) were observed along the proposed route at S04 (See Anglia Level Crossing Ecology Constraints Report: Suffolk (Mott MacDonald, 2017a)). Crossings with suitable habitat for badger are shown in Appendix B.

4.2.2.2 Precautionary Method

All routes should have a walkover ahead of works to identify potential badger setts. A preconstruction check for badgers to be carried out by an ecologist within section of proposed route at S27.

Vegetation clearance should be undertaken in the presence of an ecologist using hand tools only in areas of dense scrub. If evidence of a badger sett is found clearance works would stop. If any proposed route alignment is deemed to be too close to a badger sett or considered to cause a disturbance, best practice will be followed. Either the route would be adjusted within the limit of the Order so that it lies at a sufficient distance so as not to cause disturbance or appropriate



mitigation would be agreed with Natural England through the licensing process.

Any excavations should be filled or covered overnight. If this is not possible, one side of the excavation should be graded so that it provides an escape ramp to prevent any animals becoming entrapped.

Works will be carried out in accordance with Network Rail's CR-E whereby the contractor shall protect and enhance the existing biodiversity

#### 4.2.2.3 What to do

Badgers are active throughout the year and can excavate new setts at any time. A walkover survey will be undertaken prior to the start of works. The works are of short duration therefore, in the unlikely event that a new badger sett is found within 30m of proposed works, advice should be sought from an ecologist prior to the start of works (Appendix D).



4.2.3      **Bats**

4.2.3.1      **Crossings where bats may be present**

Mature trees and buildings/structures with potential for bats that lie adjacent or along to proposed routes are presented in Anglia Level Crossing Ecology Constraints Report: Suffolk (Mott MacDonald, 2017a) and Appendix B.

4.2.3.2      **Precautionary Method**

Works (general): Night time works taking place in the vicinity of the trees should have artificial lighting directed away from the trees to avoid potential disturbance to roosting bats. In accordance with Bat Conservation Trust (BCT) Interim Guidance (BCT, 2014) lighting associated with the works should be the minimum required for the task.

Works (tree felling): Tree removal will be kept to a minimum for the Scheme. Prior to vegetation clearance a suitably experienced ecologist will inspect trees for features suitable for roosting bats. All trees within the ZOI which have been assessed as having bat roost potential and which require felling will then be subject to detailed external and internal inspections of all ecological features of importance to roosting bats in order to establish the presence of, or evidence of, bats immediately prior to the trees being felled. The felling of the tree will only be permitted if it can be demonstrated that there will be no subsequent disturbance or damage/destruction of other trees confirmed as supporting bats.

Where it is not possible for any reason, to inspect a tree (holes/hollows/cavities) in situ, that is considered to have bat potential, the section of tree containing the hole/hollow/cavity will be cut and carefully lowered to the ground using soft-fell techniques (i.e. lowering the section of tree carefully to the ground using ropes).

If bats (alive or dead) or evidence of the presence of bats is found removal of the tree(s) will need to be undertaken under a mitigation licence. If bats are considered to be absent, it is recommended to fell the tree(s) in sections to maintain the integrity of any Potential Roost Feature (PRFs) present. Each section with a PRF should be lowered to the ground and subjected to a final check using an endoscope prior to its disposal. If bats are found during this final check, the tree section should be moved out of the works footprint with the cavity unobstructed to allow the bats to leave at dusk.

4.2.3.3      **What to do**

If a bat (dead or alive) or evidence of bat presence (such as droppings or feeding remains) is found on Site, all works must cease in that area and advice should be sought from an ecologist (Appendix D).





4.2.4 Breeding birds

Habitats and identification on site

Birds can nest in trees, scrub and dense ground vegetation as well as buildings and infrastructure. A nest often creates an anomaly with its surroundings in terms of shape, colour or structure.

During breeding, birds may fly up from the ground when disturbed. They can be observed carrying nest material or food. They can be on sentry duty or repeatedly singing from a prominent place, one of these is usually close to the nest. Birds show agitated behaviour, feigning injury and/or repeated calling when the nest is disturbed.



