Essex Biodiversity Validation Checklist

Prepared by Place Services

Essex County Council

Version 1.3 | June 2015

Essex Biodiversity PROJECT ...working for a better quality of life

place services

Essex County Council

Introduction

This checklist is a requirement for all planning applications to Essex County Council (ECC) considered a major development as defined by Article 8(7) of The Town and Country Planning (General Development Procedure) Order 1995. ECC is the determining planning authority for mineral, waste and Regulation 3 applications.

The assistance of a professional ecologist will be necessary to complete the checklist.

For other applications not defined as a major development, applicants are strongly encouraged to use the checklist where there may be adverse effects on the natural environment. It should be noted that applications not considered a major development will still be reviewed by a planning authority ecologist.

For some developments an Environmental Impact Assessment (EIA) maybe required. In these cases this checklist must still be completed and used to inform the content of the Ecology Chapter of the Environment Statement subject to any Scoping Opinion issued by the planning authority.

This checklist aims to provide a clear, transparent process for both applicant and Local Planning Authority (LPA) and ensure conformity with **British Standard 42020:2013 for Biodiversity (Code of practice for planning and development).** Its correct application will help the applicant and LPA comply with national biodiversity policy and legislation; thereby reducing the likelihood of delays resulting from the submission of inadequate information.

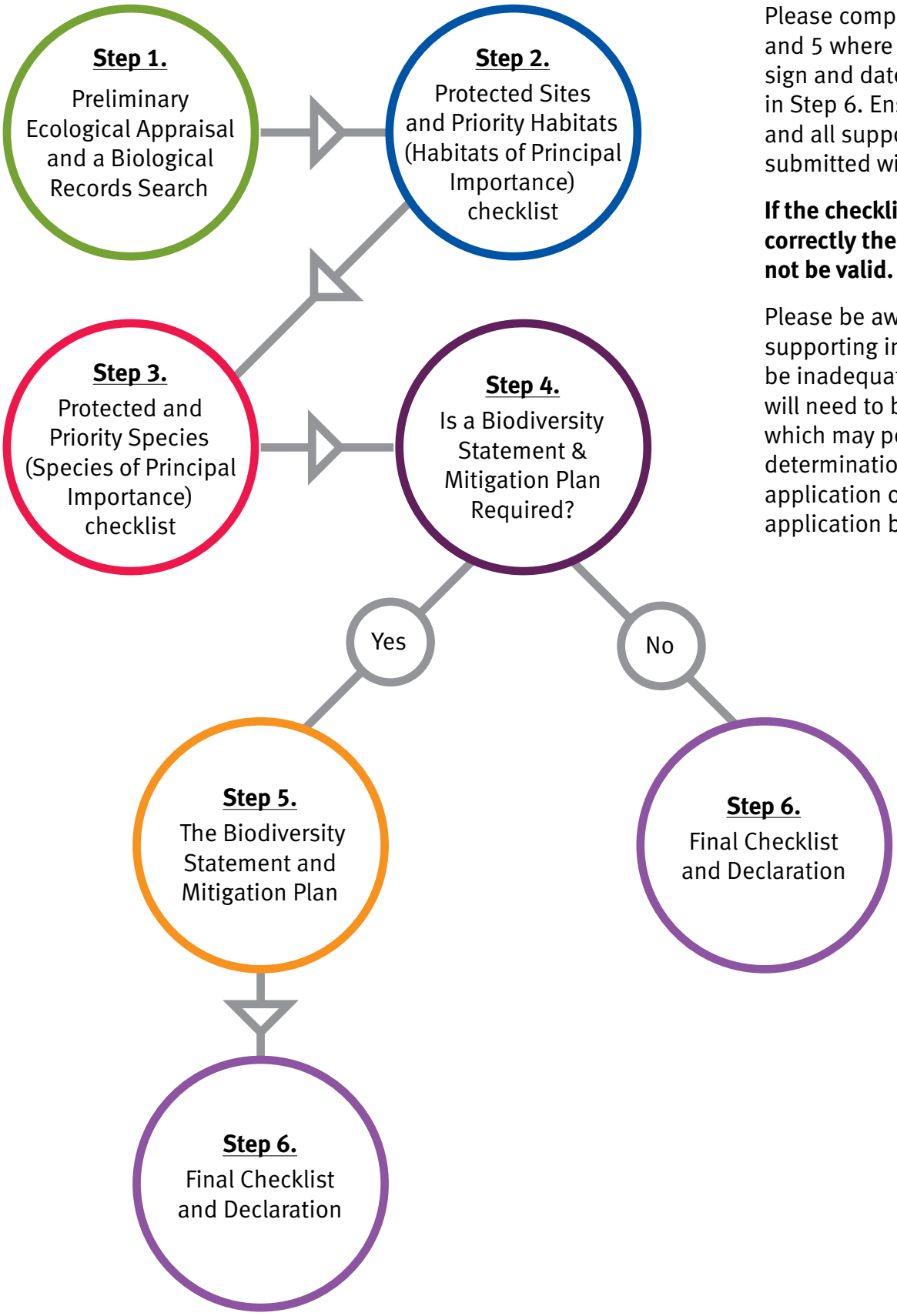
The checklist does not attempt to provide a detailed account of the legislation and policy that underpin biodiversity conservation in England. Further information can be obtained from Natural England and links have been provided in the text to external sources of information where appropriate. A glossary is also included at the end of the checklist.

The checklist is supported by Natural England's local Land Use Operations team and endorsed by the Essex Biodiversity Project.

The checklist is a component of Essex County Council's Supplementary Guidance for the Submission of Planning Applications. It has been produced with funding provided by Natural England.

The Six Steps

The checklist comprises 6 steps:



Please complete steps 1 to 4 - and 5 where necessary - then sign and date the declaration in Step 6. Ensure the checklist and all supporting information is submitted with your application.

If the checklist is not completed correctly the application may not be valid.

Please be aware that if the supporting information proves to be inadequate further evidence will need to be provided, which may potentially **delay** determination of the planning application or lead to the application being **refused**.

Return to contents

Step 1. Preliminary Ecological Appraisal and Biological Records Search

A Preliminary Ecological Appraisal (PEA) of the application site must be completed in a format consistent with the '**Guidelines for Preliminary Ecological Appraisal**' published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

The PEA and any subsequent Biodiversity Statement & Mitigation Plan should be prepared by a competent and qualified Ecologist. To find a suitable Ecological Consultant please contact **CIEEM** in the first instance.

The PEA must include a description of any recent works, such as vegetation clearance, that have been undertaken at the application site prior to the ecological appraisal that may affect its findings.

The PEA must include a biological records search of the application site and a 2 kilometre area extending from the sites boundary. It should encompass the following biodiversity features as a minimum:

Protected Sites

- Special Areas of Conservation (SAC), Special Protection Areas (SPA) & Ramsar sites
- Sites of Special Scientific Interest (SSSI)
- Local Sites (i.e. Local Wildlife Sites – LoWS and Special Roadside Verges)

European Protected Species

- Species protected under the Conservation of Habitats and Species Regulations 2010 (as amended)

National Protected Species

- Species protected under the Wildlife & Countryside Act 1981 (as amended)
- Badgers (The Protection of Badgers Act 1992)

Priority Habitats and Species

- Habitats of Principal Importance in England (Priority Habitats)
- Species of Principal Importance in England (Priority Species)

Relevant data can be obtained from the following sources:

- Natural England **www.magic.gov.uk**
  Interactive map displaying information about SPA, SAC, Ramsar, SSSI and Ancient Woodland sites
- Essex Field Club **www.essexfieldclub.org.uk/portal/p/Datasearch**
  Main source of species records
- Essex Wildlife Trust Biological Records Centre **www.essexwtrecords.org.uk**
  Holds site, habitat and species records including information about Local Wildlife Sites
- Essex Biodiversity Project **www.essexbiodiversity.org.uk**
  The Essex Biodiversity Action Plan can be viewed at this site

Using the results of the Preliminary Ecological Appraisal and Biological Records Search please complete **Steps 2 - 5** which will determine whether further survey and assessment work is required.

Return to contents

Step 2. Protected Sites and Priority Habitats (Habitats of Principal Importance) Checklist

Please complete Column 2 of Table 2.1 below. Links to more information have been provided for each site or habitat in column 1.

Table 2.1 - Sites and Habitats Checklist

1. Question	2. Please tick as appropriate
Is your development within 10km of a **Special Area of Conservation** (SAC), **Special Protection Area** (SPA) or **Ramsar Site**?	*Yes ☐ No ☑
Is your development within 2km of a **Site of Special Scientific Interest** (SSSI)?	Yes ☐ No ☑
Is your development within 250m of any **Habitats of Principal Importance**; **Ancient Woodland** and/or **Local Site**?	Yes ☑ No ☐

**If you answer yes to this question additional detail maybe required by the LPA and Natural England to enable the completion of a Habitat Regulations Assessment (HRA). It is strongly recommended that you seek advice from Natural England prior to submitting your application, and submit details of any relevant correspondence with your checklist and application.*

If you have answered **'yes'** to any of the questions above please complete **Table 2.2 (Sites and Habitat Evaluation)** before proceeding to **Step 3.**

If you have answered **'no'** to all of the questions above please proceed directly to **Step 3.**

Return to contents

Please complete Column 2 of Table 2.2 below, followed by Column 3 as appropriate.

