

EASTLEIGH BOROUGH COUNCIL

Phase 3 Link Road

Ecological Mitigation and Management Plan (EMMP) and Landscape and Ecological Management and Enhancement Plan (LEMP)

V1

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1 INTRODUCTION

This document has been prepared in order to satisfy a planning conditions associated with the planning application for the Phase 3 Link Road ('Land between Burnetts lane and Allington Lane') at One Horton Heath (OHH). The proposal concerned:

Construction of road between Allington Lane and Burnetts Lane with associated footway, cycle paths, water crossings, drainage and landscaping (This application is subject to Environmental Impact Assessment)

Planning condition 5, requiring an Ecological Mitigation and Management Plan (EMMP), states:

No development shall commence (including vegetation clearance and groundworks) until an Ecological Mitigation and Management Plan (EMMP) covering all the proposed development within that phase has been submitted to and approved in writing by the Local Planning Authority. The EMMP shall be based on the approved Ecological Mitigation and Management Strategy (EMMS) for the One Horton Heath site and the recommendations in Chapter 10 and Appendix 10.12 of the submitted Environmental Statement and on the revised Green Infrastructure Parameter Plan (dated 25.05.2021). They shall be based on up-to-date ecological survey information and detail the avoidance and mitigation measures to be carried out on site and off-site, together with a timetable for implementation. The development shall be carried out in accordance with the approved details. The EMMP shall include the following:

Detailed risk assessment of potentially damaging site clearance and construction activities;

Details of the extent and location of important ecological features (habitats, including watercourses, ponds, all hedgerows and trees, and species including great crested newt, bats, dormice, otter, reptiles and barn owl) and related green infrastructure and proposed avoidance and mitigation measures, shown on appropriate scale maps and plans;

Identification of 'biodiversity protection zones' within which no construction related activities will take place (including protection zones for SINCs, woodland, hedgerows, ponds and watercourses);

Details of the requirements for updated ecological surveys to inform mitigation measures and the timetable for each survey;

Include a Biodiversity Net Gain Plan based on current DEFRA advice which enables delivery of a site wide minimum of +10%

Identify where Protected Species Licences will be required to enable the proposed development to proceed lawfully;

Detailed practical measures (both physical measures and sensitive working practises) to avoid or reduce impacts during site clearance and construction including the location and timing of sensitive works to avoid harm to important biodiversity features (may be provided as a set of method statements)

*The times during construction when specialist ecologists need to be present on site to oversee works.
The approved EMMP shall be adhered to and implemented in accordance with the approved details.*

Planning condition 6 requires a Landscape and Ecological Management and Enhancement Plan (LEMP) as follows:

A final updated Landscape and Ecological Management and Enhancement Plan (LEMP) shall be submitted to, and be approved in writing by, the local planning authority prior to the first commencement of use of the road or adjoining open space. The purpose of the LEMP is to ensure that all the ecological features to be retained and those that are to be created, restored or enhanced are appropriately managed and monitored to deliver the conservation objectives for the development. The content of the LEMP shall include the following:

- (i) Description and evaluation of the ecological features to be managed;*
- (ii) Ecological trends and constraints on site that might influence management;*
- (iii) Aims and objectives of management, including that for buffers around watercourses and wetland habitats and invasive non- native species controls.*
- (iv) Appropriate management and maintenance options for achieving aims and objectives.*
- (v) Details of target condition for the retained habitats and those created, restored or enhanced and monitoring methods and remedial measures to ensure these targets including a minimum 10% Biodiversity Net Gain for the approved development are achieved;*
- (vi) Prescriptions and specifications for management actions;*
- (vii) Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period) to deliver the management and monitoring actions;*
- (viii) Details of the body or organization responsible for implementation of the plan.*

The LEMP shall also include details of the legal and funding mechanism(s) by which the long-term implementation of the plan will be secured by the developer with the management body(ies) responsible for its delivery. The plan shall also set out (where the results from monitoring show that conservation aims and objectives of the LEMP are not being met) how contingencies and/or remedial action will be identified, agreed and implemented so that the development still delivers the fully functioning biodiversity objectives of the originally approved scheme. The approved plan shall be fully implemented in accordance with the approved details.

This EMMP/LEMP accords with the over-arching Ecological Mitigation and Management Strategy (Johns 2022) produced for the wider One Horton Heath Outline Planning Application (OPA).

Construction phase elements and requirements will be implemented through the Construction Environment Management Plan (CEMP¹).

2 LINK ROAD PROPOSALS

Full application number F/21/91185) on the 6th August 2021. The application comprised:

Construction of Allington Lane to Burnetts Lane Link Road with associated footways, cycle paths, water crossings and landscaping

¹ Eastleigh Borough Council. 2022. Construction Environmental Management Plan. Phase 3 Link Road. V03.

The Site location Plan is shown as Figure 1 below. Figures 2 and 3 below show the baseline habitats (Figure 2) and post development habitats (Figure 3).

The general design parameters are as follows:

- Carriageway width – 7.3m
- Separation margin between footway and carriageway edge – verge between road and footway varies and in some locations there is no verge. Where a verge is provided it is predominantly a minimum of 1.5m (separation margin between footway and carriageway edge – 1.0m each on both sides of the carriageway);
- Cycle path is 3m minimum on eastern side, increasing to 4.5m alongside residential development. Cycle path on western side, where provided, is 3m. Cycle path only provided alongside residential parcels
- Shared footway/cycleway – 3.0m on both sides of the carriageway and ;
- Landscaping verge varies throughout but is generally 2.0m on both sides of the carriageway (Landscaping verge for trees – 2.0m on both sides of the carriageway).

It is proposed that the entire link road through the site would be subject to a 30mph limit and up to 40mph in specific locations, such as the access roundabouts and the link between Bubb Lane and Burnetts Lane.

Figure 1 Link Road Site Plan location

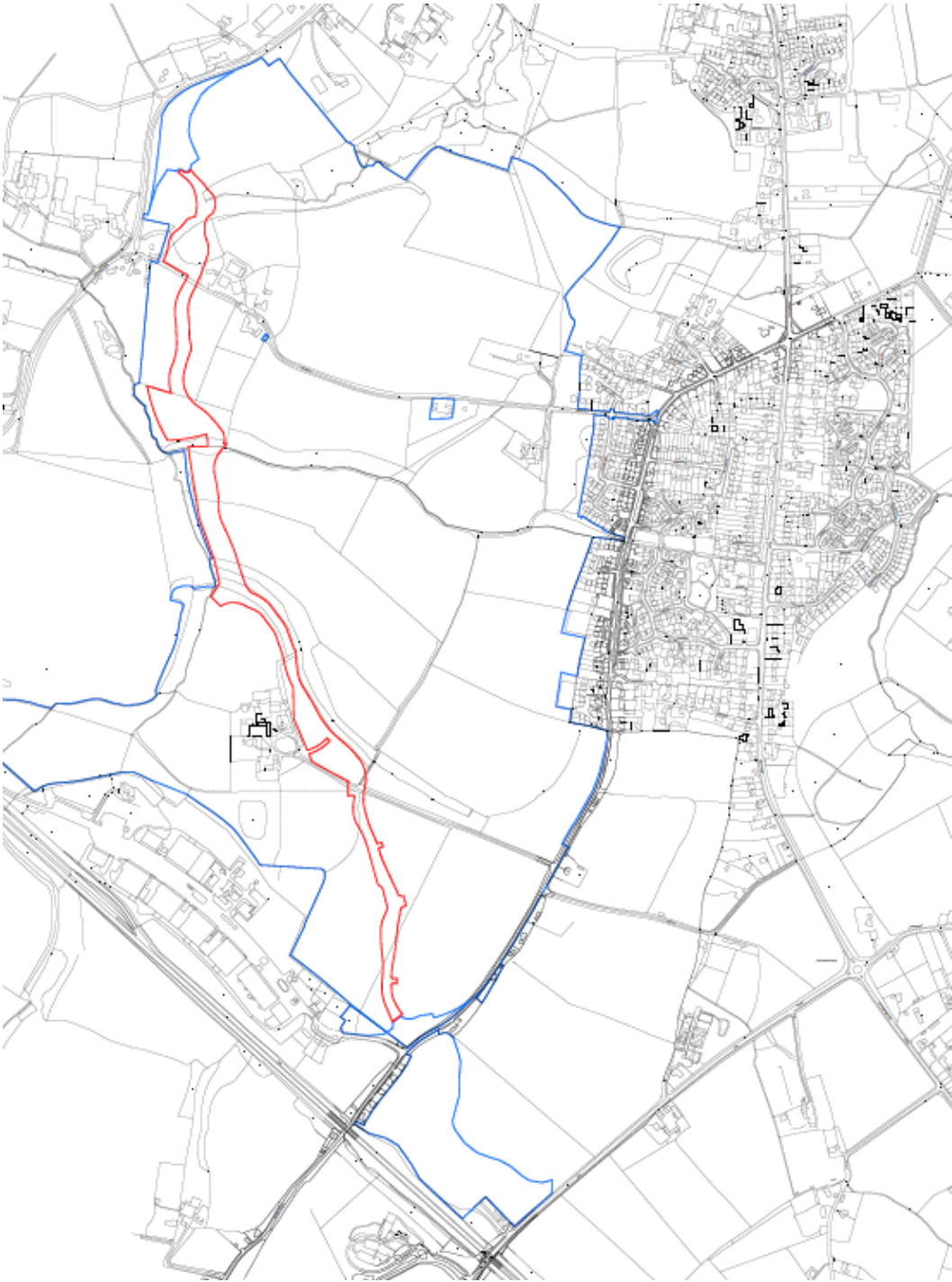


Figure 2 Phase 1 Habitat Survey (no change recorded in 2022)

