

OAKCROFT LANE, STUBBINGTON, HAMPSHIRE

ECOLOGICAL MANAGEMENT PLAN

Final Document (Rev. 1) September 2020

Preliminary Ecological Appraisals • Protected Species Surveys and Licensing • NVC • EcIA • HRA • Management Plans

Habitats • Badger • Bats • Hazel Dormouse • Birds • Reptiles • Amphibians • Invertebrates • Riparian and Aquatic Species

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1.0 INTRODUCTION

1.1 Background

Ecological Survey and Assessment Limited (ECOSA) have been appointed by Persimmon Homes Limited to prepare an Ecological Management Plan for land at Oakcroft Lane, Stubbington, Hampshire PO14 2EB (hereafter referred to as the site).

ECOSA has previously undertaken a range of ecological survey work at the site with an extended Phase 1 ecological assessment originally undertaken in February 2014 (ECOSA, 2015) and subsequent protected species surveys including bat activity, reptile surveys and great crested newt surveys undertaken in 2015 (ECOSA, 2015) and a suite of wintering bird surveys undertaken between 2014 and 2016 (ECOSA, 2015) (ECOSA, 2015) (ECOSA, 2016). It should be noted that the red line boundary of the site has been significantly reduced since the previous survey work and that a large proportion of the site surveyed in the previous reports lies outside of the current redline boundary.

A planning application for the development of the site for 261 residential dwellings was submitting to Fareham Borough Council on 14th March 2019. The planning application was subsequently refused on 22nd August 2019 including a number of reasons in relation to ecology.

The proposals for the site have subsequently been revised and a new planning application for 209 residential units was submitted in June 2020. Following comments received from Hampshire County Council Ecology Team and Natural England and subsequent discussions with the consultees this document has been updated accordingly and to reflect the updated landscaping scheme at the site.

This Ecological Management Plan will be submitted in support of the new planning application in combination with a Biodiversity Impact Calculator (ECOSA, 2020), Shadow Habitats Regulations Assessment (ECOSA, 2020) and an updated Ecological Impact Assessment (ECOSA, 2020).

1.2 The Site

The site is located in Stubbington, Hampshire, centred on National Grid Reference (NGR) SU 5536 0454 (**Map 1**).

The site covers approximately 17.8 hectares and comprises two agricultural fields with boundary vegetation and a small copse to the south-west of the site. The site is bounded to the south and east by existing residential development, to the north-east by Peak Lane, and to the north by agricultural fields, including the area of land proposed for the construction of the consented Stubbington Bypass. Crofton Ditch with associated vegetation and Crofton Cemetery bounds the west of the site whilst a ditch is also present in the south of the site. The northern and southern parcels of land are bisected by Oakcroft Lane.

The wider landscape comprises Stubbington to the south and Fareham to the north and east. To the west lies a cemetery with open countryside comprising agricultural fields with associated boundary vegetation, occasional areas of woodland and the River Meon. The Solent lies towards the south and west separated from the site by open countryside and existing residential development.

1.3 Aims and Scope of Report

The aim of this document is to outline the ecological management required at the site. The management plan sets out the ecology management prescriptions for the site in order to retain and enhance the long-term ecological value. This plan covers a period of 10 years following the commencement of the development.

1.4 Site Proposals

The proposals entail erection of 209 dwellings with new access from Peak Lane and stopping up of part of Oakcroft Lane together with car parking, landscaping, Public Open Space and associated works. The land to the north of Oakcroft Lane is to be removed from agricultural use as a result of the development and delivered as an Ecological Enhancement Area.

This management plan is based on the Site Layout produced by Persimmon Homes Limited, dated March 2019 (Drawing No. A-02-015-SL Revision F) (**Appendix 1**), associated landscaping proposals produced by ACD Environmental for the residential parcel of the development, and the proposed landscaping works to the Ecological Enhancement Area drawing number PERSC22805 20 Revision A (**Appendix 2**).

Planning permission is being sought during 2020 with construction proposed to commence in late 2020/early 2021.

2.0 MANAGEMENT PLAN OBJECTIVES

2.1 Introduction

This section provides an overview of the objectives of the Ecological Management Plan for the site. Specific objectives for each individual habitat type are detailed within the management prescriptions.

2.2 Overview of Management Plan Objectives

The overarching objective of the Ecological Management Plan is to retain and enhance the long-term ecological value of the site. These will be achieved through the following measures:

- Create and maintain new habitat suitable to support overwintering wading birds in the Ecological Enhancement Area;
- Creation of new, native species-rich and wildlife friendly habitats to enhance biodiversity at the site as a whole; and
- Establishment of long-term management prescriptions for new and retained habitats to ensure the habitat diversity and suitability for wildlife is maintained.

2.3 Structure of the Management Plan

The general overarching management prescriptions for the site are provided within Section 3.0.

For the purposes of this management plan it is split into two sections with the management prescriptions for the Ecological Enhancement Area detailed in Section 5.0. This area is due to be transferred to a third party following the commencement of the development. At this stage this is anticipated to be Fareham Borough Council which will be secured as part of a Section 106 agreement.