Table 2.2 – Sites and Habitats Evaluation

1.	2.	3.
Site/habitat	Is there a 'reasonable likelihood' that the development will affect (either directly or indirectly) a site or habitat in column 1 prior to applying mitigation? (Tick as appropriate)	Where you have answered **'yes'** name the site(s) or habitat(s) and summarise any possible direct or indirect effects that may occur during construction or operation. For SPA's this includes 'qualifying species' occurring outside of the designated site boundary. Where you have answered **'no'** please provide a concise statement to support your answer.
SAC/SPA/ Ramsar site*	Yes ☐ No ☑	None in zone of influence

Return to contents

1.	2.	3.
SSSI*	Yes ☐ No ☑	None in zone of influence
Priority Habitats	Yes ☐ No ☑	None in zone of influence

**If you have answered 'yes' please seek advice from Natural England.*

Return to contents

1.	2.	3.
Ancient Woodland	Yes ☐ No ☑	None in zone of influence
Local Wildlife Sites	Yes ☑ No ☐	The widening proposals for the Gilden Way are situated >100m from the Gilden Way Meadow Local Wildlife Site (LWS). As well as supporting grass snake, the main reason for the designation of the site is the small population of great crested newt (GCN) in the pond. The proposed works are considered unlikely to trigger an offence in relation to GCN, and this is supported by Natural England's rapid risk assessment tool. However, the proposed construction compound would likely be sited at a redundant site immediately to the north of the Gilden Way Meadow LWS (centroid TL 47809 11284). The proposed compound site is currently hard-standing, however some ground works are likely to be required in converting it to a construction compound. Due to the proximity of this site to a known GCN pond, there is a risk (albeit it fairly low due to the proximity of optimal alternative habitat) that GCN may be present. Grass snake may also be present. Therefore, there is a risk that individuals of these species could be injured or killed during the proposed works. Impacts to these species could be adequately mitigated through the temporary (and licensed, for GCN) exclusion of these species from the proposed compound. The proposed widening of the Gilden Way by one lane, may make this road slightly more difficult for these species to cross. However, as this partial barrier to dispersal is already in existence, no new disturbance or fragmentation is being introduced. The habitats to the south of the pond are more optimal for amphibians and reptiles, as opposed to the road and built up areas to the north, and it is considered likely that they disperse from the pond to the south, rather than to the north.

Return to contents

Step 3. Protected and Priority Species (Species of Principal Importance) Checklist

Please complete Column 2 in Table 3.1 below. Where **'Yes'** is answered a circle in the corresponding row indicates those species with a **'reasonable likelihood'** of being present, and for which further **surveys** may be required. The table has been adapted from the **Natural England Standing Advice for Protected Species**.

1.	2. (Yes/No)	European Protected Species				Nationally Protected Species (for species groups links to the relevant legislation are provided)									Priority Species (Link to national List)				
		Bats	Dormouse	Great Crested Newt	Otter	Badger	Barn Owl	Breeding Birds	Invertebrates	Native crayfish	Other Protected Birds	Plants (Inc. fungi, ferns and bryophytes)	Reptiles	Water Vole	Birds	Fungi	Invertebrates	Mammals	Plants (Inc. ferns and bryophytes)
Does the application involve modification, conversion, demolition or removal of any of the following features or types of building: • loft space • any roof with gaps or cracks e.g. through uneven tiling • weather boarding • hanging tiles • gable ends • slate roof • clay-tiled pitched roof • wooden cladding • dense climbing plants • Underground structures including but not limited to cellars, tunnels, mines, kilns, ice-houses, air-raid shelters, all bridge structures, aqueducts and viaducts especially over water and wet ground • Agricultural building particularly but not exclusively those of traditional brick, stone or timber construction? • Buildings of pre-20th or early 20th Century construction	Yes ☐ No ☑	●					●	●			●				●				

Return to contents

1.	2. (Yes/No)	European Protected Species				Nationally Protected Species (for species groups links to the relevant legislation are provided)									Priority Species (Link to national List)				
		Bats	Dormouse	Great Crested Newt	Otter	Badger	Barn Owl	Breeding Birds	Invertebrates	Native crayfish	Other Protected Birds	Plants (Inc. fungi, ferns and bryophytes)	Reptiles	Water Vole	Birds	Fungi	Invertebrates	Mammals	Plants (Inc. ferns and bryophytes)
Does the application site contain or is it adjacent to: a lake; river; canal; stream; ditch; marsh; or reedbed?	Yes ☑ No ☐	●		●	●				●	●				●		●			
Does the application involve new lighting of a building/ structure with features suitable for bats or barn owl (e.g. described in row 1 above); or lighting of green space within 50m of woodland, water, hedgerows or tree lines?	Yes ☑ No ☐	●					●												
Does the application site contain or is it within 200m of: semi-natural woodland; scrub thicket; or is it bounded by or adjacent to hedgerows of predominantly native species that are greater than 1m tall and 0.5m wide?	Yes ☑ No ☐	●	●	●		●		●	●		●		●		●		●	●	
Does the application site contain or is it adjacent to a tree/woodland plantation, including of conifers?	Yes ☑ No ☐	●	●	●		●		●			●		●		●			●	
Does the application site contain trees that are older than 100 years; trees with obvious holes, cracks, cavities, rot, loose bark, woodpecker holes; or trees with a girth greater than 1m at chest height?	Yes ☑ No ☐	●					●	●	●		●				●	●	●		

Return to contents

1.	2. (Yes/No)	European Protected Species				Nationally Protected Species (for species groups links to the relevant legislation are provided)									Priority Species (Link to national List)				
		Bats	Dormouse	Great Crested Newt	Otter	Badger	Barn Owl	Breeding Birds	Invertebrates	Native crayfish	Other Protected Birds	Plants (Inc. fungi, ferns and bryophytes)	Reptiles	Water Vole	Birds	Fungi	Invertebrates	Mammals	Plants (Inc. ferns and bryophytes)
Does the application site involve disturbance, modification, demolition or construction on/in: gravel pits; quarries; natural cliff faces; or rock outcrops?	Yes ☐ No ☑	●		●		●		●	●		●	●	●		●		●	●	●
Does the application site contain or is it within 100m of a pond or other water-body (500m for major developments)? It can be permanent or ephemeral (sometimes dries out)	Yes ☑ No ☐			●					●						●		●		●
Does the application site contain or is it adjacent to grassland such as meadows, parkland or pasture?	Yes ☐ No ☑	●		●		●			●			●	●			●	●	●	●
Does the application site contain previously-developed, derelict or brownfield land; or railway land?	Yes ☑ No ☐	●		●		●	●	●	●		●		●		●		●		
Does the application involve the modification, disturbance or removal of: mature or over-grown gardens; rough grassland; scrubland or allotments?	Yes ☐ No ☑	●	●	●		●		●			●	●	●		●		●	●	●
Does the application involve disturbance or removal of a compost heap?	Yes ☐ No ☑												●						

Return to contents

1.	2. (Yes/No)	European Protected Species				Nationally Protected Species (for species groups links to the relevant legislation are provided)									Priority Species (Link to national List)				
		Bats	Dormouse	Great Crested Newt	Otter	Badger	Barn Owl	Breeding Birds	Invertebrates	Native crayfish	Other Protected Birds	Plants (Inc. fungi, ferns and bryophytes)	Reptiles	Water Vole	Birds	Fungi	Invertebrates	Mammals	Plants (Inc. ferns and bryophytes)
Does the application involve the modification, disturbance or removal of arable field(s) with hedgerow and/or grass margin?	Yes ☑ No ☐							●											●
Does the application site contain or is it within 50m of coastal habitats including estuary, rocky shore, sand dunes and saltmarsh, grazing marsh?	Yes ☐ No ☑				●				●					●			●		
Does the application site contain or is it adjacent to heathland?	Yes ☐ No ☑		●	●		●		●	●		●	●	●		●	●	●	●	●

If you have answered 'yes' to any of the questions above please complete Table 3.2 (Species Evaluation) on the following page.

If you have answered 'no' to all of the questions above please proceed to Step 4.

Return to contents

Please complete column 2 of Table 3.2 below followed by column 3 as appropriate.