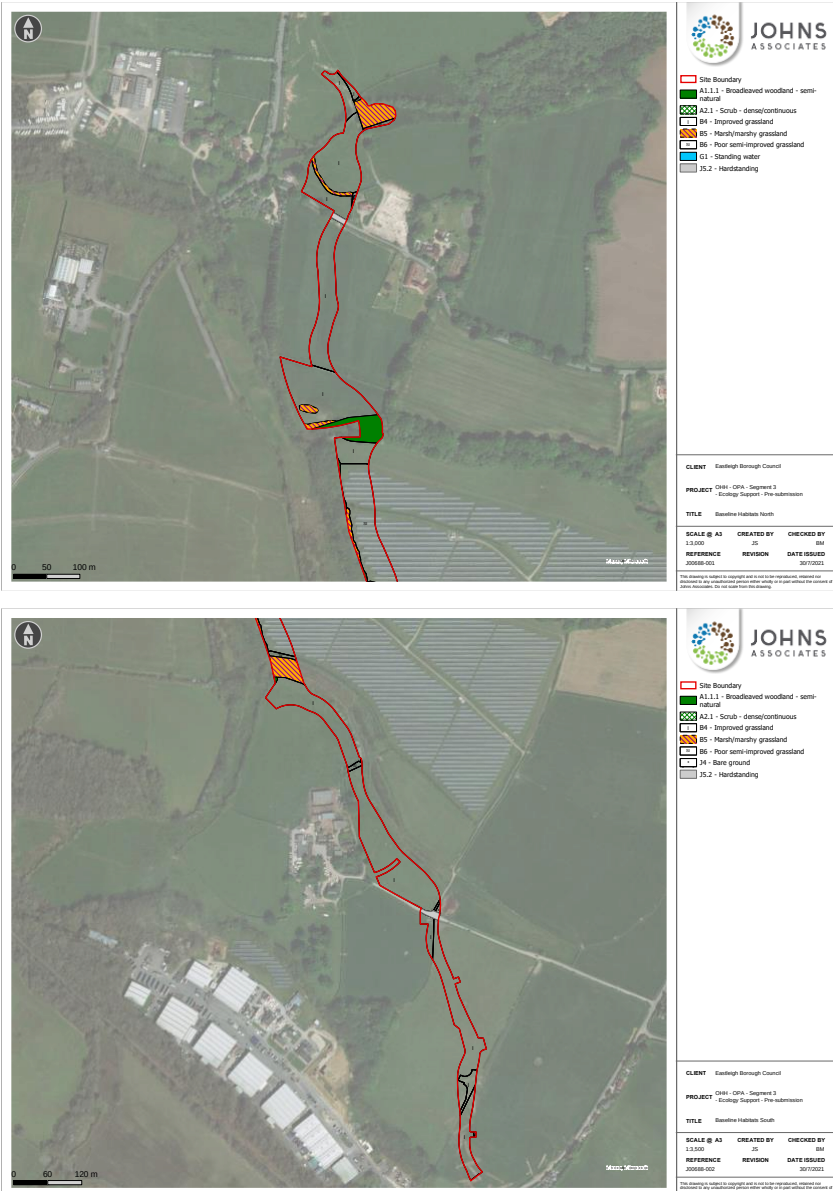
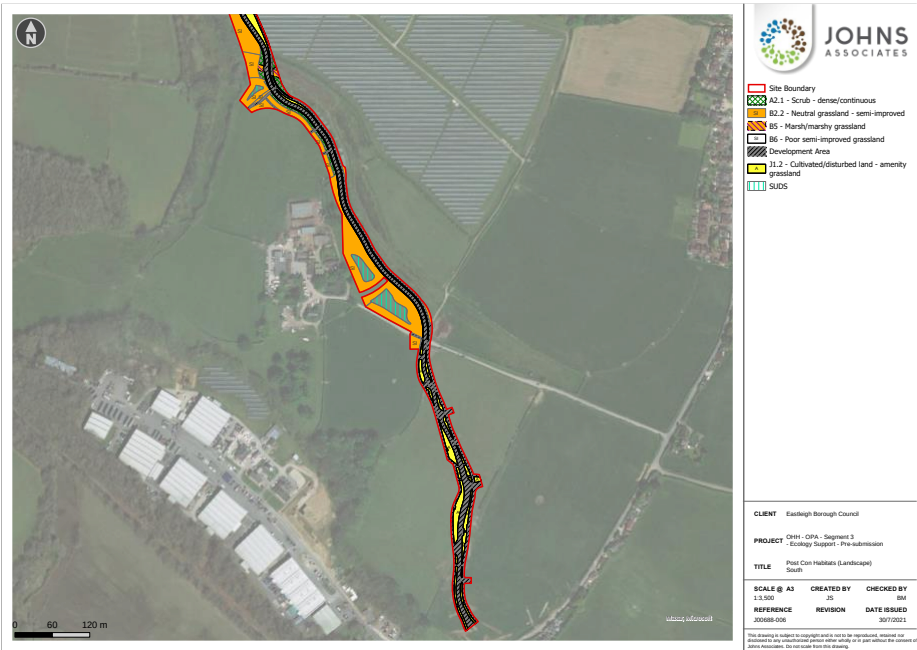
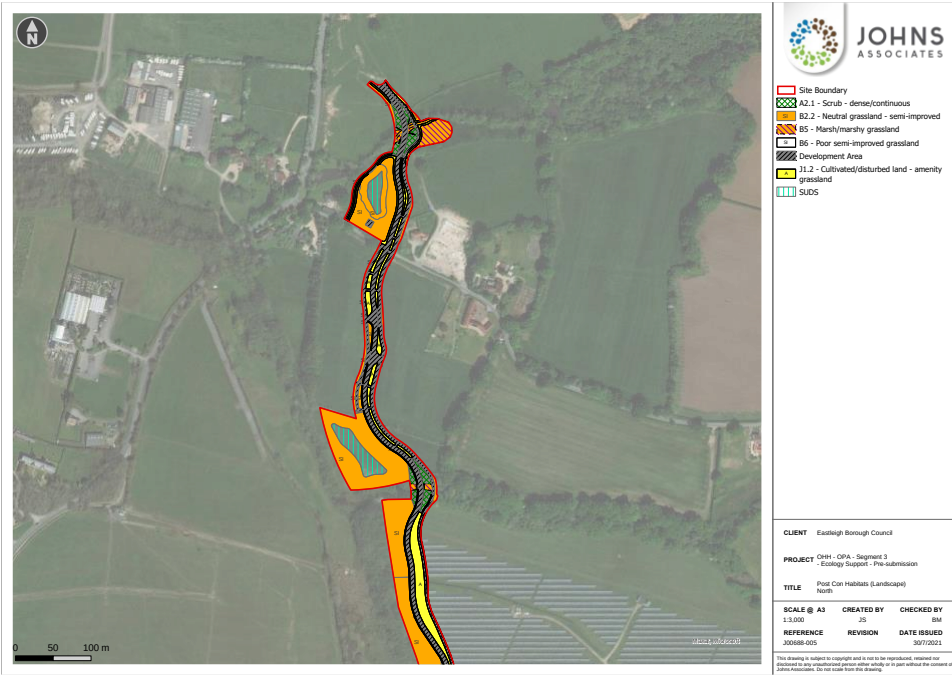


Figure 3 Post construction habitat plans



PART ONE – EMMP

The objective of the EMMP is to:

To protect features of ecological importance during site clearance and construction in accordance with paragraph 174 of the National Planning Policy Framework (NPPF), July 2021 and Policies DM1 and DM11 of the Local Plan (Schedule of Main Modifications) May 2021. The EMMP will provide the detailed measures for managing impacts to biodiversity throughout each phase of the construction. The EMMP will be based upon the Ecological Mitigation and Management Strategy once submitted and approved by the local planning authority.

This EMMP should be read with the following supporting documents:

- The EMMS for the OPA (Johns September 2022);
- OHH Ecology Chapter of ES (Johns 2020) and ES Addendum for the Link Road (Johns 2021 and 2022);
- Bird Hazard Management Plan (Johns J00532 v1.0 April 2021);
- Construction Environmental Management Plan (CEMP) Phase 3 Link Road (ref OHHP3RoadCEMP/BJM032022, March 2022);
- GCN licence ref 2020-44604-EPS-MIT-1 ('Quobleigh GCN licence');
- Bat licence 2021-52226-EPS-MIT-1, OHH Northern and Southern Building Clusters;
- Habitat Regulations Assessment (Appropriate Assessment) for the Link Road (Johns 2022) and
- Bat Mitigation Strategy (Johns Associates, 2019).

Implementation and responsibilities are addressed in Section 13.

3 DETAILED RISK ASSESSMENT OF POTENTIALLY DAMAGING SITE CLEARANCE AND CONSTRUCTION ACTIVITIES

The EMMP is based on the recommendations in Chapter 10 and Appendix 10.12 of the submitted Environmental Statement.

Many species of animal and plant receive some degree of legal protection. For the purposes of this document, legal protection refers to: species included on Schedules 2 and 5 of the Conservation of Natural Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (UK Government, 1981) (as amended).

Legal offences associated with species listed on Schedule 2 of the Habitats Regulations and Schedule 5 of the Wildlife and Countryside Act in England and Wales include inter alia:

- Deliberate capture, injury or killing of animals or taking or destroying their eggs.
- Deliberately disturb animals in a way that would significantly affect their local distribution or abundance, or affect their ability to survive, breed or rear young.
- Intentional or reckless disturbance of an animal in its place of shelter or protection.
- Damaging or destroying a resting place or breeding site.
- Intentionally or recklessly obstructing access to a place of shelter or protection; and
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead animal or any part of an animal.

Relevant species listed on these Schedules that are potentially associated with this site comprise bats, great crested newt, birds, hazel dormouse and common reptile species (e.g., slow worm and common lizard).

Bats, great crested newt and dormouse receive full protection from all legal offences listed above which includes disturbance and loss of habitat. Common reptile species receive partial protection under the Wildlife and Countryside Act in that they are protected from killing and injury only.

All species of wild bird are protected under the Wildlife and Countryside Act (1981) (as amended) from killing or injury. In addition, it is an offence to take or damage/destroy their eggs and to damage or destroy a nest whilst it is in use. Species listed

on Schedule 1 (such as barn owl) receive additional protection in that it is illegal to disturb birds or their young whilst occupying, or near to, an active nest.

Badgers are protected under the Protection of Badgers Act 1992 (UK Government, 1992) which makes it an offence to wilfully kill, injure or take (or attempt to kill, injure or take) a badger; or to disturb badgers whilst occupying their setts.

A number of wild plants and animals (including grass snake and some species of bat) are also included within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (UK Government, 2006) which lists flora, fauna and habitats considered by the Secretary of State to be of principal importance for conserving biodiversity.

The publication of the "England Biodiversity List" satisfies the requirements of Section 41 of the NERC Act 2006 for the conservation of biodiversity. Section 40 of the NERC Act 2006 requires public bodies, including local planning authorities, to have regard for the conservation of biodiversity in England, when carrying out their normal functions.

Certain Invasive Non Native Species (INNS) of plants are listed under Section 14(2) of the Wildlife and Countryside Act 1981 (as amended). This states that "...if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence". Small numbers of Invasive Non Native Species (INNS) including Japanese rose, Himalayan balsam (Quobleigh Stream and Woods), rhododendron and laurel (Quobleigh Woods) and Japanese knotweed (Chalcroft Farm) occur on the wide OHH Site. No INNS species have been recorded for the Link Road site.

The main risks of clearance and construction activities associated with the Link Road are summarised in Table 1 below.

Table 1. Site clearance and construction ecological risks

Clearance/ Issue	construction	Risk	Mitigation/solution
Protected species - GCN		Contravention of WCA ² and Habitat Regulations	All clearance/construction activities affecting GCN within 250m of GCN ponds are subject to European Protected Species (EPS) licences and associated mitigation. The Link Road impacts both the Northern Quobleigh GCN population (modification to existing licence for the Allington Road roundabout spur down to Quobleigh Stream) and the Southern population (within 250m of Chalcroft Farm pond).
Protected species - bats		Contravention of WCA ² and Habitat Regulations	No buildings with bat roosts will be demolished as a result of the Link Road. Any trees with bat roost potential have been subject to bat tree climbing or emergence surveys. An alder tree at the Quobleigh Stream crossing was subject to bat emergence surveys but no bat roosts were found, however it is recommended that this tree is subject to soft felling techniques as a precautionary measure. No other trees on the Link Road route have roosting bat potential. Whilst no bat licences are required for the road, various bat licences are in place across the wider One Horton Heath development and copies of these will be retained by the Principal Contractor. A number of tree roosts are also present across the site. The location of which will be made available to the Principal Contractor and these will be updated/reassessed as required

² Wildlife and Countryside Act 1981 (as amended)

Protected species – hazel dormouse	Contravention of WCA Act and Habitat Regulations	Construction of the Link Road through Foxholes Wood to be subject to EPS licence and mitigation.
Nesting birds	Contravention of WCA Act	All vegetation clearance to be scheduled to be undertaken outside nesting bird season (taken to be 1 st March – 31 st August): if undertaken during the nesting period, then a nesting bird check will be required.
Barn owl	Contravention of WCA Act	No buildings with breeding barn owl potential would be demolished as a result of the Link Road. Vegetation planting around the Link Road near Chalcroft Farm has been designed to minimise collision risk to barn owl.
Reptiles	Contravention of WCA Act	Habitat with reptile potential to be removed under a Method Statement
Sites of Importance for Nature Conservation	Local Plan policy protection	No clearance or construction activity to impact SINCs.
Special Areas of Conservation (SACs)	Habitat Regulations	Construction activity likely to impact SACs, principally release of pollutants and sediments into watercourses that may impact the nearby River Itchen SAC
Bird Hazard – attraction of risk bird species	CAA CAP 772	See CEMP and Bird Hazard Management Plan wording.
Invasive Non Native Species of plants	Sch. 9 of the WCA Act	Adoption of robust biosecurity and INNS methods (see Section 6 below)

4 DETAILS OF THE EXTENT AND LOCATION OF IMPORTANT ECOLOGICAL FEATURES

Ecological Constraint Plans (North and South) are set out as Appendix A. These show the extent and location of important ecological features across the wider OHH site.

Of particular relevance to the Link Road are:

- Quobleigh great crested newt (GCN) area subject to GCN licence – a small final section of the northern end of the Link Road passes into the 250 zone at the Quobleigh Stream bridge crossing and will be subject to the extant licence mitigation;
- The Link Road passes through the Chalcroft Farm Pond GCN 250 zone and will be subject to GCN licence mitigation (licence to be submitted after grant of planning permission);
- Hazel dormouse are present in Foxholes Wood and the Link Road will sever the western end of the Wood (dormouse licence to be submitted after grant of planning permission);
- The three bridge crossings of streams and rivers on site and measures to retain wildlife mobility and safety across the road at these points (bats, dormice, otter, badger).