The remainder of the management prescriptions for the development site itself are continued within Section 6.0. The management prescriptions in this section wholly relate to habitat situated within Public Open Space for the purposes of ecological enhancement and management. The prescriptions do not cover habitat such as amenity grassland and new ornamental shrub which are anticipated to be subject to a separate management regime.

The boundaries of the two areas referred to in this management plan are provided on **Map 2**.

This management plan does not cover species-specific mitigation measures to be implemented as part of the construction phase of the scheme with the construction phase mitigation measures set out within the Ecological Impact Assessment submitted as part of the planning application.

3.0 GENERAL MANAGEMENT PRESCRIPTIONS

3.1 Introduction

This section provides an overview of the general management prescriptions for the site.

3.2 Review

As part of on-going monitoring and review process, the management plan will be periodically reviewed in order to ensure that the objectives are being met. Details of this review process are provided within Section 7.0.

3.3 Responsibilities

The responsibility for the implementation of the management plan for the Ecological Enhancement Area will initially be Persimmon Homes for the first 12 to 18 months of habitat creation. Following this the Ecological Enhancement Area will be transferred into the ownership of a third party (Fareham Borough Council). This third party, or their successors in title, and any appointed contractors or lessees of the land, will be responsible for implementing the management plan in relation to this area (Section 5.0). The management plan has not been fully costed within this document and a contribution to the management of this land with be secured as part of the Section 106 agreement.

The remainder of the residential development outside of new residential plots will be retained by Persimmon Homes. Persimmon Homes will be responsible for the implementation of the management plan in relation to this area and any appointed management agents (Section 6.0).

3.4 Contractors

The proposed habitat creation and management works will be undertaken by specialist contractors with suitable experience in the management measures proposed. Monitoring and review will be undertaken in conjunction with suitably qualified ecologists with other specialists, such as arboricultural consultants employed/consulted as necessary.

4.0 SUMMARY OF ECOLOGICAL BASELINE

4.1 Introduction

This section summarises the ecological baseline of the site in the context of the management proposed at the site. The full baseline of the site is provided by the Ecological Impact Assessment submitted as part of the planning application. The features to be incorporated into the management plan includes:

4.2 Habitats

The habitats of relatively greater ecological interest in the context of the predevelopment site are the woodland, mature scattered trees and hedgerows. These habitats are to be retained within the site and subject to management whilst those habitats of lower value are to be developed and subject to new habitat creation.

4.3 Bats

A number of mature trees are present within the site which have suitability support roosting bats. These are being retained as part of the proposals.

The site contains a variety of habitats suitable for supporting foraging and commuting bats in the form of areas of woodland and boundary hedgerows with mature trees. The creation of new hedgerows, native shrub planting and grassland will provide new foraging resources for this species group.

4.4 Badger

A badger sett was been identified within close proximity of the site. The creation of new grassland, native shrub planting and hedgerows will provide improved foraging resources for this species.

4.5 Birds

The site itself contains Solent Wader and Brent Goose Strategy (Whitfield, 2017) site F17D which is classified as a Low Use Site whilst the site also includes part of F17C which has been classified as a Secondary Support Area. The Ecological Enhancement Area has been designed to enhance F17C and offset the loss of F17D as a result of the residential development. The Solent Wader and Brent Goose strategy recorded the presence of golden plover *Pluvialis apricaria*, lapwing *Vanellus vanellus* and snipe *Gallinago* in F17C and lapwing in F17D

Additionally, the site contains a number of habitats with suitability to support breeding birds in the form of woodland, tree lines, hedgerows and areas of scrub whilst the existing arable also provides habitat for ground nesting birds. The creation of new native shrub planting, hedgerow and grassland will provide new habitat for breeding birds.

4.6 Reptiles

Suitable areas of habitat are present within the site associated with the western margins. Reptile surveys carried out by ECOSA in 2018 recorded one juvenile common lizard *Zootoca vivipara* on the western boundary of the Ecological Enhancement Area. The creation of new grassland in the Ecological Enhancement Area will create new habitat for reptiles.

4.7 Invertebrates

The site offers suitable habitat for a range of terrestrial invertebrates in the form of woodland, scrub, mature trees and ruderal vegetation. A number of areas of standing deadwood were also recorded as present within the site offering opportunities for saprophytic species. The creation of new habitat including grassland, native shrub planting and hedgerows will provide new habitat for terrestrial invertebrates.

5.0 HABITAT-SPECIFIC MANAGEMENT (ECOLOGICAL ENHANCEMENT AREA)

5.1 Introduction

This section provides an overview of the habitat-specific management objectives and prescriptions for the Ecological Enhancement Area (see **Map 2** and **Appendix 2**).

5.2 Grassland

The majority of the Ecological Enhancement Area currently comprises an arable field which is proposed to be enhanced to deliver a new diverse area of grassland in the long-term.

5.2.1 Objectives for Grassland

The specific objectives for grassland habitat are:

- Creation and maintenance of species-rich grassland;
- Provision of enhanced habitat for ground nesting birds;
- Provision of enhanced habitat for waders; and
- Creation of new reptile habitat.