Table 3.2 – Species Evaluation

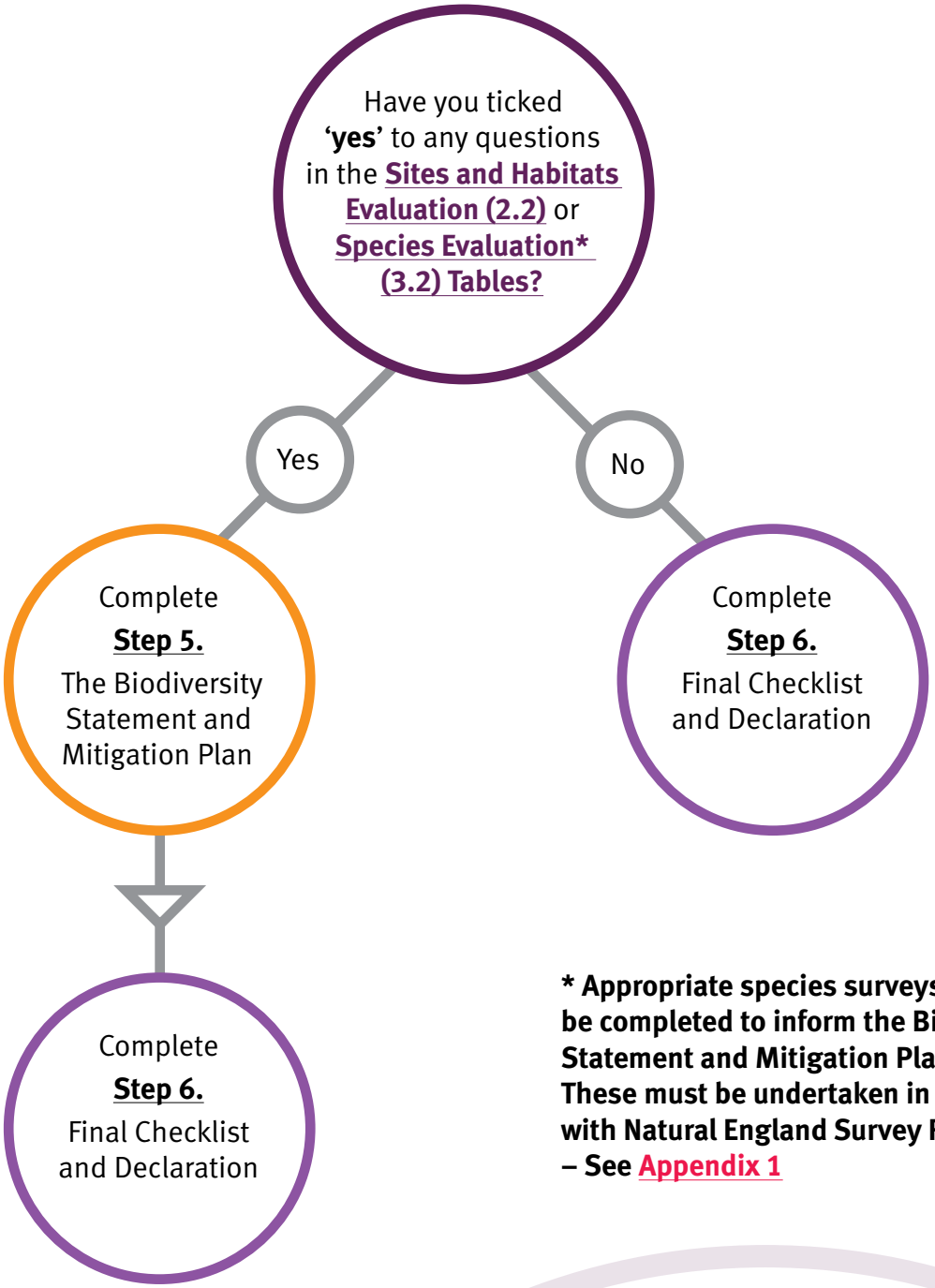
1.	2.	3.
Species (Identified following the completion of Table 3.1)	Is there a **'reasonable likelihood'** that the development will affect a species in column 1 **prior** to applying mitigation? (Tick as appropriate)	Where you have answered **'yes'** name the species and summarise any possible direct or indirect effects that may occur during construction or operation. **Appropriate species surveys will need to be completed to inform the Biodiversity Statement and Mitigation Plan (Step 5). These must be undertaken in accordance with Natural England Survey Requirements – See Appendix 1** Where you have answered **'no'** please provide a concise statement to support your answer.
European Protected Species	Yes ☑ No ☐	

Return to contents

1.	2.	3.
Nationally Protected Species	Yes ☑ No ☐	
Priority Species	Yes ☑ No ☐	Yellowhammer, song thrush, starling and house sparrow - vegetation clearance will reduce the habitat available to them. Clearance may also kill or injure the birds or their nests/eggs. Soprano pipistrelle, brown long-eared bats, barbastelle - as discussed in European Protected Species section, there may be impacts to bat roosts through tree removal and flight lines. Common toad - vegetation clearance may kill or injure toads

Return to contents

Step 4. Is a Biodiversity Statement and Mitigation Plan Required?



*** Appropriate species surveys will need to be completed to inform the Biodiversity Statement and Mitigation Plan (Step 5). These must be undertaken in accordance with Natural England Survey Requirements – See Appendix 1**

Return to contents

Step 5. Biodiversity Statement and Mitigation Plan

If you have answered **'yes'** to any questions in the Sites and Habitats Evaluation (2.2) or Species Evaluation (3.2) Tables you must submit a Biodiversity Statement and Mitigation Plan incorporating the findings of the Preliminary Ecological Appraisal.

The Biodiversity Statement and Mitigation Plan must include the following:

1. A map showing the location of protected sites on or within 2km of the application site boundary (see Appendix 2).
2. An Extended Phase 1 Habitat Survey which shows the location and extent of habitats that could be affected by the proposals; together with the features associated with Protected or Priority species.
3. Relevant Protected and/or Priority Species Surveys including results and methods* in accordance with Natural England's Standing Advice for Protected Species Survey Requirements (See Appendix 1).
4. A qualitative evaluation of the value and likely impacts/effects upon each biodiversity feature (habitat, species or, where appropriate, species assemblage). This should adopt the same approach to the evaluation and identification of impacts as recommended by the Chartered Institute of Ecology and Environmental Management (CIEEM) in their Ecological Impact Assessment (EcIA) Guidelines.
5. If you have answered **'yes'** to any questions in **Table 2.2 Sites and Habitats Evaluation** - a quantitative evaluation of the application site's habitats using Defra's Biodiversity Offsetting Metric i.e. a calculation showing the number of Biodiversity Units within the application site boundary before and after development. An **impact calculator** for developers is available on the Environment Bank website.
6. For each biodiversity feature that will be adversely affected a Mitigation Plan detailing:
   a. How adverse impacts will be avoided**, reduced and/or mitigated***.
   b. How any residual impacts that cannot be avoided and/or mitigated will be compensated*** for off-site.
   c. Where appropriate, how mitigation or compensation measures will be managed, resourced and monitored post-permission. Detailed guidance about the format of long-term mitigation and habitat management plans can be provided upon request.
7. Proposals for biodiversity enhancements. This is strongly encouraged for all developments, but especially for applications that occur within recognised local ecological networks such as a Living Landscape Area or the Greater Thames Marshes Nature Improvement Area (NIA).

   All habitat creation or restoration measures should be focused upon local conservation priorities as defined by the Essex Biodiversity Action Plan.

**This should clearly describe the survey work undertaken. Simply stating national survey guidelines were followed is not sufficient.*

***where the final location or design of the development is not necessarily the least harmful to biodiversity, the overriding technical reasons for this choice must be clearly evidenced.*

****Habitat mitigation and/or compensation measures must be expressed in Biodiversity Units (See Defra's Biodiversity Offsetting Metric).*

Return to contents

Supporting Notes

BS 42020 – a code of practice for biodiversity in planning and development

BS 42020 is a standard developed by the British Standards Institution (BSI) in association with biodiversity experts and stakeholders from across all sectors. The standard provides clear recommendations and guidance to ensure that actions and decisions taken at each stage of the planning process are informed by sufficient and appropriate ecological information. The BSI has produced a smart guide that provides an introduction to the benefits of BS 42020 **smart guide**.

European Protected Species

Please note that for European Protected Species a mitigation licence may be required – post planning permission - in order to carry out the development should permission be granted. It is important that you refer directly to Natural England the licensing body for further guidance, and submit any relevant correspondence with this checklist.

However, The Conservation of Habitats and Species Regulations 2010 requires the Local Planning Authority (LPA) to consider 'Three Tests' when determining a planning application that may affect a European Protected Species. These 'tests' can be summarised as follows:

- Is there a genuine need and 'purpose' for the proposed development?
- Are there any satisfactory alternatives to delivering and meeting the need in the way proposed?
- Will there be any adverse effect on the conservation status of the species concerned?

If there is a risk of European Protected Species being impacted by the development the applicant must submit sufficient evidence to enable these tests to be satisfactorily addressed by the LPA.

Further guidance is provided in the Natural England publication '**European Protected Species and the Planning Process**'.

European Protected Species are those animals listed under Schedule 2 or plants listed under Schedule 5 of the Conservation of Habitats and Species Regulations 2010. The term European Protected has **not** been used for 'Nationally Protected Species' with no protection under the Regulations, but which are listed under Schedule II and/or V of the European Habitats Directive. For example the native crayfish.