5 IDENTIFICATION OF 'BIODIVERSITY PROTECTION ZONES'

The following areas will be protected for wildlife and subject to access restrictions (see Access Plan in Appendix B):

- Northern GCN mitigation zone, containing ponds 91-96 and associated mitigation planting (see Figure F1 from GCN licence ref 2020-44604-EPS-MIT-1 ('Quobleigh GCN licence') and mitigation see Final development layout map J00445-F1 revision J 26.04.22 ('GCN licence plans'));
- The following SINCs: Quobleigh Wood; Hearts Copse, Chalcroft Distribution Park, Round Copse West End, Field North of Hearts Row West End and Treeline Break West End (see Appendix A Ecological Constraint Plans).
- The loss of bat foraging habitat across the site has been minimised through the retention of key high value habitats. These habitats will be protected and enhanced, with connectivity between these habitat areas and potential roost sites maintained both across the site and the wider landscape through the measures to protect these specific habitats (see Mitigation Table from ES, Appendix C, refs G, H, I, O & P)
- A number of watercourses run through the site, including main rivers (Moorgreen Stream, Quobleigh Stream) and ordinary watercourses (brook that runs through Foxholes Wood and along the northern edge of the proposed First Residential Parcel, FRP). These watercourses run eventually into the River Itchen SAC (and beyond that the Solent, which also is afforded a range of designations and legal protections), a European wildlife site for plant communities, fish communities, otter and the southern damselfly. These on site watercourses should be protected from damaging development impacts, including discharge of sediment and pollutants.

6 DETAILS OF BIOSECURITY ARRANGEMENTS, INVASIVE NON-NATIVE SPECIES CONTROL AND METHODS FOR PREVENTING THE SPREAD OF NON-NATIVE SPECIES

Biosecurity

The Link Road Project maintains a robust approach to biosecurity, focusing on avoiding factors and situations that increase the risks of spreading diseases, parasites and invasive non-native plants and animals (INNS).

The approach to biosecurity is summarized here.

Field equipment and materials will be stored and maintained in a separate location, split into lockable clean/dry and dirty/wet containers, with an outside yard and washdown area available for disinfection. The three key steps associated with Check - Clean - Dry and the guidance for Biosecurity in the Field (both on site and at any associated equipment storage depots) forms the cornerstone of the Biosecurity approach:

- Check - Check plant, equipment and clothing for living organisms. Pay particular attention to areas that are damp or hard to inspect.
- Clean - Clean and wash all plant, equipment, footwear and clothes thoroughly, preferably with hot water. If you do come across any organisms, leave them at the location where you found them.
- Dry - dry all plant, equipment and clothing - some species can live for many days in moist conditions. Make sure you don't transfer them elsewhere.

Prior to any site work, a biodiversity risk assessment will be completed, which includes consideration of background information (including client knowledge, GIS data, site records) to identify potential hazards, risk ratings and mitigation measures. Where specialist advice is required, this will be sought from professional external advisors and/or from other sources such as best practice guidance documents, the Defra and Non Native Species Secretariat website, other EU/UK advisory websites and from our clients where appropriate (e.g. Environment Agency).

The outcome of the biodiversity risk assessment feeds into a project task method statement that will be used to deliver a project/site induction with the use of tool box talks and registers of attendance. Any new members of the team (including sub-consultants and contractors) joining a project will have to complete the induction. Guidance and identification materials (e.g. of INNS) are made available as part of this induction. A biosecurity response plan is developed and procedures and any required equipment is always available on site as well as being prepared for the office/field depot.

Site work adopts a risk avoidance strategy where possible including:

- use of advanced knowledge or walkover surveys to ground truth biodiversity risks identified as being potentially present
- avoiding driving vehicles off road wherever possible to minimise transfer of soils/spores/seeds
- avoiding sensitive times of the year
- provision of the right equipment that is easy to manage
- following defined paths
- use of signage and barrier tapes, checklists, personal cleaning and disinfection, equipment isolation/ washing and disinfection facilities where possible, or isolation and handling at our field depot
- confirmation of safe and appropriate disposal pathways for potentially contaminated materials, cleaning and drying (48hrs) of personal protective equipment and sampling equipment.

Invasive species control and prevention of spread

Section 14(2) of the Wildlife and Countryside Act 1981 (as amended) states that “...if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence”.

Working Method and Control Measures

Small numbers of Invasive Non Native Species (INNS) including Japanese rose, Himalayan balsam (Quobleigh Stream and Woods), rhododendron and laurel (Quobleigh Woods) and Japanese knotweed (Chalcroft Farm) occur on the wide OHH Site. No INNS species have been recorded for the Link Road site.

However, in assessing the potential effects to the River Itchen SAC specifically, the main risk is from the spread of Himalayan balsam as a result of disturbance of plants causing seed to be released into the Fair Oak/Quobleigh Stream and carried downstream via the Allington Stream to the River Itchen SAC. Works proposed within the Fair Oak/QuobleighStream include a road crossing for the Link Road. Without adequate controls, these works have the potential to cause the spread of Himalayan balsam.

Only part of Fair Oak/Quobleigh Stream lies within the boundaries of the Link Road site. Himalayan balsam is currently an issue within the SSSI units comprising the River Itchen SAC downstream of the application site. Action is currently being taken by Eastleigh Borough Council with financial support from the Environment Agency and the support of fisheries owners and managers to control and eradicate this and other INNS. The invasive balsam is having an adverse effect on the natural species composition of bankside vegetation. Where this is occurring on carriers supporting southern damselfly, this is especially of concern since it can replace the marginal aquatic vegetation required for egg laying. However, the Borough Council Countryside Service reports that the main watercourses supporting populations of southern damselfly have not been affected.

The HRA of the adopted Eastleigh Borough Local Plan considered the likely significant effects from INNS on the River Itchen SAC and recommended that measures to control the spread of such species should be required for all new developments within 100metres of the river itself and any of its tributaries.

The submitted ES Chapter 10 Appendix 10.12 Landscape and Ecological Mitigation and Management Plan, proposes the avoidance and mitigation measures in relation to the control of INNS: see Table 3 below.

Construction activity should not cause such species to spread and specialist contractor's may be required to control/remove such species.

All the above species are invasive non-native species listed under Schedule 9 of the Wildlife and Countryside Act (as amended). Where present within and immediately adjacent to the working area, the contractor will remove the plants to ensure there is no risk of spread within the site prior to works commencing and dispose of it under an agreed procedure in accordance with relevant guidance from the Environment Agency (www.gov.uk). This needs to also be addressed through the contractors' RAMS.

Specialist contractor's may be required e.g. to control or remove Japanese knotweed.

Should other (or previously undetected) injurious and invasive plants or animals become suspected during works (mink have been recorded in the past), cease work and contact the environmental manager immediately. The significance of these invasive species will be highlighted in the induction and tool box talks.

Preventing the spread of Himalayan balsam

- Mechanical/physical control. Mechanical control, by repeated cutting or mowing, is effective for large stands, but plants can regrow if the lower parts are left intact. The plant must be cut below the lowest node to stop regeneration. Access to the sides of riverbanks can be difficult and inaccessible stands can quickly recolonise accessible cleared areas, so vigilance is needed if an area is to be effectively cleared. Regular grazing also suppresses this species. Small infestations (most common in gardens) can easily be controlled by hand-pulling as the species is shallow rooted. Padded gloves should be worn to avoid risk of injury to hands. Seeds are not very robust and only survive for up to 18 months so a two year control programmes can be successful in eradicating this plant if there is not further infestation from upstream or adjacent sites. To avoid additional spread do not disturb plants if seeds pods are visible (usually sometime after May). Programmes should be undertaken in April or early May. If hand pulling after this time, bag plant tops to prevent seed spread.
- Chemical control. Himalayan balsam can be controlled by spraying the foliage with glyphosate. The plants should be sprayed in the spring before flowering but late enough to ensure that germinating seedlings have grown up sufficiently to be adequately covered by the spray. Glyphosate is sold under a number of brand names. Small infestations and individual plants can be controlled by using glyphosate in a weed wiper. This has the advantage of preserving native plants and grasses which would otherwise be killed by the glyphosate. The herbicide 2,4-D amine controls many broadleaved annual weeds and may also be used to control this species but is not recommended for use near waterbodies. This selective herbicide will not kill grasses. It may be preferable to glyphosate in situations where the weed has not reduced complete cover of the grasses. A long-lance sprayer may assist in the spraying of less accessible areas out of the reach of conventional knapsack sprayers. Always follow health and safety procedures outlined by the herbicide manufacturer and take appropriate precautions when working near water.

Controlling rhodedendron

Current methods of management and disposal for *R.ponticum* include the following:

- Mechanical control: heavy machinery with long hydraulic arms are best for digging up the root material and crushing branches. Operator knowledge of the machinery and habitat is key to ensure the heavy machinery does not compact valuable forest flora and fauna. Mechanical clearance must be followed by repeated herbicide applications for at least two years to prevent re-sprouting and recolonisation (forestry.gov.uk, 2017). Chemical control: spray cut stems with chemicals, although surrounding vegetation may be affected by this. Bury the contaminated material deep within a landfill site.
- Disposal through production of biochar. This could be achieved by on-site charcoal production using modern portable reactors to reach optimum conditions. This can lead to a yield of 25-33% of the original material (forestry.gov.uk, 2017).
- Biological control: There are few natural enemies associated with *R. ponticum* even in its native range (cabi.org, 2017). Cabi is currently researching biological control, including the proposed use of a rust fungus from Portugal. This is currently being evaluated in other countries and is a possible cheaper, simpler alternative approach to chemical and mechanical control.
- Once *R.ponticum* has been removed from an area, a study by Maclean et al (2017) has shown that understorey plant community composition does not return to the state pre-invasion, even decades after the removal of *R.ponticum*. The overall conclusion from the study states that native plant communities showed no signs of returning to pre-invasion conditions up to thirty years after the removal of *R.ponticum*. It is suggested that restoration should focus on aiding the arrival of forbs and grasses under these circumstances, rather than altering the condition of the soil.

Japanese knotweed

A specialist Japanese knotweed contractor should be used to deal with this species. Within the wider site there are known areas of Japanese knotweed which are currently in year 2 of treatment.

Disposing of invasive species plant waste

Management of these invasive species must be undertaken in accordance with industry guidance such as the Ciria guidance document "Invasive species management for infrastructure managers and the construction industry (C679D)" and the SEPA document 'Biosecurity and management of invasive non-native species for construction sites and Controlled Activities'.

A significant fine can be levied or individuals sent to prison if contaminated soil or plant material from any waste being transferred is allowed to spread into the wild.

A specialist contractor will be appointed to undertake the works. The contractor will review and update this approach and provide all other supporting information, RAMS and certificates required to implement the INNS MS process. This may include the disposal of Japanese knotweed, Himalayan balsam, rhododendron and associated soil/sediment.

When invasive plants and soil contaminated with invasive plants is transported, the operator must make sure that the vehicle is covered or sheeted so that seeds and plant material cannot blow away. If contaminated soil or plant material is allowed to escape, you could be prosecuted and fined.

The operator must have waste transfer notes (WTNs) for any material leaving your site. It must list any material that contains invasive plants or their seeds on the WTN. The waste carrier can only take the waste containing invasive weeds to sites authorised to accept it. Plant material, or soil containing invasive plant material or seeds, is likely to be classed as non-hazardous but controlled waste - this is a different category from inert waste.

There is a duty of care for waste that affects all businesses. You must make sure that:

- waste is stored, handled, recycled or disposed of safely and legally by licensed individuals or businesses
- record all transfers of waste between your business and another business - using a WTN
- keep all WTNs, signed by both businesses, for at least two years
- record any transfer of special waste between your business and another business using a consignment note
- keep all consignment notes, signed by both businesses, for at least three years.

You must take waste plant material or contaminated soil to a site that has a relevant Environmental Permit or Waste Licence.

The conditions of the permit or licence must allow the disposal of invasive plants at the site. You should check with the waste site in advance to make sure they can accept material containing invasive plants.

The waste site may need notice so that an area can be prepared. For example, a landfill site will need an area away from the landfill liner for material containing invasive plants.

The contractor will:

- Follow the guidance set out in this INNS MS
- operate within the conditions in 'treatment and disposal of invasive non-native plants: RPS 178'
- have the relevant environmental permit

The following will not occur:

- dispose of Japanese knotweed, Himalayan balsam, rhododendron with other surplus soil
- sell soil contaminated with giant hogweed, Himalayan balsam, rhododendron as topsoil

Before the appointed contractor transfers contaminated waste it will:

- When the appointed contractor transfers the contaminated waste it will cover or enclose it in the vehicle so that no waste can escape.
- Should the appointed contractor transfer contaminated waste to a disposal site it will:
- brush vehicles down vigorously or jet-wash them to clear them of any giant hogweed, Himalayan balsam, rhododendron and associated soil/sediment before leaving site;
- inspect its vehicles to check there's no trapped pieces of plant or rhizome.