5.2.2 Mitigation and Enhancement

Prior to finalising the seed mix for the site it may be necessary to undertake soil testing to establish the current pH, phosphorus and nitrogen levels of the soil. Pending the outcomes of this testing it may be necessary to amend the seed mix, management and preparation methods as appropriate.

Prior to the sowing of the grassland it will be necessary to prepare the ground to maximise the chance of developing a diverse sward. In the first instance any existing vegetation should be cleared from the site through either cutting or the application of a suitable herbicide. The area to be sown will be left for at least one season. Vegetation will be cut in June and September with all arisings remove to reduce the nutrient load in the soil.

Should the site be subject to pernicious weed growth it may be necessary to cut/treat any annual weed growth on more than one occasion. However, the current use of the site as arable land is likely to result in a lower annual weed load.

The soil will then be disc-harrowed to establish the soil for sowing. The seed mix to be sown will be a grassland seed mix such as Emorsgate EM2 (or similar). The seed mix will be sown in either August to September or March to April at a rate of 4 grams per square metre.

5.2.3 Management Prescriptions

Following the seeding of the grassland the initial year of management would entail regular mowing to 40-60 millimetres to control annual weed growth. Following each cut **arisings will be removed from the site** in order to avoid additional nutrient enrichment of the soil. No fertilisers should be applied to the soil at any stage. It is important to manage the grass level in the first year in order to ensure that coarse grasses and annual weeds do not become dominant.

Where perennial weeds such as thistles and docks establish these should be subject to regular control though spot treatment with an appropriate herbicide or individually dug out.

It will be necessary to monitor the establishment of the grassland over the first year as it may be necessary to undertake additional mowing and management in order to encourage the establishment of a diverse sward.

Notwithstanding this, from the second year onwards the management regime would be amended. The grassland will be subject to a September cut to around 40-60 millimetres with the arisings left on site for a period of seven days to allow seeds to drop from the dry hay. The arisings would subsequently be removed following the seven day period.

The grassland would then be subject to a cut to around 75 millimetres in March with all arising removed from site in order to avoid soil enrichment.

5.3 Wader Scrapes

New wader scrapes are to be created in the Ecological Enhancement Area in order to provide improved habitat for overwintering waders.

5.3.1 Objectives for Wader Scrapes

The specific objectives for wader scraps habitat are to:

- Create new habitat for foraging waders;
- Ensure scrape holds water over the winter and into spring;
- Ensure that the scrape remains open and not densely vegetated.

5.3.2 Mitigation and Enhancement

The locations of the wader scrapes are shown in **Appendix 2**. These will be excavated prior to the commencement of the grassland creation detailed in Paragraph 5.2.2.

The excavations will have gently sloping edges and generally no more than 45 centimetres deep in the centre. However, as they are intended to hold water over winter

and into early spring it may be necessary to make them deeper in order to ensure water retention. The scrapes have been designed as irregular shapes in order to maximise the edge habitat. The excavated depth should not be uniform throughout but should include shallower and deeper areas with bumps and hollows in order to create variety across the scrape.

The excavated soil from the creation of the scrapes will be moved away from the scrapes in order to ensure that the profile of the edges of the scrapes remain shallow profiled. This will be used to create shallow south facing bunds within the wider Ecological Enhancement Area as an enhancement feature for reptiles. The wader scrape will be allowed to colonise with vegetation naturally.

5.3.3 Management Prescriptions

The management of the scrapes are anticipated to be largely non-intervention with any vegetation growth around the margins of the ditch to be subject to the same management of the surrounding grassland. However, should the scrape and margins develop denser vegetation cover it may be necessary to undertake more regular cutting in order to maintain their open nature. Should on going monitoring identified any issue with water retention or dense vegetation developing which compromises the function of the scrap then mechanical clearance/re-profiling may be necessary.

5.4 Hedgerow

A new hedgerow is to be planted along the south-western and western site boundary in order to buffer the field from the adjacent roads and newly constructed residential development. The remainder of the existing hedgerows will be retained as part of the scheme.

5.4.1 Objectives for Hedgerow

The specific objectives for hedgerow¹ habitat are to:

- Establish and maintain a barrier between newly constructed residential development to the south, new access and Peak Lane to the west;
- Maintain existing hedgerows and establish new hedgerow in good ecological condition;
- Establish new native hedgerow planting across the site in order to reinforce existing hedgerows:
- Maintain a minimum height of 1.5 metres along all native hedgerows;

¹ The objectives have been taken from the DEFRA Metric 2.0 Technical Supplement ((Natural England, 2019)) for this habitat type

- Maintain a minimum width of 1.5 metres of the centre of the hedgerow; and
- Maintain a gap between ground and base of canopy of less than 0.5 metre for 90% of hedgerow lengths.

5.4.2 Mitigation and Enhancement

A total of 653 metres of new hedgerow planting is to be undertaken which will entail field maple *Acer campestre*, dogwood *Cornus sanguinea*, hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, spindle *Euonymus europaeus* and blackthorn *Prunus spinosa*. This will be planted in accordance with the landscaping specifications and undertaken by experienced landscape contractors. This will be planted in either September/October or March/April.