1. Song thrush *Turdus philomelos* nest



2. Skylark *Alauda arvensis* nest

4.2.4.1 Crossings where breeding birds may be present

The full extent of the proposed works will be covered by the precautionary methods with respect to common breeding birds. The reedbed along the proposed route at S01 provides suitable habitat for Cetti’s warbler, a Schedule 1 bird (See Anglia Level Crossing Ecology Constraints Report: Suffolk (Mott MacDonald, 2017a) and Map in Appendix B).

4.2.4.2 Precautionary Method

Schedule 1 birds

Further surveys: A breeding bird survey is required at S01 where habitats with potential to support Cetti’s warbler require removal during breeding bird season (considered to be 1 March – 31 August) (Section 5).

A breeding bird survey would be required to identify and map Cetti’s warbler territories to ensure no direct or indirect disturbance to breeding birds during proposed works. Field methods would be based on the British Trust for Ornithology’s Common Bird Census (Marchant, 1983) with the number of visits undertaken in accordance with Scottish Natural Heritage (2005 and 2014).

All breeding birds

Vegetation clearance should be undertaken outside the breeding season (1 September to 28). Where vegetation clearance activities cannot be avoided during the breeding season, a check for breeding birds would be undertaken no more than 24 hours before vegetation clearance. If breeding birds are discovered, then works within a 10m buffer of the active nest would be postponed until the chicks have fledged and the nest is inactive. Nests with large chicks should not be approached as it may cause chicks to fledge prematurely.

Works would also be carried out in accordance with Network Rail’s CR-E whereby the contractor shall protect and enhance the existing biodiversity.

4.2.4.3 What to do

If a bird’s nest is found on site and you are unsure of what to do, seek advice from an ecologist (Appendix D).

4.2.5 Great crested newt



4.2.5.1 Crossings where great crested newts may be present

Waterbodies with potential to support breeding populations of great crested newts were identified within 250 m from aerial imagery and OS maps. No Habitat Suitability Index (HSI's) have been undertaken of these water bodies. An HSI is a numerical index (between 0 and 1) which was developed as a means of evaluating quality and quantity of habitat for great crested newts. All sections of the scheme that take place in terrestrial habitat that is considered to have some potential to support great crested newts are show in a map in Appendix B and Anglia Level Crossing Ecology Constraints Report: Suffolk (Mott MacDonald, 2017).

4.2.5.2 Precautionary Method

Works at S21 will not commence without consultation with Suffolk Wildlife Trust to ensure agreement with precautionary measures outlined below.

Any vegetation clearance should be undertaken during the active great crested newt season (March to October). A TBT would be given to all contractors working within the area, prior to the start of works, to ensure that they are aware of the potential presence of newts. All suitable habitats within the working area would be checked by the ecologist for the presence of great crested newt, prior to works.

Any piles of wood, brash and rubble within the working area would be dismantled by hand and immediately removed to outside the working area. Where it is not essential to remove potential refuges to undertake the works, these will be left undisturbed. Once the hand search is complete the vegetation will be strimmed and/or cut by the Contractor to approximately 150mm.

A further vegetation cut would be carried out in the presence of an ecologist following the initial cut to reduce the vegetation to the required height. If works are occurring during the hibernation period for great crested newt (November to February), potential refuges are to be left undisturbed.

Works will be carried out in accordance with Network Rails CR-E whereby the contractor shall protect and enhance the existing biodiversity.

4.2.5.3 What to do

If at any time during the works a great crested newt is seen, all works should halt (when safe to do so) and the Ecologist must be contacted immediately. The Ecologist will then be able to advise on an appropriate course of action. At no time should you attempt to handle a great crested newt as incorrect handling can cause injury/death.





#### 4.2.6 Hazel dormouse

##### 4.2.6.1 Crossing where hazel dormouse may be present

There is potential habitat for hazel dormouse within woodland and hedgerows along the proposed routes S04 and S05 (See Anglia Level Crossing Ecology Constraints Report: Suffolk (Mott MacDonald, 2017a) and Appendix B).