7 OUTLINE THE REQUIREMENTS FOR UPDATED ECOLOGICAL SURVEYS TO INFORM MITIGATION MEASURES AND THE TIMETABLE FOR EACH SURVEY

Guidance on the lifespan of ecology reports can be found in the CIEEM Advice Note³. This recommends the following:

- Less than 12 months – likely to be valid in most cases
- 12-18 months - likely to be valid in most cases with the following exceptions:
 - Where a site may offer existing or new features which could be utilised by a mobile species within a short timeframe (see scenario 1 example);
 - Where a mobile species is present on site or in the wider area, and can create new features of relevance to the assessment (see scenario 2 example);
 - Where country-specific or species-specific guidance dictates otherwise.
 - Report authors should highlight where they consider it likely to be necessary to update surveys within a timeframe of less than 18 months.
- 18 months to 3 years - A professional ecologist will need to undertake a site visit and may also need to update desk study information (effectively updating the Preliminary Ecological Appraisal) and then review the validity of the report, based on the factors listed below. Some or all of the other ecological surveys may need to be updated. The professional ecologist will need to issue a clear statement, with appropriate justification, on:
 - The validity of the report;
 - Which, if any, of the surveys need to be updated; and
 - The appropriate scope, timing and methods for the update survey(s).

The likelihood of surveys needing to be updated increases with time, and is greater for mobile species or in circumstances where the habitat or its management has changed significantly since the surveys were undertaken. Factors to be considered include (but are not limited to):

- Whether the site supports, or may support, a mobile species which could have moved on to site, or changed its distribution within a site;
- Whether there have been significant changes to the habitats present (and/or the ecological conditions/functions/ecosystem functioning upon which they are dependent) since the surveys were undertaken, including through changes to site management;
- Whether the local distribution of a species in the wider area around a site has changed (or knowledge of it increased), increasing the likelihood of its presence.
- More than 3 years - The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated (subject to an assessment by a professional ecologist, as described above).

Table 2 below sets out when each survey was last undertaken and recommends further action if required.

Table 2 Link Road Ecology Survey Review

Species/ group/ survey type	Dates of previous surveys	3 years date when repeat surveys needed	Update surveys required? Date	Rationale
1.Extended Phase 1 Habitat Survey	July/ August 2018; August 2019; July/ August 2020 October 2020 (part)	Aug/Oct 2023	Yes Sept 2022	Whilst an update is not required until 2023, an update walkover survey has been conducted of the wider OHH site, including the Link Road, in Sept 2022. This has established whether there are any significant differences in baseline habitats since previous surveys and provide comments on current land management practices. It has also provided updated information on fields signs or potential for protected species such as badgers and otters.

³ Advice Note on the Lifespan of Ecological Reports and Surveys, CIEEM April 2019.

2.River habitats and fish habitats	July 2020	July 2023	No	No changes to site layout or management. Updated survey 1 has assessed any changes and concluded that previous results remain valid for 2022.
3.Bat activity surveys (transects and automated detector surveys, radio tracking, trapping)	July to October 2018, April to June 2019, May 2020 Radio tracking summer 2020 Trapping Aug 2018, Aug 2020	2023	No	No changes to site layout or management. Updated survey 1 has assessed any changes and concluded that previous results remain valid for 2022.
4.Bat crossing point surveys	June to September 2019 and June to September 2020	Summer 2023	No	No changes to site layout or management. Updated survey 1 has assessed any changes and concluded that previous results remain valid for 2022.
5.Roosting bat surveys: buildings	Northern licence buildings: inspections 2018 and May 2020; emergence surveys Aug/Sept 2018 and July/Aug 2020 Southern licence buildings: inspections Aug 2018 and Feb 2021; emergence surveys 2018 and June 2021. Updates on Chalcroft Farm July-Aug 2022 Fir Tree Farm House Internal building inspection June 2022 Victoria House. Internal building inspection June 2022	Buildings have been demolished under licence or set to be. Fir Tree House and Victoria House – action to be agreed depending on proposed works.	No. Buildings not impacted by Link Road.	N/a
6.Roosting bat surveys: trees	Tree emergence surveys August/ September 2020 Tree climbing inspections of moderate or high potential trees Oct 2020 Ground based assessment updated Dec 2021 Quobleigh crossing alders inspected and resurveyed spring 2022.	Emergence 2023 most Ground level tree assessment 2024 Quobleigh crossing 2025	No	No changes to site layout or management. Updated survey 1 has assessed any changes and concluded that previous results remain valid for 2022.
7.Great crested newt surveys	May 2019 (pond HSI); May/ June 2019 (presence/ absence and population class) May-June 2021 presence absence surveys May-June 2022 presence absence surveys	2025	No	Surveys updated in 2022.
8.Otter and water vole surveys	September/ October 2018; July 2020	July 2023	No	No changes to site layout or management. Updated survey 1 has assessed any changes and concluded that previous results remain valid for 2022.
9.Dormouse surveys	July to November 2018; August to November 2020	Summer 2023	No	A dormouse licence is being produced for the Link Road severance of Foxholes Wood. Dormouse monitoring to support EPS licence to commence in Sept 2022 and extend throughout construction in 2023.
10.Bird surveys	April to June 2020 (breeding bird surveys); April to July 2020 (barn owl surveys)	Spring/summer 2023	No	No changes to site layout or management. Updated survey 1 has assessed any changes and concluded that previous results remain valid for 2022.
11.Badger surveys	November 2018; September 2019; September 2020	Sept 2023	No	Badgers are notorious for moving into areas relatively quickly. Whilst there was no activity up to 2020, there has been badger sett activity in the extreme SE noted in 2022. on the site on the

				new road embankments. The site walkover update (see 1 above), has surveyed for any new badger activity across the site and concluded that previous results remain valid for 2022.
12.Reptile surveys	September 2018; September 2020	Sept 2023	No	No changes to site layout or management. Updated survey 1 has assessed any changes and concluded that previous results remain valid for 2022.

8 INCLUDE A BIODIVERSITY NET GAIN PLAN BASED ON CURRENT DEFRA ADVICE WHICH ENABLES DELIVERY OF A SITE WIDE MINIMUM OF +10%

A Biodiversity Net Gain (BNG) assessment has been undertaken following the DEFRA 2.0 Biodiversity Metric, informed by a suite of detailed Phase 1 Habitat Survey carried out by Johns Associates in July/August 2018 with additional areas surveyed and revisited as required through 2019, 2020 and 2021 (as described in detailed in Chapter 10 Appendix 10.2 – Phase 1 Habitat Survey of the Ecology Chapter of the ES).

Appendix D contains Appendix 10.13 Biodiversity Net Gain of the ES Addendum submission which sets out the approach to BNG for the Link Road and contains the relevant Figures referred to below (baseline and post construction habitats are also shown as Figures 2 and 3 in this EMMP above).

The revised metric calculations show that:

- the Outline Planning Application (OPA) development will deliver a minimum value of +7.68% in habitat units and +10.26% hedgerow units (excluding GCN habitat area, Figure 2 of Appendix D) but has the potential to deliver >10% BNG for both habitats and hedgerows within the red line boundary (Figure 3 of Appendix D). The revised figure including the link road detailed design and revised estimates for in parcel amenity grassland show a delivery of +14.27% habitat units and +12.94% hedgerow units (Figure 11 and Figure 12).
- The Link Road will deliver 11.3 habitat area units (+49.03%) and -5.9 hedgerow units (-61%) (Figure 7, Figure 8, Figure 9, Figure 10 and Figure 14). The hedgerow losses are compensated by new planting within the OPA boundary to give the total hedgerow net gain described above.
- [Phase 1, the First Residential Parcel (FRP), will deliver +12.22% habitat area units and +22.9% hedgerow units]

Figure 4 DEFRA Metric 2.0 Summary Table - Chalcroft Avenue (Link Road) Updated December 2021. Hedgerow measures delivered within wider OPA

Net project biodiversity units (including all on-site & off-site habitat retention/creation)		<i>Habitat units</i>	11.30
		<i>Hedgerow units</i>	-5.90
		<i>River units</i>	0.00
Total project biodiversity % change (including all On-site & Off-site Habitat Creation + Retained Habitats)		<i>Habitat units</i>	49.03%
		<i>Hedgerow units</i>	-61.00%
		<i>River units</i>	0.00%
On-site habitat retention and enhancement			
	Habitats	Hedgerows	Rivers
Total site area / length	7.23	0.55	0.00
Total site units	23.05	9.68	0.00
Area / length retained	0.34	0.09	0.00
Units Retained	2.35	2.05	0.00
Area / length enhanced	4.31	0.00	0.00
Baseline units enhanced	10.86	0.01	0.00
Area / length succession	0.00		
Units succession	0.00		
Area / length lost	2.58	0.46	0.00
Units lost	9.84	7.62	0.00
a lost by distinctiveness b			
Category	Area lost (hectares)	Area lost (%)	
V.High	0		
High	0.2	8	
Medium	0.17	7	
Low	2.18	85	
V.Low	0		

This has been calculated on the following basis:

- Feedback from the Principal Advisor on Net Gain for Natural England supports the use of the Great Crested Newt (GCN) mitigation areas for the purpose of BNG. The GCN mitigation area has the potential to contribute a further 6.18% BNG and is already at an advanced stage of delivery.
- The current total for the OPA uses an estimate for the “in-parcel” delivery of habitats (primarily vegetated gardens, amenity grassland and street trees) based on the detailed designs of Phase 1 FRP (Table 1 OPA In Parcel Habitat Creation Calculations). As, due to its specific circumstances, this is one of the densest parcels, this is a very precautionary approach and is therefore likely to underestimate the extent of habitat provision in subsequent parcels. Therefore, there is significant scope to increase this value through positive ecology/landscape led design up to, and possibly exceeding, a 10% overall net gain.
- An identical approach is taken to hedgerows (considered separately in the metric as linear features) to deliver a minimum of 10% BNG. This figure excludes hedgerows in the GCN mitigation area and other opportunities for new hedgerows (such as the landscaping of the link road) but includes in-parcel hedgerows— subject to detailed design, again estimated based on phase 1).
- River habitats are excluded from the BNG metric at this stage as a more detailed assessment has been conducted to support the EIA and this will be applied once further detail is available on the construction of the link road.
- The site habitat succession feature has not been used in these calculations
- SuDS as ecological features. Despite the inclusion of ecologically valuable SuDS, these features have been included using the standard SuDS allocation provided within the calculator tool only rather than allocating higher wetland habitat values.

Consultation with the EBC Ecologist Phil Lomax on 19 April 2021 provided support for this approach, and in line with received advice, the calculations include BNG ranges to demonstrate that:

- The development will deliver a positive BNG on site of at least 7%
- The OPA could achieve +10% BNG for both habitat areas and hedgerows subject to the sensitive design of subsequent parcels and a coordinated approach to BNG assessment and delivery
- This would be supported by a detailed habitat specification and relies on a detailed LEMP to deliver habitats of the target type and condition.

It is therefore clear that the application demonstrates a net biodiversity gain, as calculated using the DEFRA Metric 2.0.

Each phase will effectively deliver biodiversity net gain through an appropriate allocation of the biodiversity units but this will be subject to a full assessment using the DEFRA2.0 calculator as this was the basis of the masterplan design and was current at time of submission. It is envisaged that DEFRA 2.0 will be used to assess the delivery of BNG during the detailed design of the individual phases of the masterplan as these are delivered to report against the actual delivery against the estimated BNG value as described in this assessment. This is in accordance with guidance issued by Natural England regarding projects that have been designed using 2.0 and for which 2.0 was the current version at time of submission:

“Users of the previous Biodiversity Metric 2.0 should continue to use that metric (unless requested to do otherwise by their client or consenting body) for the duration of the project it is being used for as they may find that the biodiversity unit values metric 2.0 generates will differ from those generated by Biodiversity Metric 3.0” Natural England⁴

It is also envisaged that a cumulative assessment will be provided to inform the net position to inform each phase design and planning submission.