5.4.3 Management Prescriptions

Newly planted hedgerows will be subject to monitoring and allowed to establish a dense bushy structure. Where failures occur to individual plants these will be restocked as necessary in order to establish a continuous dense hedgerow along the full length. Any grass and ruderal vegetation growth around the newly planted hedgerow will require regular management through cutting or treatment in order to ensure that whips can establish.

In order to maintain an adequate width of the hedgerow these will be stock fenced at a 1.5 metre width from the centre once the hedgerow has been installed.

The on-going management will include an annual cut, as necessary, to be undertaken overwinter (October to February) in order to avoid the nesting bird period. Management will be undertaken in order to maintain a dense busy structure along the hedgerow length and a minimum height of 1.5 metre and width of 1.5 metres.

5.5 Trees

A number of trees are present within the site specifically along the southern boundary of the Ecological Enhancement Area. These trees are all to be retained within the proposals.

5.5.1 Objectives for Trees

The specific objectives for tree habitat are to:

- Continue to maintain a number of mature trees within the site; and
- Retain areas of deadwood within existing trees as far as possible and subject to arboricultural recommendations.

5.5.2 Mitigation and Enhancement

The trees within the site will be retained as part of the proposals. No specific enhancement measures are proposed.

5.5.3 Management Prescriptions

Tree works will be managed and monitored by an experienced arboriculturalist. Tree surgery works will be kept to a minimum where possible with retention of standing deadwood. Should any tree works be required for health and safety reasons then it is proposed that the wood will be retained in habitat piles.

Any necessary tree works will be carried out in accordance with BS 5837:2012 by experienced contractors. Any tree works required, such as for health and safety reasons, would only be carried out following an assessment of the potential impacts of the proposed works on roosting bats by a suitably qualified ecologist. Should tree works have the potential to result on impacts on roosting bats then amendments in the proposed tree works or further survey work may be necessary.

All deadwood including standing deadwood will be retained during management, as this provides an important habitat resource for a range of species. Where tree management is required to remove deadwood this will be retained within the site within habitat piles to provide habitat and shelter to a variety of species.

All tree management works will be undertaken outside the breeding bird season of March to August, inclusive, or if not possible, an ecologist will be present immediately prior to works commencing to check vegetation.

5.6 Native Shrub Planting

New native shrub/scrub planting is proposed along the eastern boundary of the Ecological Enhancement Area.

5.6.1 Objectives for Native Shrub Planting

The specific objectives for native shrub² planting habitat are:

- Establishment of shrub planting comprising at least three native species with no one species comprises more than 75% cover; and
- Maintain a diversity of age ranges within the native buffer planting.

5.6.2 Mitigation and Enhancement

A total of 1,990 square metres of new native shrub planting is to be undertaken which will include crab apple *Malus sylvestris*, blackthorn, wayfaring tree *Viburnum lantana*,

² The objectives have been taken from the DEFRA Metric 2.0 Technical Supplement (Natural England, 2019) for scrub habitat type

elder *Sambucus nigra*, wild privet *Ligustrum vulgare*, hawthorn, guelder rose *Viburnum opulus*, dogwood, hazel and holly *llex aquifolium*. This will be planted by experienced contractors in accordance with the landscape specifications.

5.6.3 Management Prescriptions

The new native shrub planting will be largely non-intervention with the planting allowed to develop a dense and bushy structure.

Once established the on-going management will include an annual cut to be undertaken overwinter (October to February) in order to avoid the nesting bird period. This will be undertaken to encourage a diversity of age ranges with selective removal of mature shrubs (no more than 10%) in order to allow new saplings to develop.

5.7 Ditches

A ditch is currently present running from east to west, flowing into the Crofton Ditch, along the southern boundary of the Ecological Enhancement Area. This is to be retained as part of the proposals.

5.7.1 Objectives for Ditch

The specific objectives for ditch habitat are to:

- Maintain and enhance the ditch; and
- Ensure that the existing ditch remains open free from excessive scrub growth.

5.7.2 Mitigation and Enhancement

The ditch is to be retained as part of the proposals. No significant works to this ditch are proposed. However, this will be subject to longer-term management the provide a betterment over the existing situation.

5.7.3 Management Prescriptions

The ditch will be subject to ad hoc management outside of the nesting bird period in order to ensure that the ditch maintains an open nature. Selective thinning of scrub and other dense vegetation will be undertaken on an ad hoc basis with no more than one bank cut per year and no more than 25% of each bank being covered in scrub.

Where thinning is undertaken the arising vegetation will be collected and removed from the ditch in order to ensure the ditch does not become blocked with vegetation. Ongoing monitoring of the ditch will be undertaken with any debris or litter removed in order to remove potential pollution risks from inorganic material.

Whilst not a specific aim of this management plan the management of the existing vegetation within the ditch will open up the ditch any potentially increase water flow

though the ditch which may result in an enhancement for water vole which are known to be present in the area.