Wild Birds

Reg 9A(8) of The Conservation of Habitats and Species Regulations 2010 states that "a competent authority in exercising any function in the UK must use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds". Applicants must demonstrate clearly how any such deterioration or pollution of wild bird habitat will be avoided by the proposed development.

Environmental Impact Assessment (EIA)

Where a formal Environmental Impact Assessment (EIA) is required under the **EIA Regulations** the Biodiversity Statement & Mitigation Plan should be incorporated in to the Ecology chapter of the Environmental Statement subject to any Scoping Opinion issued by the Planning Authority.

Biodiversity Offsetting

The Biodiversity Offsetting Metric provides a standardised and transparent approach to ensuring mitigation and compensation measures are sufficient to secure no-net-loss of biodiversity. The metric is a stand-alone tool – its use does **not** assume a need for off-site compensation. Indeed, it can be used to quantify the positive benefits of onsite mitigation or enhancement measures.

Natural England Discretionary Advice Service.

Natural England has a Discretionary Advice Service (DAS) which operates to provide advice for applications prior to submission. This service includes a limited amount of free Initial Advice, followed by Charged Advice for more complex requests. It is strongly recommended that you contact them to discuss the advice you require prior to submitting your application.

Further details are available on their **website**.

Please go to **Step 6**.

Return to contents

Step 6. Final Checklist and Declaration

This must be submitted along with every application to ECC, if the checklist is not completed correctly the application may not be valid.

	Applicant Only		*Office Only*	
Step	**Item**	**Tick if Included**	**Required**	**Included**
Step 1	Preliminary Ecological Appraisal*		✓	
	Biological Records Search *		✓	
Step 2	Table 2.1 Sites & Habitats checklist		✓	
	Table 2.2 Sites & Habitats evaluation		✓	
Step 3	Table 3.1 Species checklist		✓	
	Table 3.2 Species evaluation		✓	
Step 5	Biodiversity Statement & Mitigation Plan **			
	Correspondence from Natural England/Environment Agency/ Other Conservation Body			

**Should be incorporated in to the Biodiversity Statement & Mitigation Plan where one is required.*

***Must be incorporated in to the Ecology chapter of an ES if an EIA is required.*

Signed: I. Allen Date: 25/1/2017

Applicant/~~Agent~~ (please delete as appropriate)

Name: IAN ALLEN - ESSEX COUNTY COUNCIL (MAJOR PROJECTS SPONSOR)

Address: ESSEX COUNTY COUNCIL
MARKET ROAD, CHELMSFORD,
ESSEX CM1 1QH

Please note that in all circumstances legislation pertaining to protected species still applies and it is the responsibility of the developer to ensure that protected species and sites are not adversely affected as a result of development.

Thank you for completing this checklist. Please submit it, along with all supporting information, with your application.

Return to contents

Appendix 1 – Guidelines for Surveys

Links to Natural England's Standing Advice for Protected Species (Survey Requirements):

- What should detailed survey reports for protected species include?
- Great Crested Newt
- Badger
- Bats
- Barn Owl
- Birds
- Dormouse
- Invertebrates

  Due to the recognised value of invertebrate assemblages associated with brownfield sites in Essex, Natural England have produced specific local Standard Advice which is available here.
- Native crayfish
- Otter
- Reptiles
- Water Vole
- Plants

Other Guidance:

Natural England has produced Standing Advice for Ancient Woodland and Veteran Trees and this should be referred to in the preparation of the Biodiversity Statement where Ancient Woodland and/or Veteran Trees are likely to be affected.

The Chartered Institute of Ecology and Environmental Management 'Sources of Survey Methods' (SoSM) should be referred to for survey methodologies for Priority Species not covered by Natural England's Standing Advice.

Return to contents

Appendix 2 – Biodiversity features that must be shown on an Ordnance Survey base map at an appropriate scale

- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Ramsar Site
- Site of Special Scientific Interest (SSSI)
- National Nature Reserve (NNR)
- Ancient Woodland
- Local Wildlife Site (LoWS)
- Special Roadside Verge

Glossary

Ancient or veteran tree: A tree which, because of its great age, size or condition is of exceptional value for wildlife, in the landscape, or culturally.

Ancient woodland: An area that has been wooded continuously since at least 1600 AD.

Biodiversity Action Plan (BAP): Biodiversity Action Plans (BAPs) arose from the signing of the Convention on Biological Diversity in 1992, an international treaty signed by 150 nations including the UK, pledging to conserve biodiversity. BAPS are broken down into Species Action Plans (SAPs) and Habitat Action Plans (HAPs) and cover species and habitats considered threatened. These are known as 'Priority' species and habitats. Each Plan contains a definition of the habitat or species, describes the threats they face and the objectives and targets need to be met to conserve them. BAPS currently cover 1149 Priority species and 65 Priority habitats.

Ecological networks: These link sites of biodiversity importance.

Environmental Impact Assessment (EIA): A procedure to be followed for certain types of project to ensure that decisions are made in full knowledge of any likely significant effects on the environment.

European Protected Site: This includes candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and potential Special Protection Areas, and is defined in regulation 8 of the Conservation of Habitats and Species Regulations 2010.

International, national and locally designated sites of importance for biodiversity: All international sites (Special Areas of Conservation, Special Protection Areas, and Ramsar sites), national sites (Sites of Special Scientific Interest) and locally designated sites including Local Wildlife Sites.

Living Landscapes: Living Landscapes are large landscape-scale areas of the countryside, such as river valleys, estuaries, forested ridges, and grass and heath mosaics, which form ecological networks. The networks allow wildlife to move through them and increase their resilience to threats such as climate change, floods, drought, sea-level rise and development pressure. There are 80 Living Landscapes within Essex.

Local planning authority: The public authority whose duty it is to carry out specific planning functions for a particular area. All references to local planning authority apply to the district council, borough council and county council to the extent appropriate to their responsibilities.

Nature Improvement Area: Inter-connected network of wildlife habitats intended to re-establish thriving wildlife populations and help species respond to the challenges of climate change.

NPPF: National Planning Policy Framework. This document sets out the government's planning policies for England and how they are expected to be applied. It provides guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications.

Previously developed land: Land which is or was occupied by a permanent structure, including the curtilage of the developed land (although it should not be assumed that the whole of the curtilage should be developed) and any associated fixed surface infrastructure. This excludes: land that is or has been occupied by agricultural or forestry buildings; land that has been developed for minerals extraction or waste disposal by landfill purposes where provision for restoration has been made through development control procedures; land in built-up areas such as private residential gardens, parks, recreation grounds and allotments; and land that was previously-developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape in the process of time.

Priority habitats and species: Species and Habitats of Principal Importance included in the England Biodiversity List published by the Secretary of State under section 41 of the Natural Environment and Rural Communities Act 2006.

Qualifying species: Those plants or animals found on the legal list of qualifying species for which a Special Area of Conservation, Special Protection Area or Ramsar site has been selected and is managed.

Ramsar sites: Wetlands of international importance, designated under the 1971 Ramsar Convention.

Special Areas of Conservation: Areas given special protection under the European Union's Habitats Directive, which is transposed into UK law by the Habitats and Conservation of Species Regulations 2010.

Special Protection Areas: Areas which have been identified as being of international importance for the breeding, feeding, wintering or the migration of rare and vulnerable species of birds found within European Union countries. They are European designated sites, classified under the Birds Directive.

Site of Special Scientific Interest: Sites designated by Natural England under the Wildlife and Countryside Act 1981.

Stepping stones: Pockets of habitat that, while not necessarily connected, facilitate the movement of species across otherwise inhospitable landscapes.

Wildlife corridor: Areas of habitat connecting wildlife populations.