The application of this assessment and the principles of the delivery and allocation of BNG throughout the phases of this development has been subject to regular consultation with the project Ecological Steering Group (comprised of Natural England. This approach allows for the delivery of new and compensatory habitats in advance of construction phases, in accordance with ecological best practice, to minimise the time between habitat loss and the provision of functional replacement and enhanced habitats within the wider site. There is an acknowledgement that each development phase may not be able to deliver a net gain within the phase boundary and allows flexibility to deliver the required measures for any given phase within the wider ‘site’ to create larger and more diverse areas of habitats in more appropriate locations.

9 IDENTIFY WHERE PROTECTED SPECIES LICENCES WILL BE REQUIRED TO ENABLE THE PROPOSED DEVELOPMENT TO PROCEED LAWFULLY

The following protected species licences in place for the wider OPA will be required for the Phase 3 Link Road:

- GCN licence ref 2020-44604-EPS-MIT-1 (‘Northern/Quobleigh GCN licence’). See Appendix E for mitigation plan area. Licence modification approved 2022 for access road spur down to Quobleigh Stream;
- IN PREPARATION: Hazel dormouse licence for Foxholes Wood (Segment 3 road severance).
- IN PREPARATION: GCN licence for Chalcroft Farm Pond (‘Southern population’).

The following licences are in place for the wider OPA development, but not required for the Phase 3 Link Road:

- Bat licence 2021-52226-EPS-MIT-1, OHH Northern Building Cluster, brown long-eared (satellite roost), whiskered, Soprano pipistrelle, common pipistrelle (all day roosts),
- Bat licence 2021-52266-EPS-MIT, Southern Building Cluster, brown long-eared, Soprano pipistrelle, common pipistrelle (day roosts). Buildings to be demolished in phases 2021-2023);
- IN PREPARATION: Modification/ new bat licence for remaining Chalcroft Farm building demolition; will include provision of new replacement bat house for maternity colony of brown long eared bats in Pond Cottages.

⁴ Natural England – Access to Evidence - The Biodiversity Metric 3.0 (JP039)
<http://nepubprod.appspot.com/publication/6049804846366720> accessed 30/07/2021

10 MITIGATION

The practical measures (both physical measures and sensitive working practices) needed to avoid or reduce impacts during Link Road site clearance and construction including the location and timing of sensitive works to avoid harm to important biodiversity features (including relevant method statements) are set out below.

10.1 MITIGATION RATIONALE

Johns Associates Ltd has undertaken a range of protected species surveys within the local area to inform the Link Road proposal and the wider OPA development and the baseline is reported in full within Chapter 10 (Biodiversity) of the EIA.

All landscape and ecological maintenance work will be carried out in a manner that will avoid potential legal offences and harm to ecological receptors that may be present on site. Any potentially harmful maintenance operations are to be performed with awareness of, or take place outside, the most ecologically sensitive periods, while providing the management necessary to maintain and increase the biodiversity value of the site.

All construction and maintenance operators and contractors will make themselves aware of all ecological constraints, drainage runs and services etc prior to commencing maintenance operations. They shall maintain access to all/any manholes/drainage hatches, soakaways, etc.

The principal seasonal ecological constraints of protected species are provided in Table 3 below.

10.1.1 Great Crested Newt

Great crested newt (*Triturus cristatus*) surveys were completed in 2019, 2021 and 2022 by Johns Associates. Evidence suggests that high quality terrestrial habitat up to 100m from a breeding pond comprises the locations where great crested newt is most likely to be found, although the species can be found at locations further away from a pond than this.

A medium population of GCN are found in the Northern sector centered around Wyvern Pond (off site to NE). The Ecological Constraints Map North shows a 250 GCN licence area centered on ponds associated with the neighbouring residential development off Allington Lane (these ponds have since dried up or become too vegetated for survey). Six new compensation ponds have been created on site just south of Allington Lane as part of the GCN licence. A modification to the original licence was obtained in 2022 to cover the extension of the Link Road access from the roundabout on Allington Lane down to Quobleigh Stream (see mitigation plan at Appendix E). No further measures will be required in this area in relation to site clearance works.

In the southern sector, presence of GCN was confirmed in the Chalcroft Farm Pond in 2019 with a peak count of 5 adults. Breeding in this pond was confirmed during egg searches conducted in 2019. Whilst there was no evidence of breeding in 2021, GCN were again present as a low population in 2022. Mitigation measures are required in relation to the construction of the Link Road within the 250m GCN zone.

10.1.2 Bats

Johns Associates have carried out a series of bat surveys across the wider OPA Horton Heath Site in 2018, 2019, 2020, 2021 and 2022. Ten species have been confirmed to be present on Site through various surveys carried out:

- Barbastelle: A very low levels of activity was recorded through static detector surveys, however; this species was recorded at all detector locations and in all months with the exception of May.
- Serotine: No roosts identified on site. Low activity levels observed.
- Brown long-eared: Two maternity roosts present on site (Fir Tree Farmhouse and Chalcroft Farm). Fir Tree Farmhouse (Northern Colony) – static data indicates that these bats are using the two main connective habitats leading both north and south across Fir Tree Lane from the Farmhouse, presumably to the highly suitable foraging habitats in Quobleigh Wood and the central/western stream corridor respectively (ST11 and ST12). Two Post lactating female BLE and one adult male were caught in Quobleigh Wood in August 2020. Chalcroft Farm (Southern Colony) – Maternity roost present in Pond Cottages to the north of Chalcroft pond. Additional satellite roosts identified in tree in Hearts Copse and within the stables building (A6). Key supporting habitats are considered to be Hearts Copse (offsite) with the marshy grassland and riparian corridor of the southwest and western areas of the site. Key connective corridors are the hedgerows to the south and the riparian corridor to the north and west of Chalcroft Farm.

- Natterer's: One roost record on site in Building B18 in 2018. This building has subsequently been demolished under licence. This genus is represented at all locations sampled.
- Daubenton's: No known roosts present on site. Anecdotal observation of two Daubenton's bats entering oak tree in parkland south of Chalcroft during trapping surveys.
- Nathusius pipistrelle: mostly recorded in October.
- Noctule: Tree 19 (an Ash next to the pond at Chalcroft Farm) has been confirmed as a mating roost.
- Common pipistrelle: Day roosts present in Northern and Southern Building clusters. Common pipistrelle were recorded at high levels at all static locations.
- Soprano pipistrelle: Day roosts present in Northern and Southern Building clusters. The median bat passes per hour per month found April recorded the highest level of recordings with the lowest number of recordings in May and then a similarly low level of recordings for the remaining months. They were caught in all years and at all locations during trapping.
- Whiskered. Roost in Northern building cluster.

Demolition of buildings containing bat roosts is being undertaken under EPS licences, with replacement bat roosts being erected in trees to be retained (no buildings are being impacted by the Link Road development).

A new replacement bat house (for brown long eared bats from Pond Cottage) is being installed near Hearts Copse.

An updated ground based tree assessment for bat potential was undertaken in December 2021 (see Appendix F) with further confirmation of no change completed as part of the September 2022 Phase 1 Update Survey completed by Johns Associates. No trees with roosting bat potential will be felled or impacted unless prior approval is obtained from an ecologist.

Whilst bats are not at specific direct risk during these works, they are sensitive to light and lighting of the site during construction has the potential to temporarily affect the behaviour and availability of foraging and commuting habitats for bats.

There are several hedgerows and woodland edge habitat that will be used by foraging and commuting bats. The addition of the new species rich hedgerows will ensure further landscape connectivity and provide foraging habitat for these species.

Specific mitigation measures have been included for the three locations where the Link Road passes over watercourses as follows:

- Quobleigh Stream crossing. A 20m zone where road lighting will be reduced to 1 Lux or less. Structured vegetation planting to maintain bat foraging and commuting route along Quobleigh Stream. Road bridge design to maintain connectivity under bridge for Daubenton's bats.
- Foxholes Wood stream crossing. A darker area of less than 1.0lux for 10m stretch centred on middle point of bridge, i.e. 5m in both directions north and south. Plus a wider area of less than 5.0lux for 30m to keep the general woodland link of Foxholes Wood dark, i.e. 15m either side of central point of bridge, north and south. This woodland connectivity is especially important for brown long eared bats which have satellite roost in the area.
- Southern bridge. A darker area of less than 1.0lux for 10m stretch centred on middle point of bridge, i.e. 5m in both directions north and south. Plus a wider area of less than 5.0lux for a 35m width to keep the wetland link and in particular the northern hedgerow dark, this would stretch from the bridge northwards to include the northern hedgerow that comes in from the east, running along the southern edge of the solar park. This corridor is important for brown long eared bats which have satellite roost in the area, serotines and noctules.

Road crossing bat surveys were undertaken to determine whether bats are using regular flightpaths to cross current habitat that will be severed by the Link Road construction and therefore to enable prediction of the impacts of the proposed road across the site from north to south. Results are set out in the Bat Appendix to the ES

10.1.3 Reptiles

Johns Associates Ltd have carried out reptile surveys in areas of suitable habitat across the OPA site, including the Link Road site in September 2018 and an update survey was completed in September 2020 that focussed on areas of suitable reptile habitat that are most likely to be affected by the development proposals. No reptiles were recorded for the Link Road site. Further confirmation of no change in habitat condition/suitability has been completed as part of the September 2022 Phase 1 Update Survey completed by Johns Associates.

A precautionary Reptile Method Statement has been issued for works that may affect suitable reptile habitat (see Appendix G).

10.1.4 Hazel dormouse

Historic survey results from Ecologica in 2014 and Johns Associates in 2018 found no evidence of dormouse across the Site. The results of an updated survey conducted in 2020 confirmed the presence of one live dormouse and candidate dormice nests within Foxholes Wood, the central woodland belt which will be impacted by the Link Road passing through its western edge, on site during the November 2020 survey visit.

Woodland habitat potentially suitable for hazel dormouse at the wider OPA are the ancient woodland blocks to the north and south of the site and the network of hedgerows that border and traverse the Site.

The network of hedgerows across the site have undergone regular management resulting in species poor hedges that provide little in the way of important food or dispersal corridors between these woodlands.

Habitat suitability would indicate likely dormouse presence within the woodlands but only a small population due to the habitat isolation and the limited connectivity for the exchange of animals between local populations.

10.1.5 Otter

No otter have been recorded on Site, however the River Itchen SAC located off site and to the west is designated partly due to otter presence. Measures to reduce impact on otter should they colonise the site in future are set out in the Table below.

10.1.6 Badger

No records of badger were recorded in badger surveys on site 2018-21. Recent evidence of badger activity has been recorded on the southern access embankments. No further changes have been recorded. Measure to minimise impact on badgers is set out in the table below.

10.1.7 Nesting Birds

A range of typical woodland, hedgerow and farmland birds are associated with the Link Road site, typically breeding between 1st March and 31st August, inclusive. All active birds' nests are protected under the Wildlife and Countryside Act (WCA, 1981, as amended). One specially protected bird (Schedule 1 WCA), barn owl, has been recorded on site: these species have additional protection from disturbance whilst at the nest. No further changes have been recorded.

Hedgerow removal is of particular relevance to potential effects on nesting birds, with the sensitive timing of works vital to avoiding impacts to nesting birds.

10.1.8 Invasive species

Small numbers of Japanese rose, Himalayan balsam (Quobleigh Stream and Woods), rhododendron and laurel (Quobleigh Woods) and Japanese knotweed (Chalcroft Farm) occur on the wider OPA site, but are not recorded for the Link Road site. Mink have been recorded in the past. Construction activity should not cause such species to spread and specialist contractor's may be required to control/remove such species.

10.1.9 Watercourses including River Itchen SAC

The main and ordinary watercourses that flow through the site (Moorgreen Stream, Quobleigh Stream etc) all feed eventually into the River Itchen which is a protected Special Area of Conservation (SAC) for its vegetation, fish, invertebrate and otter populations.

It is imperative that any construction activity strictly follows the Construction Environment Management Plan (CEMP) and prevents sediment loss (and the discharge of other pollutants) into the on site watercourses.

The Link Road includes three crossing points (bridges) over the watercourses.

10.1.10 SINC's and Habitats

Various SINC's occur on or adjacent to the site, plus there are various habitats that are subject to buffer zones. These are all shown on the Ecological Constraints Maps (see Appendix A).

10.2 MITIGATION MEASURES

The following mitigation measures are required (see Table 3 below) and relate to the mitigation map in Appendix C.