6.0 HABITAT-SPECIFIC MANAGEMENT (RESIDENTIAL DEVELOPMENT)

6.1 Introduction

This section provides an overview of the habitat-specific management objectives and prescriptions for the residential development area of the site.

6.2 Broad-leaved Woodland

An area of woodland is present to the south of the site which will be retained as part of the proposals. This will be subject to long-term ecological management.

6.2.1 Objectives for Broad-leaved Woodland

The specific objectives for broad-leaved woodland³ habitat are to:

- Maintain and expand an area of continuous canopy cover;
- Maintain a dominance of native species and a diverse age and structure of the trees present;
- Monitor and manage any damage to the woodland as a result of recreational access; and
- Maintain areas of deadwood within the woodland.

6.2.2 Mitigation and Enhancement

The woodland to the south of the site is to be retained and protected as part of the development in accordance with the measures set out in the Ecological Impact Assessment submitted with the planning application.

New tree planting will be undertaken in the existing area of tall ruderal with encroaching scrub in accordance with the landscaping specification.

6.2.3 Management Prescriptions

The management of the existing woodland will be largely non-intervention with tree works potentially undertaken for reasons of health and safety. Any woodland management works will be undertaken between October and February outside of the breeding bird season.

Management will allow a scrubby edge to develop along the path running through the woodland to minimise the risk of additional recreational access to the wider woodland. Any damage or erosion of the woodland as a result of recreational access will be monitored and action taken to address any impacts which arise.

³ The objectives have been taken from the DEFRA Metric 2.0 Technical Supplement (Natural England, 2019) for this habitat type

The woodland is currently adjacent to residential gardens to the south and therefore, there is the risk of garden and/or invasive species colonising the woodland. On-going monitoring of invasive species will be undertaken. Where any non-native or invasive species are identified within the woodland these will be subject to an appropriate treatment program for the species.

Where any trees work are deemed necessary for health and safety reasons these be managed and monitored by an experienced arboriculturalist. Tree surgery works will be kept to a minimum where possible with retention of standing deadwood. Should any tree works be required for health and safety reasons then it is proposed that the wood will be retained in habitat piles.

Any necessary tree works will be carried out in accordance with BS 5837:2012 by experienced contractors. Any tree works required, such as for health and safety reasons, would only be carried out following an assessment of the potential impacts of the proposed works on roosting bats by a suitably qualified ecologist. Should tree works have the potential to result on impacts on roosting bats then amendments in the proposed tree works or further survey work may be necessary.

All deadwood, including standing deadwood, will be retained during management, as this provides an important habitat resource for a range of species. Where tree management is required to remove deadwood this will be retained within the site within habitat piles to provide habitat and shelter to a variety of species.

The existing area of tall ruderal vegetation will be subject to management on an ad-hoc basis in order to allow succession of the habitat to scrub complemented by new tree planting being undertaken at the establishment of the landscaping scheme. The scrub and ruderal vegetation will require regular cutting around the areas of new planted trees and saplings in order allow the planting to successfully establish.

6.3 Wildflower Grassland

New wildflower grassland is to be created within new areas of open space within the residential development.

6.3.1 Objectives for Wildflower Grassland

The specific objectives for wildflower grassland habitat are:

 Creation and maintenance of species-rich grassland around the margins of the residential development

6.3.2 Mitigation and Enhancement

Prior to finalising the seed mix for the site it may be necessary to undertake soil testing to establish the current pH, phosphorus and nitrogen levels of the soil. Pending the

outcomes of this testing it may be necessary to amend the seed mix, management and preparation methods as appropriate.

Prior to the sowing of the grassland it will be necessary to prepare the ground to maximise the chance of developing a diverse sward. In the first instance any existing vegetation should be cleared from the site through either the cutting or the application of a suitable herbicide. The area to be sown will be left for at least one season. Vegetation will be cut in June and September with all arisings remove to reduce the nutrient load in the soil.

Should the site be subject to pernicious weed growth it may be necessary to cut/treat any annual weed growth on more than one occasion. However, the current use of the site as arable land is likely to result in a lower annual weed load.

The soil will then be disc-harrowed to establish the soil for sowing. The seed mix to be sown will be a grassland seed mix such as Emorsgate EM2 and Emorsgate EM10 (or similar). The seed mix will be sown in either August to September or March to April at a rate of 4 grams per square metre.

6.3.3 Management Prescriptions

Following the seeding of the grassland the initial year of management would entail regular mowing to 40-60 millimetres to control annual weed growth. Following each cut arisings will be removed from the site in order to avoid additional nutrient enrichment of the soil. No fertilisers will be applied to the soil at any stage. It is important to mange the grass level in the first year in order to ensure that coarse grasses and annual weeds do not become dominant.

It will be necessary to monitor the establishment of the grassland over the first year as it may be necessary to undertake additional mowing and management in order to encourage the establishment of a diverse sward.

Notwithstanding this, from the second year onwards the management regime would be amended. The grassland will be subject to a September cut to around 40-60 millimetres with the arisings left on site for a period of seven days to allow seeds to drop from the dry hay. The arisings would subsequently be removed following the seven day period.