##### 4.2.6.2 Precautionary Method

Any affected woodland/ hedgerows that have not yet been assessed for dormouse potential will require additional survey ahead of construction (Section 5). Further survey work may identify the requirement for a dormouse licence to be obtained. Additional licenced work (if required) is not covered by these precautionary methods.

A habitat suitability assessment (optimal vs sub-optimal) for this species was conducted at crossing S04 and S05 in August 2017. This assessment was based on habitat connectivity, vegetation density and height and abundance of fruiting shrubs.

The wider landscape surrounding the proposed works at S04 supports blocks of woodland, which are connected to the proposed route. Arable farmland dominated adjacent habitats both east and west of the rail line, with a small section of woodland to the southwest of the survey area. The hedgerow comprised elder and elm with bramble and nettles. Approximately 2-3m in height and approximately 1m wide. There is a gap for vehicle access into the field. There were no sign of recent management (apart from yearly flailing) at the time of survey. These habitats are considered to be sub-optimal. No hedgerow removal is required as part of the works as the route will utilise the existing gap (used for vehicle access into the field) to avoid habitat loss.

In sub-optimal habitats, a precautionary approach would be adopted for vegetation clearance. In the unlikely event that a dormouse is present, this will to minimise the likelihood of injury/ death. Works would require small-scale and localised ground disturbance.

Vegetation clearance would only occur following hand searches by a licensed ecologist. Once the area has been checked and dormice are confirmed absent from the area, vegetation clearance should be undertaken by hand, in a slow and directional manner in the presence of the ecologist. the timing of vegetation clearance should avoid sensitive periods such as hibernation (October/ November to April/ May) and when female dormice are likely to have young in their nests (between early June and late September), to minimise risks of harm or injury in the unlikely event that dormouse are present.

The wider landscape surrounding proposed works at S05 supports blocks of woodland, with areas of woodland connected to the site. The nearest Ancient Woodland was Wherstead Wood, immediately adjacent to the site, on the opposite side of a small country lane. Ancient Replanted Woodland (Spinney Wood), was also immediately adjacent to site, on opposite side of a minor road. Other adjacent land use was arable farmland with connecting hedgerows.

Optimal habitats (Ancient Woodland and hedgerows) identified at S05 require further survey to inform final mitigation ahead of construction (Section 5). It should be noted that surveys require nest tubes to remain in place for the entire season (between April and November) in accordance with Natural England guidance (Bright et al, 2006).

##### 4.2.6.3 What to do

If at any time during the works a dormouse or dormouse nest is seen, all works should halt (when safe to do so) and Ecologist must be contacted immediately (Appendix D).



4.2.7 European otter

Habitats and identification on site

Otters occur in both rural and urban areas, including major cities. They will use any size watercourse. Places where they are found include rivers, canals, lochs and reservoirs, estuaries, coasts, streams, ponds, bogs, marshes and woodland. Otters may use a variety of places as ‘holts’ or sheltering places, for instance within well covered vegetation or in-between boulders/ rocks.



They are chocolate brown in colour with flattened heads, webbed feet and thick tapering tails.



Other ways to identify the presence of otter are from field signs, including prints (as shown above), spraints (faeces) and feeding remains.

4.2.7.1 Crossings where otters may be present

Rivers, streams and woodland with potential for otters that lie adjacent or along to proposed routes are presented in Anglia Level Crossing Ecology Constraints Report: Suffolk (Mott MacDonald, 2017) and Map in Appendix B.

4.2.7.2 Precautionary Method

Further surveys: Assessment of suitability of ditches to support otters is required at S03, S07 and S08 (Section 5). These are to be undertaken preconstruction to inform appropriate mitigation during construction where relevant. Surveys to follow best practice (Natural England, 2014).

Works should be carried out ensuring there is no obstruction of watercourses during works to allow otters to continue commuting along the watercourse throughout the duration of the works.