This information is issued by
Essex County Council, Place Services.
You can contact us in the following ways:

By email:
ecology.placeservices@essex.gov.uk

Visit our website:
http://www.placeservices.co.uk

By telephone:
03330 136840

By post:
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PO Box 11, County Hall, Chelmsford, Essex CM1 1QH

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Essex County Council

M11 Junction 7a

Essex County Council

Biodiversity Statement and Mitigation Plan

Document No. | B3553F05-3000-REP-0055

December 2016

M11 Junction 7a

Project No: B3553F05
Document Title: Biodiversity Statement and Mitigation Plan
Document No.: B3553F05-3000-REP-0055
Revision: 0
Date: December 2016
Client Name: Essex County Council
Project Manager: Paul Manamike
Author: Pippa Hamshaw, David Morris
File Name:

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Contents

1. Introduction ... 3
2. Protected Sites and Species ... 4
2.1 Protected Sites ... 4
2.2 Phase 1 Habitat Survey ... 4
2.3 Protect Species Survey ... 4
3. Biodiversity Features - Value and Likely Impacts/ Effects ... 5
3.1 Designated Sites and Habitats ... 5
3.2 Protected and Notable Species ... 5
3.2.1 Breeding birds ... 5
3.2.2 Bats ... 6
3.2.3 Otters ... 6
3.2.4 Great crested newts ... 7
3.2.5 Badgers ... 7
3.2.6 Reptiles ... 7
3.2.7 Toads ... 7
4. Biodiversity Offsetting ... 8
5. Mitigation Plan ... 9
5.1 Gilden Way Meadow LWS ... 9
5.2 Gilden Way Roundabout PWV ... 9
5.3 Breeding Birds ... 9
5.4 Bats ... 9
5.5 Otter ... 10
5.6 Great Crested Newt ... 10
5.7 Badger ... 11
5.8 Reptiles ... 11
5.9 Toads ... 11
6. Enhancements ... 12
7. References ... 13

Appendix A. Biodiversity Offsetting Assessment

1. Introduction

The purpose of this Biodiversity Statement and Mitigation Plan is to meet the requirement of Essex County Council (ECC) that planning applications fulfil their Biodiversity Checklist (ECC, 2015). In support of the planning application for the M11 J7A Scheme (hereafter the Proposed Scheme), this document summarises the baseline environmental setting, mitigation and enhancements associated with this application. More comprehensive information pertaining to the Scheme is set out in the Proposed Scheme's Environmental Statement (Jacobs, 2017).

In accordance with ECC policy, a biodiversity offsetting assessment has also been made and is included in Appendix A.

2. Protected Sites and Species

2.1 Protected Sites

The location of protected sites on or within 2km of the application site boundary can be found in the Environmental Statement (Jacobs, 2017, Section 8.4). There are no European protected sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites), National Nature Reserves (NNRs), Local Nature Reserves (LNRs) or Sites of Special Scientific Interest (SSSIs) located within 2km of the Proposed Scheme. There are six Local Wildlife Sites (LWSs) within 1km of the Proposed Scheme; of particular relevance are Gilden Way Meadow LWS and Gilden Way Roundabout Protected Wildlife Verge (PWV) also referred to within the Environmental Statement as the Churchgate Roundabout PWV.

2.2 Phase 1 Habitat Survey

The Proposed Scheme is split into two main areas: the Link Area and Gilden Way. The Phase 1 habitat survey of the Link Area was undertaken on 29th August 2013 and 12th March 2014. Habitats affected by the Gilden Way widening proposals were subject to survey on 28th September 2015. The methodology followed and survey results are presented in the Environmental Statement (Jacobs, 2017, Section 8.4).

2.3 Protect Species Survey

Surveys for birds, bats, dormice (*Muscardinus avellanarius*), riparian mammals, great crested newts (GCN) (*Triturus cristatus*), reptiles and badgers (*Meles meles*) were undertaken, in addition to a botanical survey of the Gilden Way Roundabout PWV. The methodology followed and survey results are presented in the Environmental Statement (Jacobs, 2017, Section 8.4).

3. Biodiversity Features - Value and Likely Impacts/ Effects

3.1 Designated Sites and Habitats

There are six LWSs within 1km of the Proposed Scheme; of particular relevance are Gilden Way Meadow LWS and Gilden Way Roundabout PWV. The other four LWSs are not considered further due to a lack of pathways for impacts or sensitive features.

Gilden Way Meadow LWS contains a pond that supports a medium sized population of GCN and breeding grass snakes (*Natrix natrix*), and contains habitats with potential to support other protected species. The site is considered to be of local importance.

In an otherwise unremarkable grassland/ scrub mosaic, Gilden Way Roundabout PWV holds betony (*Stachys offinialis*), a locally rare plant. Betony is listed on the Essex Red Data List (Essex Field Club, 2014), and is described as having undergone a 'drastic decline, [and] likely to be on the verge of extinction within the next few decades'. The Adopted Replacement Harlow Local Plan (July 2006), Policy NE19 protects the site unless outweighed by the need for development. The site is considered to be of local importance.

The hedgerows within the Link Area and Gilden Way are considered likely to fall within the Essex Biodiversity Action Plan (BAP) habitat description for hedgerows. These are considered to be of local importance

3.2 Protected and Notable Species

3.2.1 Breeding birds

A number of bird species listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and the Birds of Conservation Concern (BOCC) Red and Amber lists (Eaton *et al,* 2015) have been recorded. In the absence of mitigation, nesting birds and active nests could be directly impacted and areas of bird nesting habitat would be lost. The baseline surveys established that the bird populations within the Proposed Scheme are of local importance.

The negative effects of the traffic-generated noise associated with the link roads, could lead to a reduction in the number and diversity of birds in areas within the Link Area. However, the interior of the large arable field through which the link roads would pass, does not support important assemblages of nesting birds, due to the absence of diverse nesting habitat such as scrub and trees. Therefore the effect of increased noise within the Link Area would likely be limited to individual ground-nesting birds recorded breeding in this area, such as skylark (*Alauda arvensis*).

The reduction in the openness of the arable field within the Link Area due to the construction of the link roads may reduce its suitability for farmland specialists such as skylark, as these species prefer to nest in large open fields with low boundaries. In addition, the reduced field size may influence the future management of the field, for example making cereal crop production a less viable economic option for the farmer. However, given the abundance of large, open, undisturbed (by road noise) arable fields dominating the wider landscape (particularly to the north, east and south of the Link Area), this impact would be unlikely to have an effect beyond the site level, and unlikely to affect the conservation status of the local skylark population.

Gilden Way is largely bordered by residential gardens which are currently shielded, albeit partially, from traffic-generated noise by tall boundary fences constructed from timber fencing panels or close boards. Following the widening works, these boundaries would be reinstated using acoustic fencing which would shield the gardens and residences from the increased levels of traffic-generated noise. No changes to the conservation status of any bird species recorded within the Scheme would be anticipated as a result of increased levels of traffic generated noise along Gilden Way.

With regard to night-time lighting, Gilden Way is currently lit by luminaires with Low-Pressure Sodium lights and therefore the bird population in this area is likely to have become accustomed to this disturbance effect. The lighting proposals involve the replacement of the existing columns and luminaires with new columns and less

disturbing LED luminaires at the same locations. Therefore night-time lighting would be unlikely to have a significant effect on birds along Gilden Way. .

Individuals of species that are active at night, such as little owl (*Athene noctua*) and tawny owl (*Strix aluco*) were recorded within the Link Area, where there is currently no artificial night-time lighting. The introduction of lighting along the link roads and along the eastern part of Gilden Way would potentially reduce the suitability of these areas for foraging for these species. However, the habitat affected (the interior of a large arable field and amenity grass verges) is generally sub-optimal for foraging by these species (and species such as little owl are crepuscular and so are accustomed to low-level lighting). Given the abundance of dark rural habitat to the north, east and south of the Link Area, there is unlikely to be an effect on the conservation status of nocturnal species of birds.

Without mitigation, the Proposed Scheme is considered likely to have a slight negative effect upon breeding birds, including local skylark, although it would be unlikely to impact upon the conservation status of skylark.

3.2.2 Bats

Occasional, non-breeding, summer roosts used by low numbers of common bat species have been recorded in trees/ buildings near to, and within, the Proposed Scheme boundary. The Scheme would lead to the loss of four bat roost trees, in addition to a number of other trees that have potential to support bat roosts. The bats within these roosts are likely to be associated with natal roosts beyond the Proposed Scheme boundary and therefore impacts at the site-level may affect roosts at the local level. Consequently, the bats and roosts within the Proposed Scheme are considered to be of local importance.

Some bat species are susceptible to collision with traffic, and are sensitive to habitat loss beyond the roost site, and to disturbance such as lighting and noise. Activity surveys within the Link Area recorded greatest bat activity along the tree-lined Sheering Road, the edges of The Mores Wood, and the ponds to the south of The Mores Wood. Bat vantage point/ crossing surveys undertaken along Gilden Way indicate that the majority of crossing activity takes place above the street lights and above the traffic swept zone, reducing the likelihood of a collision. As the majority of bats do not cross the Gilden Way within the traffic swept zone, the increase in traffic numbers along the Gilden Way is considered unlikely to have a significant effect on the conservation status of the local bat population. No increase in disturbance associated with night-time light levels along the Gilden Way would be predicted to occur, and therefore there are unlikely to be any associated impacts upon bats as a result.

Some habitats to be impacted by the Proposed Scheme support foraging and commuting by a number of bat species including the rare species barbastelle (*Barbastellus barbastellus*) and Nathusius' pipistrelle (*Pipistrellus nathusii*), which commute long distances. The foraging and commuting habitat within the site could therefore be of importance to bats beyond the local population level.

3.2.3 Otters

Evidence of otter (*Lutra lutra*) has been recorded along the Pincey Brook. No holts or couches have been recorded, but not all riparian areas were accessible to survey. Otters are susceptible to collision with traffic and sensitive to changes in water quality and disturbance such as noise generated by elevated levels of traffic, increased lighting and pedestrians. Otters have large ranges and are generally present at low densities and therefore any otter using habitat within the Proposed Scheme could be vital to the breeding success of other otters within the local area. Otters are considered to be of local importance therefore, these impacts could lead to a slight negative effect.