The grassland would then be subject to a cut to around 75 millimetres in March with all arisings removed from site in order to avoid soil enrichment.

A mown pathway is proposed through the grassland which will be maintained by regular mowing to a height of 50 millimetres.

6.4 Hedgerows and Tree Lines

The existing hedgerows and tree lines are to be retained within the proposals with a suite of new hedgerow planting to be undertaken.

6.4.1 Objectives for Hedgerow and Tree Lines

The specific objectives for hedgerow and tree line⁴ habitat are to:

- Maintain existing hedgerows and tree lines in good condition;
- Establish new native hedgerow planting across the site in order to reinforce existing hedgerows:
- Maintain a minimum height of 1.5 metres along all native hedgerows;
- Maintain a minimum width of 1.5 metres of the centre of the hedgerow; and
- Maintain a gap between ground and base of canopy of less than 0.5 metre for 90% of hedgerow lengths (excluding tree lines);

6.4.2 Mitigation and Enhancement

A total of 1,749 metres of new hedgerow planting is to be undertaken which will entail field maple, dogwood, hazel, hawthorn, spindle and blackthorn. This will be planted in accordance with the landscaping specifications and undertaken by experienced landscape contractors.

6.4.3 Management Prescriptions

Newly planted hedgerows will be subject to monitoring and allowed to establish a dense bushy structure. Where failures occur to individual plants these will be restocked as necessary in order to establish a continuous dense hedgerow along the full length. Any grass and ruderal vegetation growth around the newly planted hedgerow will require regular management through cutting or treatment in order to ensure that whips can establish.

The on-going management will include an annual cut, as necessary, to be undertaken overwinter (October to February) in order to avoid the nesting bird period. Management will be undertaken in order to maintain a dense busy structure along the hedgerow length. Cutting of hedgerow will not take the height below 1.5 metres nor a width of 1.5 metres from the centre.

Management of existing trees within the hedgerows is anticipated to be largely nonintervention. Where necessary, tree works will be managed and monitored by an

⁴ The objectives have been taken from the DEFRA Metric 2.0 Technical Supplement (Natural England, 2019) for this habitat type

experienced arboriculturalist. Tree surgery works will be kept to a minimum where possible with retention of standing deadwood. Should any tree works be required for health and safety reasons then it is proposed that the wood should be retained in habitat piles.

Any necessary tree works will be carried out in accordance with BS 5837:2012 by experienced contractors. Any tree works required, such as for health and safety reasons, would only be carried out following an assessment of the potential impacts of the proposed works on roosting bats by a suitably qualified ecologist. Should tree works have the potential to result on impacts on roosting bats then amendments in the proposed tree works or further survey work may be necessary.

All deadwood including standing deadwood will be retained during management, as this provides an important habitat resource for a range of species. Where tree management is required to remove deadwood this will be retained within the site within habitat piles to provide habitat and shelter to a variety of species.

6.5 Native Shrub Planting

A range of new native shrub planting is proposed within the landscaping scheme.

6.5.1 Objectives for Native Shrub Planting

The specific objectives for native shrub⁵ planting habitat are:

- Establishment of shrub planting comprising at least three native species with no one species comprises more than 75% cover; and
- Maintain a diversity of age ranges within the native buffer planting.

6.5.2 Mitigation and Enhancement

A total of 1,766 square metres of new native shrub planting is to be undertaken which will include crab apple *Malus sylvestris*, blackthorn, wayfaring tree *Viburnum lantana*, elder *Sambucus nigra*, wild privet *Ligustrum vulgare*, hawthorn, guelder rose *Viburnum opulus*, dogwood, hazel and holly *llex aquifolium*. This will be planted by experienced contractors in accordance with the landscape specifications.

6.5.3 Management Prescriptions

The new native shrub planting will be largely non-intervention with the planting allowed to develop a dense and bushy structure.

Once established the on-going management will include an annual cut to be undertaken overwinter (October to February) in order to avoid the nesting bird period.

⁵ The objectives have been taken from the DEFRA Metric 2.0 Technical Supplement (Natural England, 2019) for scrub habitat type

This will be undertaken to encourage a diversity of age ranges with selective removal of mature shrubs (no more than 10%) in order to allow new saplings to develop.

6.6 Pond

A new attenuation basin is to be constructed in the south of the site which will include a permanently wet area in the centre which will create a new pond habitat.

6.6.1 Objectives for Pond

The specific objectives for pond habitat are to:

- Creation and maintenance of new riparian edge habitat; and
- Creation and long-term management of the pond to provide new habitat for a wide range of species.

6.6.2 Mitigation and Enhancement

New marginal planting is to be undertaken within the pond once created including common water plantain *Alisma plantago-aquatica*, marsh marigold *Caltha palustris*, meadowsweet *Filipendula ulmaria*, yellow flag iris *Iris pseudacorus*, purple loosestrife *Lythrum salicaria*, marsh cinquefoil *Potentilla palustris*, brooklime *Veronica beccabunga*, cuckooflower *Cardamine pratensis* and ragged robin *Lychnis flos-cuculi*. The seasonally wet areas will also be sown with a wet meadow seed mixture such as Emorsgate EM8 or similar.