If a potential holt site is identified the application of best practice would be undertaken and/or avoidance of impacts through appropriate timing of works. This would prevent any adverse impact to otter as a result of increased noise associated with the presence of machinery/increased human presence during construction. Where night works are required adjacent to habitat considered suitable for otter, directional lighting would be used to reduce light spill. It is recommended that all works near water are undertaken with regard the Construction Industry Research and Information Association (CIRIA) guidance on the control of water pollution from construction sites. Works will be carried out in accordance with Network Rail’s CR E whereby the contractor shall protect and enhance the existing biodiversity.

4.2.7.3 What to do

If at any time during the works an otter or possible otter holt is seen, all works likely to cause damage or destruction to a holt (vegetation clearance, excavation, movement of machinery etc) should halt (when safe to do so) and the Ecologist must be contacted immediately (Appendix D).



4.2.8 Common reptiles

Habitats and identification on site

Britain supports four species of common reptile which are found throughout a number of habitat types and can be found in large numbers within grassland, scrub and near wet areas such as ponds.



1. Common lizard *Zootoca vivipara*

ID: The common or viviparous lizard is widespread. It is a small, very quick brown lizard. Typical adult size is approx. 15cm (including its tail) and coloration is commonly some shade of brown with patterns of spots or stripes. Unusual colour variations are common, everything from yellow through various shades of green to jet black are encountered.  
Habitat: Most frequently seen on commons, heaths, dry stone walls, and embankments around the British Isles



2. Slow worm *Anguis fragilis*

ID: The slow worm is a lizard which has evolved into a legless form with the development of a burrowing habit. Appearance is always shiny; the males are grey, and the females brown with dark sides and a thin line down the back.  
Habitat: The slow-worm can be found in almost any open or semi-open habitat. It likes warmth but instead of basking in the open sun it prefers to hide under a stone, log or piece of discarded rubbish such as a sheet of corrugated iron or plank of wood exposed to the sun.



3. Grass snake *Natrix natrix*

ID: The grass snake is the largest UK snake. Grass snakes are typically grey-green in colour, often with black spots and a yellow/cream/orange collar. Black lines run down from their large golden eyes to their top lips. Their underside is usually white or pale yellow with a checkering of blue-black and white markings. Their forked tongues are blue-black.  
Habitat: Preferred habitats tend to be associated with water e.g. ponds, lakes, reservoirs, marshes, river valleys but, also requires a range of terrestrial habitats, including grassland, scrub and woodland



4. Adder *Vipera berus* (Female)

ID: Adders have a venomous bite, but this is rarely fatal to humans. A full-grown adult adder can be up to 65 cm long. Adders have a dark zig- zag running along the back and a dark V on the back of the head. As with all reptiles, colouration varies and becomes duller as sloughing (skin shedding) approaches. If a black snake is encountered (melanistic) it is best practice to treat this as an adder.  
Habitat: Adders are usually associated with open heathland in the southern regions, although they also often occur in dense woodland and in particular open, sunny areas within woodland.



5. Adder (Male)

4.2.8.1 Crossings where common reptiles may be present

The full extent of the proposed works will be covered by the precautionary methods with respect to common reptiles (See Anglia Level Crossing Ecology Constraints Report: Suffolk (Mott MacDonald, 2017a) and Appendix B).

4.2.8.2 Precautionary Method

If vegetation clearance is undertaken during the active reptile season (March to October), immediately prior to the works, all suitable habitats within the working area would be checked by an ecologist or ecological representative (having been advised by the ecologist). Any piles of wood, brash and rubble within the working area would be dismantled by hand and immediately removed to outside the working area. Where it is not essential to remove potential refuges to undertake the works, these would be left undisturbed. Once the hand search is complete the vegetation would be trimmed and/or cut using hand tools by the Contractor to approximately 150mm. Following the initial cut the area would be checked for the presence of reptiles before being cleared to ground level.

If works need to take place during the hibernation period (October to March), an ecologist would be present to check the area for suitable hibernation sites. Should hibernating reptiles be recorded, they will be left undisturbed and their place of shelter returned to its original condition to minimise the risk of mortality at this time of year.