There is expected to be a slight negative-neutral impact upon water quality in the Pincey Brook and Harlowbury Brook throughout the operational phase of the Scheme. The Essex Otter Survey 2007 (Tansley, 2008), indicates that otter were present on the River Stort near Harlow in that year, although this was the only one of nine sites on the Stort where evidence of otters was found. The 2011-2013 survey results indicate a similar pattern of distribution. The results, in the context of a rapidly expanding population at the county level, indicate presence at low densities. This suggests that the habitat provided by the River Stort is sub-optimal, or that there is some other factor at play making this area unfavourable for otter. Therefore a slight negative–neutral impact

on water quality is considered unlikely to affect the local conservation status of otter given that otter are present at only low densities and that there is an abundance of alternative aquatic habitat in the local area.

The sensitive lighting design, whilst maintaining a dark corridor along key routes (i.e. along the Pincey Brook and along the unnamed watercourse and culvert entrances), cannot avoid increasing night-time light levels in the general area. As a consequence, there would be a temporary impact upon the local otter population arising from night-time light disturbance in the short term i.e. at the beginning of the operation phase. However, it is anticipated that any otters visiting the Pincey Brook, would eventually become accustomed to discrete areas that are subject to slight illumination at night. The impact would reduce in the mid-long term to a neutral impact.

3.2.4 Great crested newts

No GCN have been detected within a 500m buffer around the Link Area, but a medium population of GCN have been recorded adjacent to Gilden Way.

Proposals do not directly affect aquatic habitat but the location of the Phase 1 site compound within 100m of a breeding pond could affect habitats that could be used by GCN in their terrestrial phase and lead to direct impacts upon GCN if present. GCN within the Scheme are of local importance.

3.2.5 Badgers

An active main sett has been recorded within The Mores Woodland, and another within Moorhall Wood LWS. There are outlier/ subsidiary setts within the Study Area, along with widespread evidence of badgers using habitats for foraging and commuting across the Link Area.

Badgers are susceptible to collision with traffic. No active badger setts have been recorded within 50m of Gilden Way.

There are many records of badgers from the local area, and badgers are generally common and widespread, therefore the population within the Study Area is unlikely to be key to sustaining the local badger population and thus is valued as being of site importance.

3.2.6 Reptiles

Very low numbers of common lizard and grass snake have been recorded in both the Link Area and habitats adjacent to Gilden Way. These species are widespread and abundant; therefore the small numbers recorded within the site are unlikely to contribute significantly to the local population. They are therefore considered to be important at the Site level only.

3.2.7 Toads

Low numbers of toads have been recorded whilst undertaking the GCN surveys around the Link Area.

The proposals do not directly affect aquatic habitat however they would impact upon terrestrial habitats that could be used by toads and therefore lead to direct impacts to these animals, if present. Toads are widespread and abundant; therefore the small numbers recorded within the site are unlikely to contribute significantly to the local population. They are therefore considered to be important at the Site level only.

4. Biodiversity Offsetting

A biodiversity offsetting assessment for the Proposed Scheme has been undertaken and is included as a separate report in Appendix A.

5. Mitigation Plan

This section summarises the Proposed Scheme's mitigation strategy. Full details can be found in the Environmental Statement (Jacobs, 2017, Section 8.6 and 8.7).

5.1 Gilden Way Meadow LWS

As the main reason for designation of this site is the population of GCN within the pond, the impact assessment is presented within Section 4.6.

5.2 Gilden Way Roundabout PWV

The south-facing embankments of the new link roads would be seeded/ planted using the material collected from Gilden Way Roundabout PWV and specialist seed-mixes to create approximately 3.5ha of species-rich grassland. As a result of the timing lag between the loss of the PWV and establishment of the new species-rich grassland, there would likely be a short term reduction in the area of semi-improved grassland and flowering betony. However, in the mid-long term, there would be a net gain for biodiversity as a larger area of more diverse grassland habitat would be established and the local population and distribution of betony would have increased.

The Gilden Way Roundabout PWV assessed as having Local value, would be permanently lost and therefore there would be a slight negative impact. However, on balance, the Proposed Scheme would deliver an increase in the area of species-rich grassland, the benefits of which would be considered to outweigh the loss of the small area of semi-improved grassland habitat within the PWV.

5.3 Breeding Birds

Timings to avoid vegetation removal within the bird nesting season have been included in the Construction Programme.

It is anticipated that the hop-over created for bats would assist nocturnal birds in crossing the new link road safely. The column heights of street lights located near the hop-over would be reduced, with luminaires shielded such that light does not shine above the horizontal. This would ensure that (once established) tree canopies at these crossing points would be dark (>6mAGL) and could be used by light-shy nocturnal birds to cross the road above the traffic swept zone. In addition, LED lamps have been selected to satisfy the technical specifications relating to spectral composition recommended by BCT (2014) to reduce disturbing effects upon wildlife.

It is anticipated that the construction of noise fencing to prevent excessive noise pollution in residential gardens bordering the Gilden Way would ameliorate the negative effects of noise on nesting birds in those areas.

The upgrading of street lighting along the Gilden Way from Low-Pressure Sodium lamps to less disturbing LED lamps would also reduce the disturbing effects of lighting upon wildlife along this part of the Proposed Scheme.

It is not considered possible to mitigate for the residual effects on the local bird population as these are inherent in the Proposed Scheme and cannot be designed out.

It is recommended that the arable fields to the north and south of the Link Area are managed to increase their carrying capacity of skylark. This could be achieved by providing skylark nest plots within areas of crops for this species.

5.4 Bats

A European Protected Species (EPS) mitigation licence to cover removal of tree roosts and to provide suitable mitigation/ compensation would be applied for from Natural England. Timings to avoid disturbance of bats (whilst removing trees under licence) have been included in the Construction Programme.

Compensation for the loss of roost sites through bat box erection in retained trees.

Measures would be put in place to avoid disturbance impacts during the construction phase. Examples include the use of solid hoarding around the construction compound for Phase 1, to prevent noise disturbance and light spill onto surrounding mature trees and retained/ compensatory tree roosts along Gilden Way. Another example is the temporary provision of similar fencing along the Pincey Brook near to Sheering Road Bridge during Phase 2A Section A to prevent illumination of the Brook which is used by commuting bats.

Dust suppression and air quality monitoring would be completed to prevent disturbance to trees confirmed as bat roosts through air pollution.

Incorporation of large multi-species underpasses to be installed under each link road (two in total), designed in combination with a hop-over (comprising fencing, tree planting and controlled lighting), in order to provide a safe dark route for bats (and other mammals) to cross below or above (bats only) the link roads.

Landscaping proposals (visual screening mounds and tree planting) would ensure that the old Sheering Road continues to be a dark, well-vegetated linear feature and can continue to function as a key flight line for bats. Landscaping proposals would also provide generous compensation for lost habitats, and would increase habitat diversity within the Link Area. Landscaping proposals would be predicted to result in an increase in invertebrate prey diversity and abundance for bats.

It is not considered possible to mitigate for the residual effects on the local bat population as these are inherent in the Proposed Scheme and cannot be designed out.

The assessment has predicted an impact on commuting bats arising from an increase in night-time light levels along the proposed link roads. If planning permission is granted, it is recommended that bat activity be monitored to measure whether activity would be reduced. In order to do this, monitoring surveys would need to replicate the static detector surveys undertaken to compile the baseline within the Link Area.

5.5 Otter

Embedded mitigation measures would be put in place to reduce/ remove the risk of pollution of the water environment:

- a Code of Construction Practice (CoCP) would be implemented;
- all necessary consents and licences would be in place prior to the commencement of any works; and
- there would be adoption of good working practices and adherence to the Environment Agency's Pollution Prevention Guidance (PPG) and Construction Industry Research and Information Association (CIRIA) Reports.

During construction of Phase 2A Section A, temporary acoustic fencing would be erected to reduce noise and light disturbance along the Pincey Brook. There would be no street lighting on Sheering Road bridge to ensure the banks and channel of Pincey Brook are not illuminated.

The multi-species underpasses would allow otters to pass beneath the proposed link roads. Landscape planting and fencing installed around the entrance to the culverts would funnel otters into the culvert and prevent them from crossing the embankment and the two new lanes.

There would be pre-construction checks for otter along the Pincey Brook, and an application for an EPS licence for otter if a holt were recorded within the zone of influence of the works.

5.6 Great Crested Newt

Embedded mitigation measures would be put in place to reduce/ remove the risk of pollution of the water environment:

- a CoCP would be implemented;
- all necessary consents and licences would be in place prior to the commencement of any works; and

- there would be adoption of good working practices and adherence to the Environment Agency's PPG and CIRIA Reports.