Table 3 Ecological Measures Summary

Receptor	Constraint	Sensitive Period	Action
Great crested newt	Suitable refugia present	Hibernation period: November–February inclusive	Measures to prevent entrapment in drainage systems and connectivity across roads Habitat connectivity will be maintained through the designation, enhancement and long-term management of ecological connective corridors to maintain the landscape permeability both on and across the site for amphibians/reptiles. Measures will also be incorporated in road designs at key severance locations to facilitate safe passage to avoid collision mortality and entrapment risk. An amphibian tunnel is proposed north of Chalcroft Farm to maintain current and future connectivity to the relict Chalcroft Farm breeding pond with the healthier northern breeding pond network. General Key amphibian habitats have been avoided and will be protected and enhanced. Where valuable amphibian habitats must be affected, appropriate measures will be implemented to ensure that animals are protected during construction and that there is no detrimental effect on the favourable conservation status of the populations present on site. These measures include: Implementation of a series of linked Natural England EPS licences coordinated through the implementation of a great crested newt masterplan (currently GCN licence ref 2020-44604-EPS-MIT-1 'Quobleigh GCN licence') Avoidance measures to minimise areas of habitat loss and to maintain habitat connectivity Sensitive approach to vegetation clearance including consideration of timing, duration and methodology. This will employ measures of phased vegetation removal in accordance with best practice under a detailed method statement. Exclusion from working areas until works have ceased and habitat reinstated Capture from exclusion areas and translocation to retained receptor habitat Conservation of the southern low size class Chalcroft population within the single poor quality pond (to be enhanced) and associated poor quality and disturbed terrestrial habitat to newly created ponds with high quality terrestrial habitat. Chalcroft pond will be retained and restored, including connectivity for great crested newt to thrive in the southern habitat. Measures to prevent entrapment in drainage systems and connectivity across new Link Road – in GCN tunnel Provision of enhanced terrestrial habitat and a network of created and restored ponds and wetlands, together with resting and overwintering habitats Habitat compensation and enhancement measures will be delivered in accordance with industry best practise ensuring compliance with policy and legislation. Key elements of GCN mitigation will be delivered under EPS mitigation licences, as appropriate, with additional elements of the development delivered under a non-licensable method statement where the likelihood of an offence is negligible. Measures have been incorporated into the masterplan to minimise risk and disturbance to the populations present and to facilitate the recolonisation and natural dispersal/recolonisation of the population across the site post construction to new wildlife ponds constructed to appeal to breeding GCN via a comprehensive network of suitable connective habitats linking existing populations to these new features. All habitats managed for amphibians/reptiles will be subject to a detailed long-term management plan. <u>Areas within GCN 250m zones to be cleared:</u>

			Vegetation will continue to be managed short by grazing or cutting until works commence. No introduction of material that could form potential resting/overwintering habitat will be permitted. Above ground hedgerow material will be removed to a height of 300mm before weather conditions typical of hibernation to avoid potential disturbance to amphibians resting or overwintering in features associated with the hedgerow base. The timing of works will be subject to agreement with the Project Ecologist. An SQE will conduct a detailed inspection of any hedgerows to be removed prior to works, identifying areas of suitable features and assigning a risk category. Where works are considered highly sensitive, an experienced and licenced Ecological Clerk of Works will supervise the works. Arisings will be chipped and removed from site with larger logs used to create refugia. These will be placed directly into the refugia locations and not stockpiled elsewhere. The stumps will be directly treated with a suitable herbicide to prevent re-growth with care taken to avoid non target drift onto retained vegetation. Trees can be felled carefully and without a GCN licence provided no overwintering or resting habitat is affected. Material will be removed and processed immediately after felling to avoid risk of creating potential refuge habitats and injury. Below ground material will be removed under licence between March to October inclusive subject to air temperatures at night being above 5 degrees Celsius. Construction work within GCN 250m zones will proceed under EPS licence measures (check licences for details).
Reptiles	Suitable habitat and refugia present. No reptile records on Link Road route in Johns 2020 reptile surveys.	Hibernation period: November–February inclusive	Given no reptiles were recorded in 2018 and 2020 on the Link Road route, then no mitigation measures are required. However, suitable reptile habitat exists on the Link Road route, e.g. the marshy grassland south of Foxholes Wood and other field and woodland edges. Therefore, the following precautionary approach is still recommended. Timing of works: Vegetation clearance works should be carried out within the active season for reptiles (March–October inclusive) to avoid the disturbance of hibernating animals which are unable to move away from the development area. No removal of suitable refuge habitat will be undertaken when overnight temperatures are consistently (for five consecutive nights) below 5°C, to remove the risk of disturbing hibernating reptiles. Pre-works phase. An ecological toolbox talk will be delivered prior to any works. Prior to the commencement of works the working footprint will be agreed and demarcated on site to include vehicle access areas, material storage, skip and materials handling areas associated with the demolition works. This working footprint will be minimised and designed with the contractor to avoid any unnecessary impacts on suitable reptile habitats. Where suitable habitats are present within the agreed works area, a two phased cut of any habitat considered it be suitable for reptiles, such as tussocky grass, will be conducted to prepare the working area. The first cut will be to approximately 30cm in order to encourage any reptiles present to move out of the area. The area will then be left to settle and a subsequent cut to 15cm will follow. A suitably qualified ecologist will lift and remove any potential reptile refugia from within the working area. The vegetation will be maintained in an unsuitable condition for the duration of works. Works phase. Prior to the movement of any machinery into the working area, a check by a suitably qualified ecologist will be carried out to ensure no animals are likely to be harmed. Wherever possible demolition machinery will work from areas of hard standing adjacent to the buildings and then move onto the building base as the demolition progresses.

			Response: If reptiles are found at any stage of the vegetation clearance works, they will be encouraged to move off of their own accord into the surrounding retained habitat.
Nesting birds	Potential nesting habitat present throughout site.	Nesting period: 1 st March -31 st August (inclusive)	No vegetation clearance/ building demolition within bird nesting season. Habitats requiring works during the nesting season (1st March-31st August inclusive) will be subject to a pre-works nesting bird check with measures implemented to protect any active nests likely to be affected by the works. Where areas of suitable nesting habitat for valued bird species is lost (including sparrow, starling and swift), suitable alternative nesting habitat will be provided on site through a network of bird boxes features incorporated to buildings, new tree and shrub planting and enhanced grassland, woodland, wetlands Barn owl. The existing barn owl nest box will be relocated into the area in the vicinity of Hearts Copse (>600m from link road) to reduce road collision risk associated with the Link Road. Sections where the Link Road is situated on an embankment present the highest risk followed by sections at existing ground levels. In these areas, the creation of vegetation planting (trees and shrubs) which force birds to fly higher across roads have been incorporated into the scheme. Verges south of the link road will be maintained in a short, thatchless condition to reduce the potential for field vole. Enhancement of grassland habitats and hedgerow buffers for small mammals will provide additional foraging resource for barn owl to compensate for the loss of low value foraging habitats. Landscape drawing DD508L13A_Landscape General Arrangement 3 of 5) shows: Proposed native shrub planting on eastern embankment of Toll Bridge Large tree planting on all four 'approaches' of the bridge (NE, NW, SE, SW) Proposed native hedgerows for 3 approaches to bridge (NW, NE and SW) and Retention of hedgerows to the west of the bridge These measures should ensure that barn owl do not forage low in the vicinity of the road where it crosses the stream. Road speeds reduced to 30mph will also assist in minimising road mortality for this species.
Bats - roost loss	Construction phase –	Spring-Autumn	No bat roosts are impacted by the Link Road proposals. The removal of mature trees has been minimised through careful masterplan layout. Where trees containing potential roost features are retained, these will be protected by the buffer specifications as described for hedgerows (O & P) and woodland (G) (see Appendix C). Where trees with potential roost features are required to be removed, a precautionary principle will be applied that assume the presence of the most likely roost type for the feature. This is considered appropriate as tree roosts are dynamic and can be readily occupied/abandoned by a variety of species at any given time, making firm assessment of the roost types present particularly challenging. Mitigation and licensing requirements will therefore be informed by subsequent inspections prior to any impacts on these features. Alder trees G73, G74, G75 at Quobleigh stream crossing to be soft-felled if required to be removed. See Construction Environmental Management Plan (CEMP) Phase 3 Link Road (ref OHHP3RoadCEMP/BJM032022, March 2022) Should task specific lighting be required, this should be limited to within the hours of 0700-1800 spring-autumn.
Bats - Bat Habitat Severance/Road - Collision Mitigation	CONSTRUCTION AND OPERATION – ALL PHASES	Spring-autumn	Three locations where the link road severs high value foraging and connective habitat have been identified on site that present a traffic collision risk to bats. Landscape planting has been designed to encourage bats to go 'up and over' the bridge crossings rather than cross the roads under the bridges. Risk to bats will be minimised by the following measures: Minimising habitat loss in these areas by designing the road approach to the habitat in a perpendicular orientation; Minimising the width of the road crossing;

			Clear span design over waterway; Incorporation of suitable measures to ensure safe crossing following the most recent research into the efficacy of such measures to minimise road collision mortality; Bridge heights from stream bed to underside of span are between 1.5 to 3m: these may allow riparian affiliated species such as Daubenton's to pass under the bridge, and landscape planting will encourage bats to pass up and over the road safely; Where roads cross existing areas used by bats to migrate through the site, stretches of road will be left unlit to provide corridors of no more than 1.0 lux for commuting bats Additional compensatory habitat may be required; Restricting the speed limit to 30mph Whilst significant vegetation will be retained either side of the construction areas in these locations to encourage the use of underpasses for species such as Daubenton's, bats would pass up and over the road safely via appropriate 'up and over' tree and shrub planting (see Landscape General Arrangement Drawings DD508L11A, 12A and 13A). Measures include: Retention of existing trees on both sides of bridge crossing where possible (loss of some trees in dead or poor condition) and new tree planting on both sides of bridge crossings, to create up and over crossing for bats at height New native shrub planting on embankments New native hedge planting Bat Lighting Mitigation Specific design measures have been included as a key design principle to keep additional lighting to a minimum across the site. Specific mitigation measures have been included for the three locations where the Link Road passes over watercourses as follows: Quobleigh Stream crossing. A 20m zone where road lighting will be reduced to 1 Lux or less. Structured vegetation planting to maintain bat foraging and commuting route along Quobleigh Stream. Road bridge design to maintain connectivity under bridge for Daubenton's bats. Foxholes Wood stream crossing. A darker area of less than 1.0lux for 10m stretch centred on middle point of bridge, i.e. 5m in both directions north and south. Plus a wider area of less than 5.0lux for 30m to keep the general woodland link of Foxholes Wood dark, i.e. 15m either side of central point of bridge, north and south. This woodland connectivity is especially important for brown long eared bats which have satellite roost in the area. Southern bridge. A darker area of less than 1.0lux for 10m stretch centred on middle point of bridge, i.e. 5m in both directions north and south. Plus a wider area of less than 5.0lux for a 35m width to keep the wetland link and in particular the northern hedgerow dark, this would stretch from the bridge northwards to include the northern hedgerow that comes in from the east, running along the southern edge of the solar park. This corridor is important for brown long eared bats which have satellite roost in the area, serotines and noctules. Where lux levels must exceed 0.5 lux on any valuable retained or created habitat, a further detailed assessment of the lighting design to include wavelength, directionality and duration/timing of lighting will be conducted to inform lighting design for each phase of development to ensure no deleterious effect on affected habitats. The three bridge crossings where bat habitat is severed will be kept unlit.
Bats - Bat Loss/degradation of foraging habitat Mitigation	CONSTRUCTION AND OPERATION – ALL PHASES		The loss of foraging habitat across the site has been minimised through the retention of key high value habitats. These habitats will be protected and enhanced, with connectivity between these habitat areas and potential roost sites maintained both across the site and the wider landscape through the measures to protect these specific habitats (see Appendix C, refs G, H, I, O & P).
Hazel dormouse	CONSTRUCTION		Link Road works passing through Foxholes Wood to be subject to EPS licence and agreed mitigation. Above ground vegetation clearance in this area can be undertaken in winter; works to remove tree roots and ground vegetation can only be undertaken between May and October, under the EPS licence, i.e. when the dormice are active.