Works would be carried out in accordance with Network Rail’s CR-E whereby the contractor shall protect and enhance the existing biodiversity.

4.2.8.3 What to do

Any reptile found during the site work should be left to move away of its own accord. If a common lizard, slow worm or grass snake does not move away from the footprint of the works, they can be carefully moved by hand, taking care to any avoid injury and relocated in a suitable area (i.e. dense vegetation) within the immediate surrounds. Adders should not be handled as their bite is venomous and could cause serious injury. If an adder does not move from the area, an ecologist should be contacted. If a large number of reptiles are observed (i.e. more than five), work should stop and an ecologist should be contacted for advice regarding how to proceed.

4.2.9 Water vole

Habitats and identification on site

European water voles are a uniform dark brown colour, with slightly paler coloration on the underside. Their pelage is quite thick and they are furred over their entire body, including their tail. They are found in slow moving rivers streams ditches and around lakes, reed-beds marshes and ponds.

Water voles will establish burrows several meters from a water course. Water vole burrow entrances are typically wider than high with a diameter of 4-8cm, located at the water's edge, on banks or at the top of banks, occurring within vegetation up to 5m from the water.



Latrines and feeding remains of large grasses and rushes are known to be good survey indicators of this species.



4.2.9.1 Crossing where water voles may be present

Streams and ditches with potential for water voles that lie adjacent or along to proposed routes are presented in Anglia Level Crossing Ecology Constraints Report: Suffolk and Map in Appendix B.

4.2.9.1 Precautionary Method

Where potential impacts to water vole are considered possible (S01, S13, S24 and S69), preconstruction water vole presence/absence surveys will be undertaken to inform detailed mitigation and licensing requirements. Surveys to follow best practice (Dean et al, 2016). Water vole burrows will be accurately mapped during surveys and no works will be carried out within 10m of a burrow.

It is recommended that all works near water are undertaken with regard the Construction Industry Research and Information Association (CIRIA) guidance on the control of water pollution from construction sites.

Works would be carried out in accordance with Network Rail's CR-E whereby the contractor shall protect and enhance the existing biodiversity.

4.2.9.2 What to do

A preconstruction survey will be undertaken prior to the start of works. However, in unlikely event that a potential burrow is discovered during works (in the absence of an ecologist), all works likely to cause damage or destruction to a burrow (vegetation clearance, excavation, movement of machinery etc) should halt (when safe to do so) and the Ecologist must be contacted immediately (Appendix D).



4.2.10 Non-native invasive plant species  
(Indian balsam)

Habitats and Identification on site

1. Indian balsam

Indian Balsam is a non-native and invasive plant species in the UK, and occurs in a variety of disturbed habitats, especially on riverbanks, waste ground and open woodland. Indian Balsam plants can grow up to 2.5-3m tall and reproduce through seeds only.

4.2.10.1 Crossings where non-native invasive species may be present

There are biological records of non-native invasive plant species within 500m crossing S07 (See Anglia Level Crossing Ecology Constraints Report: Suffolk (Mott MacDonald, 2017a) and in Appendix B).

4.2.10.2 Precautionary Method

It is an offence to plant or otherwise cause non-native invasive plant species (Indian balsam) to grow (spread) in the wild.

No non-native invasive plant species were recorded in the Zol of any of the crossings during the filed surveys. Considering the localised scale and nature of the works, it is considered reasonably unlikely that the works will result in an offence.

4.2.10.3 What to do

If a previously unrecorded non-native invasive plant species (such as Indian balsam) is suspected on Site, an ecologist should be contacted (Appendix D). If it is confirmed to be a non-native invasive plant species, advice should be sought from gov.uk.

## 5 Additional Survey Requirements

The table below provides a summary of additional survey requirements for the scheme following the Anglia Level Crossing Ecology Constraints Report: Suffolk (Mott MacDonald, 2017) (excluding those completed between July and September 2017). The additional surveys will be undertaken at an appropriate time of year for the species of concern and sufficient time will be incorporated into the program if a protected species licence is required. The detailed programme of works is unknown at this stage and will be finalised post-consent. However, the ecological assessment will be updated where changes occur.