Timings to avoid ground disturbance during the hibernation period and for a two-staged approach to vegetation clearance have been included in the Construction Programme. Measures to reduce the impact of the Phase 1 compound would be put in place such as suitable exclusion fencing around the site and along part of the southern side of the Gilden Way.

An EPS licence would be applied for from Natural England to cover works to set up the Phase 1 construction compound and to provide suitable mitigation/ compensation..

5.7 Badger

Pre-construction checks for badger within a 50m buffer of the construction footprint (and an application for a sett-closure licence if required)

5.8 Reptiles

Habitat manipulation would be undertaken to displace reptiles from the Proposed Scheme boundary.

5.9 Toads

Embedded mitigation measures would be put in place to reduce/ remove the risk of pollution of the water environment:

- a CoCP would be implemented;
- all necessary consents and licences would be in place prior to the commencement of any works; and
- there would be adoption of good working practices and adherence to the Environment Agency's PPG and CIRIA Reports.

Habitat manipulation would be undertaken to displace toads from the Proposed Scheme boundary.

6. Enhancements

Ecological enhancements for the Scheme would be in the form of creation of new habitat, including Essex priority habitats. The construction and planting of attenuation ponds would provide a net increase in pond habitat across the Proposed Scheme. The creation of species-rich grassland would also add significant ecological value to the area, with approximately 8ha of this priority habitat to be created. Landscape planting would also create approximately 4.5km of species-rich hedgerows.

Further details of areas of habitats lost/gained as a result are described in the biodiversity offsetting report (Appendix A). There the losses/gain are quantified in terms of biodiversity units (DEFRA, 2011). The assessment demonstrates significant biodiversity gains resulting from the Scheme.

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Appendix A. Biodiversity Offsetting Assessment

M11 Junction 7a

Essex County Council

Biodiversity Offsetting Report

| 0

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M11 Junction 7a

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Contents

1. Summary **1**
2. Methods **2**
2.1 The Biodiversity Metric 2
2.1.1 Habitat assessment 2
2.1.2 Distinctiveness and condition 2
2.1.3 Other Multipliers 3
2.2 Sources 3
2.3 Limitations 3
3. Results **4**
4. Discussion **7**
5. References **8**

Appendix A. Figures

1. Summary

This report presents the results of a biodiversity offsetting assessment for the proposed M11 J7a Scheme. The assessment considers existing habitat within the Proposed Scheme footprint and proposed landscaping, including habitat creation, to be established upon completion of the Scheme. The biodiversity units of each of these sets of habitats are computed: the number of units following completion of the Proposed Scheme is greater than for existing habitats. The proposed landscaping plans therefore represent a 'gain' for biodiversity.

2. Methods

2.1 The Biodiversity Metric

2.1.1 Habitat assessment

Following the method set out in DEFRA (2012) to calculate the biodiversity metric for a unit of habitat, the area of the Proposed Scheme footprint in hectares was multiplied with multipliers for the 'distinctiveness' and 'condition' of each respective habitat, as described below. The resulting score gives the number of 'biodiversity units' the habitat is worth.

Hedgerows were assessed separately from non-linear habitats following DEFRA (2012). The biodiversity units of a hedgerow are calculated by multiplying its length in metres by its condition. A distinctiveness multiplier is not applied.

The habitats within the Proposed Scheme, both those existing pre-construction and planned for post-construction, were assigned to categories within the Integrated Habitat System (IHS). The information used was gathered from ecological surveys undertaken to inform the Proposed Scheme's Environmental Impact Assessment (EIA), and from the Proposed Scheme's landscape plans for post-construction habitats (see Section 2.2 for a list of sources used). The classification of habitats employed in previous ecological surveys followed the standard Phase1 habitat classification (JNCC, 2010) so that habitats were easily placed within the IHS. The area covered by a particular unit of habitat or length of hedgerow was calculated using GIS data associated with the above information.

Following this assessment, the scores for each habitat unit were summed, with hedgerows and non-linear habitats given separate totals, giving the total biodiversity units. Pre-construction and planned post-construction units were then compared.

2.1.2 Distinctiveness and condition

The simplest two multipliers contributing to the total biodiversity score for a habitat assesses the 'distinctiveness' and 'quality/condition' of the habitat.

Distinctiveness corresponds to the nature conservation value of the habitat under consideration. The scoring system is shown in Table 1. Distinctiveness scores have been assigned to habitats in the IHS (DEFRA, 2013), and each habitat, before and after construction, was therefore assigned a distinctiveness score following this system.

Table 1. Habitat distinctiveness scores and associated habitat types (DEFRA, 2012)

Habitat distinctiveness	Score	Broad habitat type covered
High	6	Priority habitat, as defined in Section 41 of the NERC Act 2006.
Medium	4	Semi-natural.
Low	2	E.g. intensive agricultural, but may form an important part of the ecological network in the area.

Condition of habitat is similarly based on a three-tier scale (Table 2). The assessment of condition of habitat is a matter of professional judgement. Existing survey data were used to judge the condition of pre-construction habitats. The condition of habitat to be created was scored from a realistic estimate of what can be attained with time and suitable habitat management (see Section 2.3 for limitations).

Table 2. Habitat condition scores (DEFRA, 2012)

Habitat condition	Score
Good	3
Moderate	2
Poor	1

2.1.3 Other Multipliers

Distinctiveness and condition scores are the simplest multipliers contributing toward the calculation of the biodiversity metric.

2.2 Sources

The following documents were used as source material for habitat data:

- Phase 1 habitat survey report (Jacobs, 2017); and
- Landscape plans (Jacobs, 2017).

The relevant maps from these are included as figures in Appendix A.

2.3 Limitations

It is assumed that habitat lost to construction works would be precisely as shown in the drawings used in this assessment and that habitat creation and landscaping would exactly follow the landscape plans. There is also an inevitable error in the measurements of habitat area, for example due to uncertainties in digitising habitat polygons based on field observations.

While areas have been measured as accurately as possible, the assessment of habitat 'condition' is ultimately subjective. There is no guidance as part of the Biodiversity Offsetting Pilot on how to assess condition of habitats or what precisely constitutes 'good', 'medium' and 'poor' quality of each habitat type, and so this aspect is based on professional judgement.

Yet-to-be created habitat poses a further element of subjectivity as condition is purely aspirational. With only landscape plans available the direction of habitat development is uncertain, and it is not clear that any particular created habitat can develop into one of 'good' condition comparable to that of semi-natural habitat.

3. Results

Table 3 summarises the non-linear habitats present within the Proposed Scheme and their biodiversity units. Table 4 summarises the results for hedgerows.

Habitats have been assigned to the relevant IHS habitat type, and 'distinctiveness' scores for each habitat type were taken from DEFRA (2013). The evaluation of habitat condition was based on professional judgement of field survey results, assessing e.g. the structural diversity of habitat within each habitat.

Table 3. Biodiversity offsetting calculation for non-linear habitats present within the Proposed Scheme

		Multiplier			
IHS Code	**Habitat**	**Distinctiveness**	**Condition**	**Area (ha)**	**Biodiversity units**
G10	Amenity grassland	2	1	2.98	5.96
OVZ	Tall ruderal	2	2	0.03	0.12
			1	0.08	0.17
WB3Z	Semi-natural broadleaved woodland	6	3	0.46	8.28
WB3Z	Deciduous plantation woodland	6	2	4.11	49.33
WCZ	Coniferous plantation woodland	2	1	0.28	0.56
WB2	Scrub	4	3	0.23	2.79
CRZ	Arable	2	1	19.95	39.89
				Total units	107.11

Table 4. Biodiversity offsetting calculation for lengths of hedgerows within the Proposed Scheme

Condition	Length (m)	Biodiversity units
3	232	696
2	420	840
1	1,234	1234
	Total units	2,770

Table 5 and 6 summarise, respectively, the biodiversity units for non-linear habitats and hedgerows to be retained and created within the Proposed Scheme following construction.

Table 5. Biodiversity Offsetting calculation for non-linear habitats to be retained or created within the Proposed Scheme following construction

		Multiplier			
IHS Code	**Habitat**	**Distinctiveness**	**Condition**	**Area (ha)**	**Biodiversity units**
G10	Amenity grassland	2	1	7.75	15.51
GN1Z	Semi-improved neutral grassland	6	2	8.17	98.06
WB3Z	Semi-natural broadleaved woodland	6	2	4.92	59.08
WB3Z	Deciduous plantation woodland	6	2	0.91	10.95
WCZ	Coniferous plantation woodland	2	1	0.28	0.56
WB2	Scrub	4	3	1.45	17.43
AP11	Pond	6	1	0.84	5.08
				Total units	206.66

Table 6. Biodiversity Offsetting calculation for lengths of hedgerows to be retained or created within the Proposed Scheme following construction

Condition	**Length (m)**	**Biodiversity units**
3	4,643	13,929
2	420	840
1	788	788
	Total units	15,557

Table 7 shows the net biodiversity units for non-linear habitats associated with the Proposed Scheme, i.e. the number of units for habitats to be retained or created for post-construction minus those for existing, pre-construction habitats. Table 8 shows the analogous figures for hedgerows.