			Design of the new Link Road bridge over stream in Foxholes Wood includes both a mammal tunnel and a mammal ledge, which, together with the enhanced planting, dark conditions and short distance will maintain suitable connectivity for dormouse. The efficacy of this will be demonstrated by dormouse box monitoring (50 boxes). Further suitable connectivity measures would be provided should dormouse not be recorded within 5 years, either side of the bridge, in consultation with Natural England and Eastleigh Borough Council. Avoidance of hedgerow severance within 150m of confirmed records (currently only within Foxholes Wood north of solar farm). Provision of replacement woodland adjacent to key retained woodland corridor to ensure no net loss of habitat and to maximise availability of food plants throughout the active part of the year.
Otter	CONSTRUCTION AND OPERATION – ALL PHASES		Watercourse road crossing points locations to be designed as single span over watercourse to facilitate continuation of hydrological regime and landscape permeability for terrestrial mammals including otter. Mammal ledges to be provided under each bridge and mammal tunnels to be constructed through embankment next to crossings (for mammal use in times of flood), see bridge designs 10413-SEG3-1000 – 1002 (Reuby and Stagg 2022). 10m minimum construction buffer to all watercourses. Use of well services plant and adoption of best practice standards for noise/vibration. No illumination of watercourse corridors from construction and minimal operational lighting. Ongoing monitoring for otter during the construction period to enable methods to be adapted if detected. Watercourse restoration using best practice measures (e.g. as defined by the UK River Restoration Centre) to increase physical habitat diversity, reconnect to the floodplain, increase light levels to the channel and riparian corridor and maximise species diversity, controlling non-native species.
Badger	CONSTRUCTION – ALL PHASES		Precautionary surveys will continue to ensure any new setts or re-activated setts are taken into account in the construction programme. Should it be necessary Natural England badger licences will be sought to ensure legal compliance in terms of disturbance of any setts and any requirements for exclusions/sett closure/provision of artificial setts. Deep excavations will be covered at night or suitable mammal ladders/earth maps will be provided to allow large mammals including badger to exit excavations. See 'Otter' above in relation to mammal tunnel and ledges under new bridges.
Fish (including Atlantic salmon)	CONSTRUCTION – ALL PHASES		The development will not result in a net increase in fine sediments ('fines') reaching the River Itchen SAC resulting in adverse effects on Atlantic salmon. Construction phase mitigation: Sediment run-off can be particularly severe during the land clearance, surface contouring and groundworks construction phases, where soils are exposed. It is a particular risk during storms/times of high rainfall. Measures to address sediments are set out in the Construction Environmental Management Plan (CEMP). These include: Phasing and timings: no works should occur during periods of heavy rainfall events. Consideration should be given to timings of ground works close to watercourses to avoid sensitive spawning periods for Atlantic salmon (avoid key spawning period of November- December) Installation of temporary SuDS where strategic SuDS features cannot be implemented or not yet effective (e.g. before vegetation establishment which can typically take up to 3 years) Plans to deal with erosion from flow 'escapes' during heavy and extreme rainfall events – e.g. biodegradable netting (erosion 'blankets') along ditch/swale/wetland edges before vegetation has established the measures to be used during the development in order to minimise environmental impacts of the works (considering impacts such as potential disturbance, noise and vibration,

			lighting, pollution, water quality impacts, storage of fuels and chemicals, sediment and silt control, hydrological regime changes.)
Invasive species No INNS species have been recorded for the Link Road site.	CONSTRUCTION – ALL PHASES		Construction activity should not cause the spread of any invasive species and specialist contractors should be employed to control and deal with invasive species, where required. Should invasive species be identified on site, measures set out in Section 6 would apply and an appropriate contractor informed.
Watercourses including River Itchen SAC	CONSTRUCTION AND OPERATION – ALL PHASES Prevention of sediment discharge into streams and SAC: maintenance of water quality	All times	Full details of construction measures set out in relevant CEMP. See also measures for fish (Atlantic salmon) above. The Environmental Permitting (England and Wales) Regulations 2016 require a permit or exemption to be obtained for any construction activities which will take place on or within 8 metres of a non tidal main river. This would therefore mean that Link Road bridge crossings of any main river watercourse would need to be considered under these Regulations. Works in such close proximity to watercourses present a particularly high risk of water pollution, especially through the mobilisation of sediments. Retention, protection and restoration of watercourses and associated riparian corridors including bankside and in channel enhancement measures, promoting reconnection with the floodplain and Stage 0 features, delivered in accordance with a detailed long-term water features management plan. All watercourses will be protected by a 10m ecological buffer (excluding SUDS connections and ecological improvements) with an associated 10-50m green infrastructure corridor (measured from the bank edge of water limit when watercourse is full i.e. bankfull). This buffer will be enhanced with appropriate habitat management and habitat creation measures that complement and enhance the watercourses. Early inclusion of SuDS to promote on-site attenuation of surface waters emerging from the OHH area to enable long-term high quality wetland/watercourse habitats, promoting physical habitat diversity, reconnection to the floodplain and Stage 0 headwater processes, to ensure no further downstream mobilisation of soil/riverine sediment and nutrients and to provide ecologically valuable natural filtration features within the development such as wetland areas reed beds etc that is above and beyond the net zero nutrient and sediment emission measures described in above. CEMP measures: Sediment control: Control of sediment and runoff will be managed in accordance with the principles set out in the CIRIA SuDs Manual. Installation temporary sediment basins/traps/settlement ponds and/or early construction of the permeant SuDs features will be undertaken before any earthworks begin. Haul roads will be designed to minimise and control run-off including temporary surfacing and temporary drainage to intercept sediment laden run-off and wetting of surfaces during periods of dry weather. Run-off control measures to divert run-off around areas being excavated will be installed in conjunction with sediment basins/silt traps. The contractor will minimise the amount of land disturbed at any time to reduce the potential for run-off to enter water courses (phasing). The use of methods including, retaining grass and vegetation for as long as possible, in disturbed areas, controlling erosion via the use of straw bale barriers, geotextile silt fences and sediment basins (with regular clearing out of excess sediment off-site) and ensuring that the runoff from the disturbed area passes through sediment control systems before discharge will be required. De-watering operations – water pumped out of excavations generally carries a heavy sediment load and should never be discharged direct into watercourses.

			It should be routed first through features that will allow sediment to be filtered out and settle out. Working in or on the banks of watercourses presents a high risk of significant sediment mobilisation and challenges in intercepting it and capturing it once mobilised. The Contractor must consider the temporarily diversion of watercourses around work sites. Worked areas should be finished and vegetation established as soon as works are complete and the area/time ground is left bare and disturbed should be minimised. All discharge of water into local watercourses will be in line with relevant Environment agency licenses and permits. All sediment controls will be set out in the Contractors Construction phase plan and will be subject to weekly checks. Dealing with silty or contaminated water: Silt, including fine silt or other contaminated water must not be allowed to enter watercourses and ditches. The water courses in this area feed into the River Itchen, a European Special Area of Conservation for wildlife. Pollution of the watercourses could have significant environmental and ecological impact. There is a potential for significant silt and run-off from the construction works and storage areas, (which slope down towards the drainage ditches) to enter watercourses and ditches. The Principal Contractors plan their work to contain any contamination, for example, bunding, the use silt barriers/geotextile fencing or alternative effective measures to prevent this occurring. Contaminated water can arise from excavations, exposed ground, stockpiles, plant and wheel washing, concrete mixing, or other construction activities. Catch-pits or silt traps on drains will be used to remove suspended solids such as mud and silt to prevent contaminated water entering surface water drains, surface waters or ground waters, or draining onto the land. Wheel washing locations need to be identified away from watercourses and ditches. Before wheel washing takes place, checks will be carried out to ensure that sediment traps and measures to prevent run-off and the transmission of hydrocarbons/salt/invasive plant seeds are in place during cleaning. These must be checked and emptied and at regular intervals. Adequate provision for dealing with silty water is to be agreed in advance. Any planned discharges off the site will require prior approval with the appropriate authorities. All washings from cement and other cleaning processes must be contained within the site and removed via tanker or other appropriate means to prevent discharge into the local environment. All contaminated water must be removed from site and adequately treated prior to discharge under the appropriate permits and licenses. Stream/watercourse diversions: Temporary damming/dewatering or rerouting of watercourses will be required for the installation of bridge and walkway. All works which will impact the immediate environment and any European Protected Species (EPS) will be undertaken in accordance with the method statement reviewed and agreed with the OHH Ecologist and all relevant license conditions. Installation of drainage and SuDS features: Temporary SuDs and/or early installation of the permanent SuDs features will be implemented to prevent silt contamination of high-risk watercourses. During construction of the sewers and infrastructure the likelihood of any contamination being caused is slim, however all machines are well serviced and will be fuelled via diesel station located within the compound facilities that will have the appropriate raised blockwork surround with plastic lining to help prevent spillages. If there are spillages whilst a machine is onsite, then this can be addressed using the locally located spill kits to prevent any further contamination within the soil. There will also be the appropriate skips for waste materials etc. that will be delivered on a call-off basis to prevent over filling.
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SINCs and habitats	CONSTRUCTION ALL PHASES		A 15m buffer to areas of ancient woodland in which the following specifications apply: No excavation (except SuDS, respecting RPAs) No construction related activities or activities likely to have negative effect on habitat Biodiversity Enhancement permitted No additional lighting >0.5lux The 15m ecological buffer will be demarcated with a significant species rich hedgerow, fence earth bank and ditch features to prevent public access into these areas. The ecological buffer will be designed to effectively extend the existing habitats within the SINC woodland and to provide a transitional habitat and structure, replicating natural woodland expansion/succession to increase diversity and to protect and enhance the existing habitat. The zone between 15-50m from the habitat boundary will be subject to the following restricted uses and constraints: Footpaths Cycleways SuDS Biodiversity enhancement permitted Minimal additional lighting where this does not compromise ecological function, ideally >0.5lux. SINC woodland (Treeline Break): A 15m ecological buffer subject to the specifications as described above will be implemented between the link road and the woodland to protect the habitat and to ensure that root protection areas are respected. Where the removal or severance of woodland is unavoidable, compensatory native species rich planting will occur in accordance with the prescriptions agreed with Eastleigh Borough Council. New areas of woodland and woodland extension are also included in the proposals. Woodland management and monitoring will be implemented from the start of the project delivery process if not before to maximise habitat value, structure and longevity, including the control of non-native invasive species. A woodland management plan will be prepared and implemented for all woodlands. Hedgerows with mature trees at regular intervals (SINC or non SINC) will have a 15m buffer (measured from tree stems). Hedgerows without mature trees or only occasional trees (SINC or non SINC) will have a minimum 5m ecological buffer (plus RPA around any mature trees to be retained) measured from the centre line of the hedgerow. These buffers will be subject to the following constraints: No excavation (except SuDS, respecting RPAs) No construction related activities or activities likely to have negative effect on habitat Biodiversity Enhancement permitted No additional lighting >0.5lux All hedgerows will be managed for biodiversity in accordance with a long-term management plan, including new planting to infill gaps in hedgerows and ongoing high quality management.
Bird Hazard Management Plan	CONSTRUCTION	All times	Control of construction drainage and earth works during the construction phase should ensure that wide areas of permanent open water do not develop which can attract geese, gulls and wading species. If necessary, bare loose soil should be compacted to reduce its suitability for bird species. The timing of all significant earthworks, particularly topsoil spreading and grading, shall be notified to the airport (Airfield Operations) in advance and scheduled, where possible, at times of lower flying activity.

			Grass seeding should be done in phased sections if the area to be seeded is larger than 150m² rather than all at once. Intervals between discrete blocks should ideally be in the order of 3 days. This will produce staggered germination, reducing the amount of seed available to pigeons, reducing the area affected at any one time and allowing better deployment of passive deterrent measures. Blocks of ground where construction work has been completed shall be reinstated or covered and re-seeded (where applicable) at the earliest opportunity. Waste control and disposal for the Site, including food waste, should be controlled to avoid the build-up of scavenging bird species such as gulls and corvids. Waste should be placed in covered skips and bins to reduce risk."
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11 THE TIMES DURING CONSTRUCTION WHEN SPECIALIST ECOLOGISTS NEED TO BE PRESENT ON SITE TO OVERSEE WORKS

Ecological supervision will be required for the following construction activity/operations:

- Works affecting vegetation clearance and capture/translocation of any great crested newt within GCN 250m zones during March-October inclusive;
- Soft felling of trees with low bat roost potential (anytime);
- Vegetation clearance (habitat manipulation – 2 stage cutting down) of habitat with known reptile potential during active reptile period (March- October);
- Vegetation clearance of habitat with dormouse potential at Foxholes Wood during active dormouse period (removal of tree/hedge roots/ stumps, May to October);
- Clearance of vegetation with nesting bird potential during the nesting bird season (1st March to 31st August) – pre-works nesting bird check required rather than supervision.
- Confirmation of the appropriate implementation of the CEMP measures.