Results of these surveys will be issued as an amendment to this report.

**Table 1: Further Survey Requirements: Suffolk**

Ecological Feature	Survey Requirements	Timings
HPIs: Hedgerow Surveys	S05: Hedgerow surveys required to inform detailed design and avoid impacts to these habitats.	Preconstruction: Survey period April to October The construction program needs to consider the seasonality of surveys and program them in accordingly to allow sufficient time for mitigation, if necessary.
Badger	S27: Preconstruction check	Preconstruction: optimal time spring/autumn. One survey to be conducted during the optimal period. The construction program needs to consider the seasonality of surveys and program them in accordingly to allow sufficient time for mitigation or licencing requirements, if necessary. Licences from Natural England can take six weeks (longer during busy periods or if the first submittal is not approved). Licences to exclude badgers and to close down or destroy a sett are only issued between 1 July and 30 November.
Breeding Birds	Application of precautionary methods during construction S01 – If habitats suitable for Cetti's warbler need to be removed during the breeding bird season a breeding bird survey would be required. Field methods should be based on the British Trust for Ornithology's Common Bird Census (Marchant, 1983) with the number of visits undertaken in accordance with Scottish Natural Heritage (2005; 2009)	Preconstruction: minimum of three visits (end March-June) undertaken at monthly intervals The construction program needs to consider the seasonality of surveys and program them in accordingly to allow sufficient time for mitigation or licencing requirements, if necessary.



Ecological Feature	Survey Requirements	Timings
Hazel Dormouse	<p>S05: Nest tube/ nest box survey required to inform mitigation and licence requirements.</p> <p>Surveys to follow best practice (Bright et al, 2006)</p>	<p>Preconstruction: Survey period April to November.</p> <p>It is recommended that 50 nest tubes are set out in April/ May, spaced 15 to 20 metres apart. Each tube should be checked regularly, at least once every 2 months until November.</p> <p>A scoring system is used whereby the score needs to be over 20 to judge presence or likely absence. An index table of values for all the months during which tubes are in place is used to calculate the score. Nest boxes can also be used alongside a nest tube survey to increase the probability of finding dormice. They would also be useful for post development monitoring.</p> <p>If required, a European Protected Species (EPS) mitigation licence from Natural England can take six weeks (longer during busy periods or if the first submittal is not approved).</p> <p>The construction program needs to consider the seasonality of surveys and program them in accordingly to allow sufficient time for mitigation or licencing requirements, if necessary.</p>
Otter	<p>S03, S07, S08 - Further survey required to inform mitigation and licensing requirements</p> <p>Survey and mitigation to follow Natural England guidance (Natural England, 2014)</p>	<p>Preconstruction: Any time of year, though winter is optimal when obscuring vegetation is no longer present</p> <p>One survey to be conducted during the optimal period. The construction program needs to consider the seasonality of surveys and program them in accordingly to allow sufficient time for mitigation or licencing requirements, if necessary.</p> <p>An EPS mitigation licence from Natural England can take six weeks (longer during busy periods or if the first submittal is not approved).</p>
Water vole	<p>S01, S13, S24, S69 - Water vole presence/absence survey required. Surveys to follow best practice (Dean et al, 2016)</p>	<p>Preconstruction: Surveys are required to inform mitigation and licencing requirements (mid-April to late September).</p> <p>The construction program needs to consider the seasonality of surveys and program them in accordingly to allow sufficient time for mitigation or licencing requirements, if necessary.</p> <p>A class licence from Natural England for displacement of water voles can take six weeks (longer during busy periods or if the first submittal is not approved).</p> <p>Displacement of water voles can only be carried out at certain times of the year (February to April) for the purposes of conservation under the Class Licence.</p>
Invasive Species	Preconstruction check	Preconstruction walkover.
Other notable species	Preconstruction check	Preconstruction walkover.