Table 7. Summary of net biodiversity units for non-linear habitats associated with the Proposed Scheme

	Total units
Pre-construction habitats	107.11
Post-construction habitats to be retained or created	206.66
Net units	+ 99.55

Table 8. Summary of net biodiversity units for hedgerows associated with the Proposed Scheme

	Total units
Pre-construction hedgerows	2,770
Post-construction hedgerows to be retained or created	15,557
Net units	+12,787

4. Discussion

The results of this biodiversity offsetting assessment have shown that the proposed post-construction landscape plans for the Scheme has greater biodiversity units than the existing habitats present within the Proposed Scheme footprint. The net increase would be 99.55 units for non-linear habitats and 12,787 units for hedgerows. In the sense of the DEFRA Biodiversity Offsetting process, this represents a ‘net gain’ for biodiversity.

5. References

DEFRA. (2011). *Biodiversity offsetting: Guiding Principle for Biodiversity Offsetting.*

DEFRA. (2012). *Technical Paper: the metric for the biodiversity offsetting pilot in England.*

DEFRA. (2013). *Appendix 1 - Distinctiveness Bands for the Biodiversity Offsetting Pilot.*

Jacobs (2017). *M11 Junction 7a. Environmental Statement. January 2017*

JNCC. (2010). *Handbook for Phase 1 Habitat.*

Appendix A. Figures

Woodland 4

Woodland 3

Woodland 2 North of Mayfield Farm

Woodland South of Mayfield Farm

Woodland South of Pincey Brook

Sheering Lower Road

Pincey Brook

The Moores Woodland

Area 1

M11

Moor Hall Woodland

Moor Hall Road

0 60 120 240 360 480 Meters

Legend

- Study area boundary
- Target notes
- Line of trees
- Hedgerow with trees
- Intact hedgerow
- Wet ditch
- Fence
- Scrub
- Campions residential area
- A Amenity grassland
- SI Semi-improved grassland
- Lake
- Pond
- Running water
- Tall ruderal vegetation
- Broadleaved woodland
- Plantation broadleaved woodland
- Arable
- Building
- Road
- No access
- Hard standing
- Bog (Area 1)

N

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd
0	Nov 14	For Information	LHS	AJ	NC	PM

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Client: Essex Highways

Project: **M11 Junction 7A**

Drawing title: **Phase 1 Habitat Survey**

Drawing status: FINAL

Scale: 1:7000 @ A3 — DO NOT SCALE

Jacobs No.: B3553F05

Client no.:

Drawing number: B3553F05/Ecology/Phase1/01/01 — Rev 0

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0 10 20 30 40 50 60 70 80 90 100 m

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Notes:

1. All dimensions in metres unless stated otherwise.

Key

- Existing woodland trees & hedges to be retained
- Existing woodland canopy, trees and hedges to be removed
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- TPO protected woodland to be removed.
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- Proposed path realignment or extension
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- Proposed road on embankment
- Proposed footway
- Proposed highway drainage pond
- Proposed stream realignment
- Existing streams and ponds
- Proposed woodland screen planting
- Proposed native shrubs
- Proposed amenity planting, decorative shrubs & small trees
- Proposed individual trees to be planted at large size
- Proposed willows to channel bats along stream to culverts
- Proposed hedgerows
- Proposed grassland
- Proposed area of spring bulbs in grass
- Proposed species-rich grass & wildflowers
- Proposed area with scattered clumps of native scrub
- Proposed mounds and landscape earthworks
- Proposed climbing plants to grow on structures
- Brick facing to proposed retaining structure

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- P4R — Post and 4 rail timber
- P4RM — Post and 4 rail with mesh infill
- HSF2.0 — High security 2m
- CB2.0m — Closeboard 2m
- E — E — Retention of existing
- EHL — Retain existing hedge
- Potential property for off-site planting

Location Diagram

Rev.	Date	Description of revision	Drawn	Checked	Review'd	Approv'd
-	-	-	-	-	-	-
-	-	-	-	-	-	-
P0	SEPT 16	ISSUED FOR PLANNING APPLICATION	AC	AS	HM	PM

DRAWING STATUS

PRELIMINARY DESIGN

RINGWAY JACOBS integrated expertise

Essex County Council

Mark Rowe, Service Director, Highways
Seax House, Victoria Road South, Chelmsford, CM1 1QH.
Tel: 0345 6037631

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M11 JUNCTION 7A
ENVIRONMENTAL STATEMENT

DRAWING TITLE

LANDSCAPE MITIGATION
FIGURE 7.3
Sheet 1 of 7

DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
AS	AC	AS	HM	PM
DATE SEPT 16	DATE SEPT 16	DATE SEPT 16	DATE SEPT 16	DATE SEPT 16

DRAWING UNITS U.N.O.: DIMENSIONS AND LEVELS IN METRES

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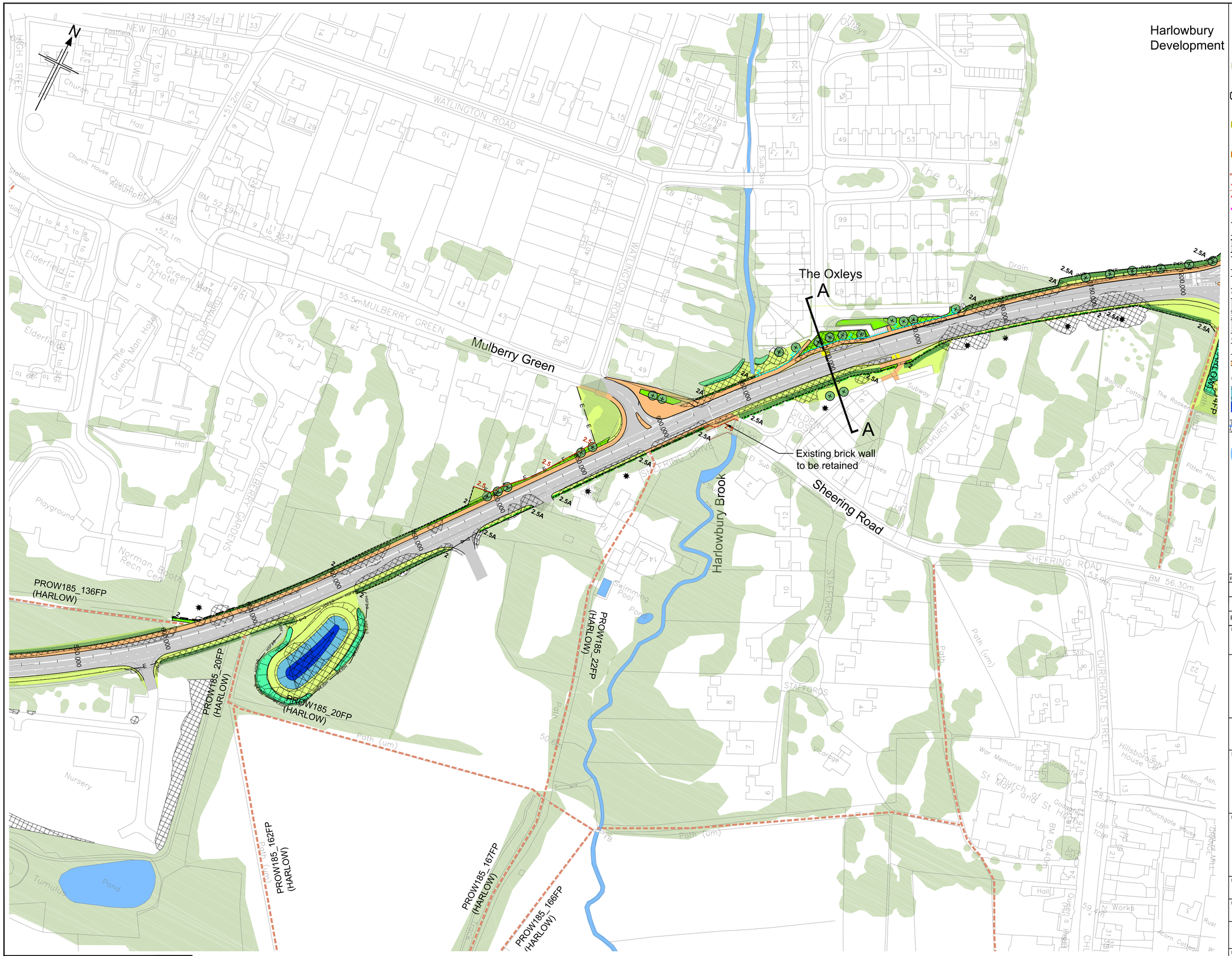

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LANDSCAPE MITIGATION
FIGURE 7.3
Sheet 2 of 7

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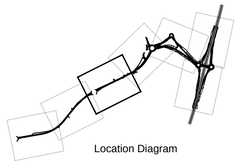

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LANDSCAPE MITIGATION
FIGURE 7.3
Sheet 3 of 7

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