6.6.3 Management Prescriptions

For grassland management prescriptions in relation to the newly sown grassland around the margins of the pond see Paragraph 6.3.3.

It is considered that the management of the waterbody will be largely non-intervention with removal of litter where necessary. Once vegetation cover has established vegetation will be managed to provide vegetation cover of no more than 40%.

7.0 MONITORING AND REVIEW

A review of the mitigation and enhancement measures implemented will be undertaken by a suitably qualified ecologist following the completion of the habitat creation measures. Following the implementation of the proposed mitigation and enhancement measures, any necessary revisions to the Ecological Management Plan will be made accordingly. Should any significant deviations, which would effect the ability of the scheme to deliver the objectives set out in Paragraph 2.2, be noted then this document may require significant revisions and the timeline for delivery adjusted accordingly.

It is proposed that the parties responsible for implementation of this management plan carry out regular *ad hoc* monitoring at the site to establish any obvious deviations or faults. Where any issues are highlighted, a suitably qualified ecologist will be consulted for advice where necessary.

An integral part of the management plan process will be a system of monitoring and a formal progress review. There will be a review meeting at the end of five years, post-completion, attended by the parties responsible for implementing the management plan and management contractor, to discuss the progress of the activities undertaken. This will enable issues to be identified and resolved where required. The meeting will take place to judge the effectiveness of the plan's aims, objectives and prescriptions.

The monitoring and review process will comprise a review report to include the following elements:

- Details of extent, timing and outcome of all works undertaken in the previous five years;
- Managing agent's assessment of effectiveness of works undertaken and the Ecological Management Plan as a whole; and
- Recommendations for next five year's management requirements.

In addition to the above the Ecological Enhancement Area will be subject to wintering bird monitoring for three years following the implementation of the habitat creation measures. Each years' monitoring will entail a monthly visit at high tide between October and March by an experienced ornithologist to record usage of the site by wintering birds with specific focus on recording waders associated with the Solent SPAs. This information will be report annually to the party responsible for the land and the Solent Wader and Brent Goose Strategy Partnership (or their successors). Where this monitoring establishes any negative trends in wader usage of the site this will be fed into the monitoring and review process of the management plan with revisions made where necessary.

8.0 TIMETABLE OF MANAGEMENT AND MONITORING WORKS

Management Prescription			on Year ⁶												
		Reference	0	1	2	3	4	5	6	7	8	9 [.]	10		
	Grassland creation (March/April or August/September)	5.2.2													
Construction Phase Mitigation and Enhancement	Wader scrape creation	5.3.2													
	New hedgerow plating (March/April or September/October)	5.4.2													
	Regular grassland mowing through initial year of establishment	5.2.3, 5.3.3													
	Grassland cut to around 40-60 millimetres (September)	5.2.3, 5.3.3													
Liekitet Menegement	Grassland cut to 75 millimetres (March)	5.2.3, 5.3.3													
Habitat Management	Hedgerow management (October to February, as necessary)	5.4.3													
	Ditch management (October to February, as necessary)	5.5.3													
	Tree management (October to February, as necessary)	5.6.3													

Table 1: Ecological Enhancement Area

⁶ The exact timescales for the construction of the development are unknown. For the purposes of this mitigation and management plan, construction works are referred to as "Year 0" with the mitigation and management plan covering subsequent years "Year 1 – 10".

Management Prescription		Section Reference											
			0	1	2	3	4	5	6	7	8	9	10
Monitoring and Progress Review	Review of initial habitat creation measures	7.0											
	Transfer to Fareham Borough Council (or alternative third party) and Appointment of Managing Contractor	7.0											
	Wintering Bird Monitoring	7.0											
	Ad hoc monitoring by management contractors	7.0											
	Five-year management review	7.0											

 Table 2: Residential Development - South of Oakcroft Lane

Management Prescription			Year ⁷												
		Reference	0	1	2	3	4	5	6	7	8	9	10		
Construction Phase Mitigation and Enhancement	New tree planting, hedgerow and native shrub planting	6.2.2, 6.4.2, 6.5.2													
	Grassland creation (March/April or August/September)	6.3.2													
	Pond creation and planting	6.6.2													
Habitat Management	Woodland management (October to February)	6.2.3													

⁷ The exact timescales for the construction of the development are unknown. For the purposes of this mitigation and management plan, construction works are referred to as "Year 0" with the mitigation and management plan covering subsequent years "Year 1 – 10".

Management Prescription		Section Reference								Year ⁷								
		Reference	0	1	2	3	4	5	6	7	8	9	10					
	Regular wildflower meadow mowing through initial year of establishment	6.3.3																
	Grassland cut to around 40-60 millimetres (September)	6.3.3																
	Grassland cut to 75 millimetres (March)	6.3.3																
	Hedgerow, tree and native shrub management (October to February, as necessary)	6.4.3, 6.5.3																
	Pond management (October to February, as necessary)	6.6.3																
Monitoring and Progress Review	Review of initial habitat creation measures	7.0																
	Ad hoc monitoring by management contractors	7.0																
	Five-year management review	7.0																

9.0 REFERENCES

CIEEM, 2017. *Guidelines for Ecological Report Writing.* 2nd ed. Winchester: Chartered Institute of Ecology and Environmental Management.