Ecological Feature	Survey Requirements	Timings
All	<p>Due to the mobility of animals and the potential for colonisation of habitats, it is recommended that an updated ecological survey be undertaken prior to the works should this not occur within 12 months of the date of the assessments carried out for the Ecology Constraints Report: Suffolk (Mott MacDonald, 2017a).</p> <p>A preconstruction walkover survey would be undertaken of each proposed route option to confirm baseline conditions and refine requirements for mitigation during works.</p>	<p>Preconstruction walkover. The construction program needs to consider the seasonality of surveys and program them in accordingly to allow sufficient time for mitigation or licencing requirements, if necessary.</p>

Source: Mott MacDonald

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## A. Summary of legislation

The information in this section relates to species assessed within this document as having the potential to be affected by the development and is a summary version of the full legislative text only. The acts described to in this section should be referred to for the full legislative text.

**Table 2: Summary of legislation**

Species	Legislation
European badger	Badgers and their setts are afforded protection under the Protection of Badgers Act 1992. Under this act it is an offence to capture, kill, injure and cruelly or ill-treat a badger. It is also an offence to interfere with their setts without the appropriate derogation licence.
Bats	<p>All bat species found in the UK are fully protected as EPS under the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012). It is an offence to deliberately capture, injure or kill a bat; deliberately disturb a bat; or damage or destroy a breeding site or resting place used by a bat (whether or not the bat is present in that resting place).</p> <p>Bats are also protected in the UK under the Wildlife and Countryside Act 1981 (as amended). This means It is an offence to intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.</p> <p>Seven species are also listed on Section 41 of the NERC Act 2006.</p>
Birds	<p>All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), which prohibits the intentional killing, injuring or taking of any wild bird (and) the taking, damaging or destroying eggs or of the nest (whilst being built or in use).</p> <p>Schedule 1 bird species are afforded greater protection under the Wildlife and Countryside Act 1981 (as amended); it is an offence to disturb Schedule 1 birds at or near the nest or the dependant young of Schedule 1 birds. This can include pairing behaviour occurring prior to nesting.</p>
Great crested newt and other amphibians	<p>Great crested newts are fully protected as EPS under the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012). It is an offence to deliberately capture, injure or kill a great crested newt; deliberately disturb a great crested newt; deliberately take or destroy its eggs; or damage or destroy a breeding site or resting place used by a great crested newt.</p> <p>Great crested newts are protected under the Wildlife and Countryside Act 1981 (as amended)). Under this act it is an offence to intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a great crested newt in such a place.</p> <p>Great crested newts are also listed under Section 41 of the NERC Act (2006).</p> <p>Common toads are listed on Section 41 of the Wildlife and Countryside Act 1981 (as amended).</p>
Hazel dormouse	<p>Hazel Dormouse are fully protected as EPS under the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012) and are protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally kill, take or injure a dormouse; possess or control a dormouse; intentionally or recklessly cause damage, destruction or obscure access to any structure or place used by dormice for shelter or protection and intentional or reckless disturbance of dormice.</p> <p>Hazel Dormouse are also listed under Section 41 of the NERC Act (2006).</p>
European otter	<p>Otter are fully protected as EPS under the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012) and are protected under the Wildlife and Countryside Act 1981 (as amended). It is illegal to deliberately or recklessly kill, injure or take (capture) an otter; deliberately or recklessly disturb or harass an otter; and damage, destroy or obstruct access to a breeding site or resting place of an otter (i.e. an otter shelter).</p> <p>Otter are also listed under Section 41 of the NERC Act (2006).</p>
Common reptiles	Reptiles have varying degrees of protection under the Wildlife and Countryside Act 1981 (as amended). The common species of reptiles are protected under Schedule 5. This means it is prohibited to intentionally kill, injure or trade the common lizard, slow-worm, grass snake and adder.
European water vole	<p>Water vole are protected under the Wildlife and Countryside Act 1981 (as amended). it is an offence to intentionally or recklessly cause damage, destruction or obscure access to any structure or place used by a water vole for shelter or protection; to intentionally or recklessly disturb a water vole while occupying such a place; or to intentionally kill or injure a water vole.</p> <p>Water vole are also listed under Section 41 of the NERC Act (2006).</p>
Other mammals	<p>All wild mammals are also protected from intentional inhumane treatment under the Wild Mammals (Protection) Act (1996).</p> <p>European hedgehogs are listed on Section 41 of the NERC Act 2006.</p>
Non-native	It is an offence to plant or otherwise cause to grow in the wild invasive non-native plants listed on Schedule 9 Part

Species	Legislation
invasive plant species	2 of the Wildlife and Countryside Act 1981 (as amended).

## B. Maps



## C. Great Crested Newt Rapid Risk Assessment

### C.1 Is a mitigation licence required?

#### C.1.1 Background

The template for the Natural England Method Statement used for development licensing purposes (Natural England, 2015) includes a Rapid Risk Assessment Tool, which provides an initial estimate of the potential risk of the proposed works resulting in an offence being a committed under the Conservation of Habitats and Species Regulations 2017 (SI 2017/1012) and therefore requiring mitigation and/ or a licence from Natural England.

Given that great crested newts can disperse over 1km from breeding ponds, the potential for offences may seem vast, yet the probability of an offence outside the core breeding and resting area is often rather small, and even if an offence takes place, the effect on the population may be negligible.

#### C.1.2 Method and limitations

The simple risk assessment tool (Table C.1) has been used to as part of the process to inform the decision as to whether to apply for a licence. The impacts of the works without any licensed mitigation were considered and a likely effect was selected for each "component".

This risk assessment tool was used as a general guide only and has been used following a site-specific risk assessment informed by field surveys of the crossings. Maps of each crossing and associated proposed works and all waterbodies within a 250m radius are presented in Suffolk Ecology Constraints (Mott MacDonald, 2017). A careful comparison using the survey results and development plans was carried out to also inform the decision to whether a licence should be obtained.

Each crossing is different and the risk assessment tool does not include all factors (such as population size, terrestrial habitat quality, presence of dispersal barriers, timing and duration of works or detailed layout of development in relation to newt resting and dispersal).

The following factors could increase the risk of committing an offence:

- Large population size;
- High pond density;
- Good terrestrial habitat;
- Low pre-existing habitat fragmentation;
- Large development footprint; or
- Long construction period.

The following factors could decrease the risk:

- Small population size;
- Low pond density;
- Poor terrestrial habitat;
- Substantial, pre-existing dispersal barriers;

- Small development footprint; or
- Short construction period.

These factors were considered during mitigation design.

#### C.1.3 Table C.1. Rapid Risk Assessment Tool

Component	Likely effect	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	0.001 - 0.01 ha lost or damaged	0.05
Land 100-250m from any breeding pond(s)	0.001 - 0.01 ha lost or damaged	0.005
Land >250m from any breeding pond(s)	0.01 - 0.1 ha lost or damaged	0.001
Individual great crested newts	No effect	0
Maximum:		0.05
Rapid risk assessment result:	<b>GREEN: OFFENCE HIGHLY UNLIKELY</b>	

#### C.1.4 Risk assessment results

The assessment result from Table C.1 indicates that the proposed works are of such a type, scale and location that it is highly unlikely any offence would be committed should the development proceed. Therefore, no licence would be required. Bearing in mind that this is a generic assessment, the specific plans for each crossings and proposed route have also been carefully examined to ensure this is a sound conclusion.

In addition, precautions to avoid offences have also been taken (See Section 4.2.5). It is likely that any residual offences would have negligible impact on conservation status, and enforcement of such breaches is unlikely to be in the public interest.

## D. Contact details

*Once ecological consultant for the works is known, contact details are to be added in the table below.*

Contact Name	Role	Mobile Number	E-Mail

## E. Toolbox Talk Attendance

### Anglia Rail Level Crossings

Name	Company	Role	Date	Signature