ECOSA, 2015. Oakcroft Lane, Stubbington - Extended Phase 1 Ecological Assessment and Wintering Bird Surveys FINAL, North Baddesley: s.n.

ECOSA, 2015. *Oakcroft Lane, Stubbington - Phase 2 Ecological Assessment FINAL,* North Baddesley: s.n.

ECOSA, 2015. *Oakcroft Lane, Stubbington - Wintering Bird Surveys 2014-2015 FINAL,* North Baddesley: s.n.

ECOSA, 2016. *Oakcroft Lane, Stubbington - Wintering Bird Surveys 2015-2016 FINAL,* North Baddesley: s.n.

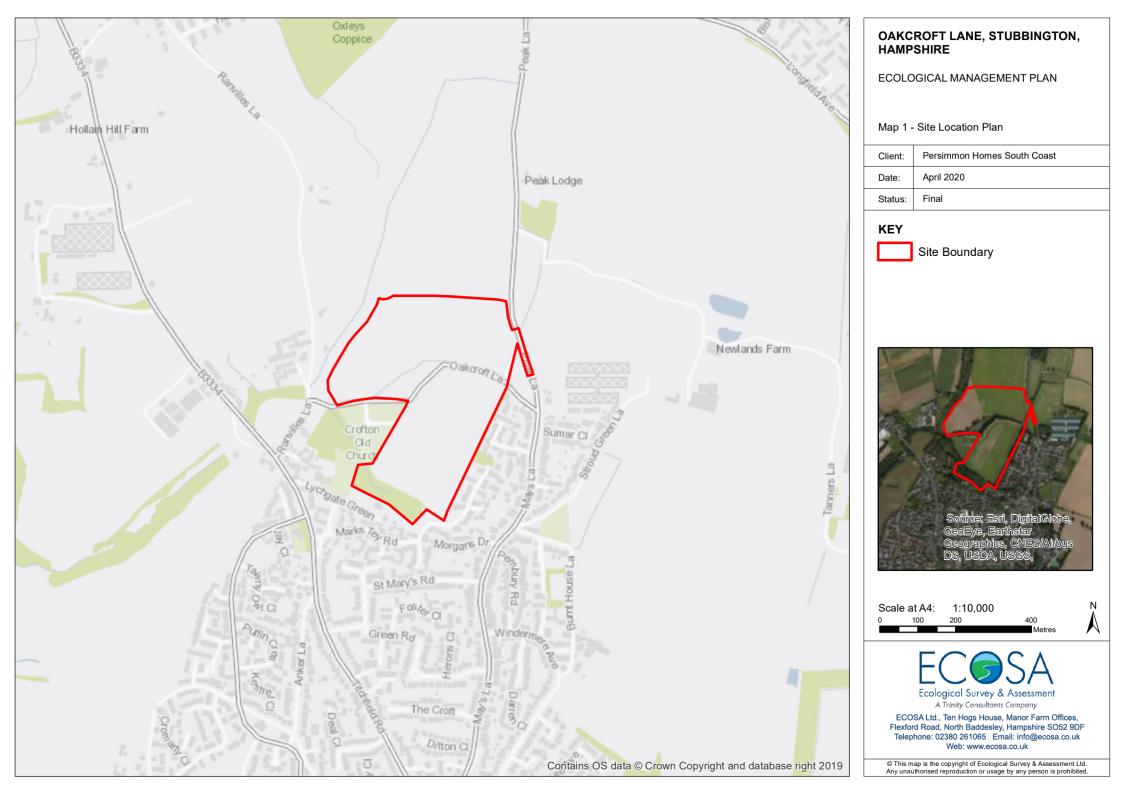
ECOSA, 2020. Oakcroft Lane - Biodiversity Impact Calculator FINAL Rev.1, s.l.: s.n.

ECOSA, 2020. Oakcroft Lane, Stubbington - Ecological Impact Assessment FINAL Rev.1, North Baddesley: ECOSA.

ECOSA, 2020. Oakcroft Lane, Stubbington - Shadow Habitats Regulation Assessment FINAL Rev.1, s.l.: s.n.

Natural England, 2019. *The Biodiversity Metric 2.0 - Technical Supplement (Beta Version)*, s.l.: Natural England.

Whitfield, D., 2017. Solent Waders and Brent Goose Strategy Interim Project Report: Year One, s.l.: Hampshire and Isle of Wight Wildlife Trust. Map 1 Site Location Plan



Map 2 Location of Ecological Enhancement Area



Appendix 1 Site Proposals Plan



Appendix 2 Ecological Enhancement Area

Wader scrapes are to be created of various √depths, no more than 45cm deep, with gently∕ sloping edges and irregular shapes to provide suitable habitats for wading birds. These are located in the centre of the site away from tree \vee \vee \vee \vee \vee \vee \vee \vee \vee + \vee + \vee + \vee

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