The Project Ecologists will be on site to provide Ecological Tool Box Talks to The Principal Contractor and its sub-contractors to ensure that this EMMP, LEMP and relevant parts of the CEMP are fully understood and will be adhered to.

In addition, the Project Ecologists will be undertaking ongoing monitoring and reporting back to the Principal Contractor, the OHH Management Team and EBC/NE/EA during the duration of the works.

The Project Ecologists will be 'on standby' to respond to any unforeseen ecological issue that may arise during the proposed construction works.

PART 2 - LEMP

12 LANDSCAPE ECOLOGY AND MANAGEMENT AND ENHANCEMENT PLAN (LEMP)

12.1 LEMP OBJECTIVES

The requirements of the available green space areas are to fulfil multiple functions as required by the development including recreation, landscape, sustainable drainage and ecological mitigation and enhancement objectives. This document refers in detail to the ecological requirements and specifications for the existing habitats and those to be created on site.

Specifically:

- Mitigate for severance, habitat loss and habitat degradation effects associated with suitable roosting, foraging and connective habitat for bats as identified in the Bat Mitigation Strategy (Johns Associates, 2019);
- Mitigate for the loss of sub-optimal foraging habitat associated with the great crested newt (GCN) population to provide significant habitat enhancements aimed at increasing the population size of the Quobleigh metapopulation as identified in the Great Crested Newt Mitigation Strategy (Johns Associates, 2019). These measures have also been committed as mitigation and enhancement measures supporting the Natural England Great Crested Newt Mitigation Licence application for this Site. Specific areas have been identified that are to be managed with the express purpose of delivering optimum GCN habitats;
- Compensate for the loss of species rich hedgerow removed during construction works;
- Compensate for the loss of trees associated with this development;
- Provide significant habitat enhancement in order to achieve an overall biodiversity net gain for the wider development using the habitat criteria detailed in the DEFRA 2.0 metric;
- Ensure successful establishment of new planting and long-term health of existing and new planting for the benefit of the land users and wildlife; and
- To comply with wildlife legislation and policy and in particular that relating to protected species.

It also allows for the provision of multi-functional open spaces where the potential conflict between the requirements of these areas can be suitably reconciled (e.g. recreation and ecological sensitivity). As such, this plan also includes elements that will provide additional open space in addition to their provision of ecological mitigation and enhancement measures, where appropriate.

The management period required is considered to be 30 years post construction, unless otherwise agreed with Eastleigh Borough Council.

Details of the body or organization responsible for implementation of the plan

The LEMP is secured via planning condition that requires the body implementing the planning application to ensure that the development proceeds in accordance with the LEMP. At the moment Eastleigh Borough Council are both owner and developer of the land so this onus would fall upon the Council which as a responsible developer has included the requirements of the LEMP in its project funding. Should any future land transfers take place the planning requirements will run with the land and fall upon any new developer/owner.

12.2 GENERAL SPECIFICATION

The contractors shall make themselves aware of all service locations prior to commencing on site. All planting works to be carried out in accordance with BS4428 1989 'Code of Practice for General Landscape Operations. Recommended timing of works is detailed in the Table 7.

All trees and hedgerows which are shown for retention should be inspected for safety by a suitably qualified member of the Arboricultural Association and subject to BS5837 2012 – Trees in relation to design, demolition and construction - recommendations. They will be protected during all stages of construction with suitable temporary barriers in accordance with BS5837 2012 and must comply with all applicable planning conditions. Any tree surgery required shall also be in accordance with BS3998 2010 'Tree work. Recommendations'.

The landscape contractor shall make the project coordinator aware of any injurious weeds (classified under the Weeds Act 1959) and invasive weeds (as noted in section 14(2) of the Wildlife and Countryside Act 1981, Schedule 9 Part II) that may be present on site at the earliest opportunity.

The landscape contractor shall satisfy himself as to the suitability and availability of materials/topsoil on site, and if necessary, topsoil shall be imported from an approved site. All topsoil to be in accordance with BS3882 2015 – Specification for topsoil and requirements for use. Soil ameliorant to be agreed with project manager/SQE and were approved for use to be applied to new planting as per manufacturers recommendations, unless otherwise directed.

All plant material to be in accordance with relevant British Standard, and available for inspection prior to planting. Any plant stock to be planted outside the planting season (November to March unless otherwise stated) to be containerised. All containerised stock to have healthy, well-developed root system within the specified pot size.

No fertiliser is to be applied within ecological mitigation areas unless otherwise agreed with SQE.

12.3 REPORTING AND REVIEW PROCESSES

A Management Team will be established to ensure that the management plan is implemented and oversee its ongoing use and development through a process of monitoring and review. The Management Team will comprise representatives from the One Horton Heath delivery team, the Landscape Contractor, the project ecologist (suitably Qualified Ecologist, SQE) and any specialist consultants as appropriate.

In order to monitor standards and make amendments where required, the Management Team will need to review the management work (with reference to this document) with the Main Contractor and the Landscape Contractor prior to handover and at least quarterly for the first year after practical completion of the development. Post-handover, review annually with the Landscape Contractor unless agreed otherwise.

All plant failures should be logged and reported to the Management Team at the first opportunity. It is anticipated that, where approved, replacement planting should be carried out in the next planting season, with replacement plants to match size and species of adjacent plants. If the originally specified species is found to be unsuitable for the current situation (during the design stages species were chosen carefully so as to avoid this issue), then the Landscape Contractor should propose an appropriate alternative.

The Landscape Contractor will contribute to an annual review of the use of the site carried out by the management team, looking at the following (as appropriate):

- Pedestrian routes and desire lines
- Litter
- Wildlife impact
- H&S management and duty of care

It is anticipated that following the review of the use, any issues or changes that are impacting on the landscape will be either accommodated through design proposals by the Landscape Contractor or approach to the appropriate body by the Management Team.

It is suggested that the Management Team discuss any significant changes to the site layout and management regime, where appropriate, with the Local Authority.

An operations checklist will be signed by the Landscape Contractor when actions are completed during each maintenance site visit. The checklist will be submitted to the Main Contractor or the Management Team for approval following each site visit.

12.4 PROCEDURES FOR CONTRACTORS

The following should be discussed and confirmed at initial meetings with the Contractor:

- Storage of materials and parking.
- Location of underground services.
- First aid arrangements; and
- Emergency procedures.

In the event of an incident occurring during the implementation of the landscape management works this would be required to be reported to the Management Team. Any incident shall be reported immediately, and emergency services contacted if necessary.

12.4.1 Chemical Use

It is the responsibility of the Landscape Contractor to ensure they are aware of, familiar with and abide by all current legislation pertaining to pesticides (insecticides, herbicides, fungicides) and their use.

A full Risk Assessment shall be undertaken and documented for each planned chemical application.

Chemicals are only to be used for weed control and pests/diseases where specified and approved. All work and workmanship shall comply with latest COSHH regulations. Where work is near to drainage ditches or land drains it must comply with Environment Agency guidelines for use of chemicals. Where scheduled or instructed the Landscape Contractor shall apply a suitable foliar acting herbicide to kill regrowth and allow the recommended period before clearing arisings.

12.5 DESCRIPTION AND EVALUATION OF HABITATS TO BE MANAGED

Post development, the Link Road will contain the following habitats: all are only of value in a site/local context. Subsequent sections provide more detail on the habitats and also detail the management prescriptions for such habitats and their Biodiversity Net Gain condition target status:

- Hedgerows
- Scrub
- Scattered trees
- Other Neutral Grassland (Semi-improved neutral grassland)
- Marshy grassland
- SuDS (not addressed here)
- Urban hard surfaces (not addressed here)
- Amenity grassland (not addressed here)

12.6 ECOLOGICAL TRENDS AND CONSTRAINTS ON SITE THAT MIGHT INFLUENCE MANAGEMENT

Management will take account of ash die-back in terms of assessing and removing ash trees if considered appropriate to do so by a qualified arboriculturalist.

Early establishment and maintenance of habitats will take account of climate change which may require additional watering during establishment phases.

12.7 HEDGEROWS

The site contains of a number of mature field boundaries consisting of existing, native hedgerows with hedgerow trees. Existing hedgerow species include blackthorn (*Prunus spinosa*), ash (*Fraxinus excelsior*), bramble (*Rubus fruticosus*), dog rose (*Rosa canina*), field maple (*Acer campestre*), hawthorn (*Crataegus monogyna*), field rose (*Rosa arvensis*), elm (*Ulmus procera*), dogwood (*Cornus sanguinea*), grey willow (*Salix cinerea*), holly (*Ilex aquifolium*), and polpar (*Populus cinerea*).

Key Habitat Aims and Objectives

Table 4 Hedgerow Habitat Objectives			
Target Criteria	Measure	Tolerances	Management and Monitoring Actions
A. To provide a species rich linear habitat that supports wildlife including nesting birds, amphibians, reptiles, invertebrates, and small mammal species.	The value of a hedgerow is a function of its structure, diversity, and context. Hedgerows should be well sited and maintained as a substantial feature both in terms of height and width (Table 1). The grassland areas at the base of hedgerows are important breeding, resting and nesting habitats for a variety of species. These must be species rich, dense, and allowed to outgrow to provide suitable shelter.	The establishment of animal species in any given habitat, particularly those that are new or establishing. Whilst the ultimate target condition should be achieved, that key tolerance is in terms of the period post construction at which this target is met. Time to target condition is estimated at 5-10 years.	See 12.7.1.2 and 12.7.1.3
B. To achieve a target condition of Good according to the DEFRA 2.0 metric criteria	See Table 2	The target condition should be achievable within 5-10 years post construction. Moderate condition is considered acceptable only if good condition proves to be unachievable as moderate condition has formed the basis of the BNG calculations for the wider site.	See 12.7.1.2 and 12.7.1.3 Botanical monitoring should be conducted in years 1, 3, 5, 10 and then every 5 years to inform remedial management required to retain target condition.
C. To provide habitat connectivity across the landscape	Hedgerows and adjacent grassland vegetation should be managed to create a substantial natural feature in the landscape, providing a landmark for navigation and suitable habitat for small animals to disperse across the site and into the landscape beyond. Hedgerows will be sited so that they form a well-connected network.	N/A	See 12.7.1.2 and 12.7.1.3

Table 1 Hedgerow - Favourable Habitat Condition Criteria			
Attributes and functional groupings (A, B, C & D)	Criteria (the minimum requirements for 'favourable condition')		Description
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice) A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height)
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice ⁴)
B1.	Gap – hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length and No canopy gaps >5 m	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate)
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least)	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate)
C2.	Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles (<i>Urtica</i> spp.), cleavers (<i>Galium aparine</i>) and docks (<i>Rumex</i> spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.

D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (

Table 2 Condition Categories for Hedgerows	
Category	Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-.2
Good	No more than 2 failures in total and no more than 1 in any functional group.
Moderate	No more than 4 failures in total and fails both attributes in a maximum of one functional group e.g. fails attribute 1 & 2, 5 & 7 = Moderate condition.
Poor	Fails a total of more than 4 attributes or both attributes

12.7.1 Removal of Hedgerows

12.7.1.1 Preparation

If the hedgerow to be removed lies within a GCN 250 zone: where removal of sections of existing hedgerow is required, this must be subject to agreement with the SQE and in compliance with the GCN method statement for this site:

- Check for below and above ground services in the vicinity. Inform project supervisor if they may be affected and obtain instructions before proceeding. Comply with BS 3998:210, Appendix A and Forestry and Arboriculture Training and Safety Council Safety Guides.
- Clearly mark plants/sections to be removed. Avoid damage to adjacent vegetation or structures to be retained. Protect with protective fencing (to comply with BS 5837:2012) until the end of the works/construction period where necessary.
- Obtain the project manager/SQE approval before removing stumps that may require winching and do not use other trees as supports or anchors. Fill holes and grade to marry in with surrounding ground level, using as-dug material and/or imported soil as required.
- Recommended mix for new hedgerows is described in Table 3. Species should be of native origin.

Where gapping up of existing hedgerows is required:

- Any dead or dying plants are to be replaced during the winter season (November/February) and newly planted areas are to be maintained in a healthy and weed free condition. Plants loosened by frost heave or wind rock shall be re-firmed. Following approval from the project manager/SQE any section of an existing hedge which is in poor health with low vigour and would not respond to trimming is to be cut out, roots removed and gapped up with a mix comprising a diverse range of locally native species.
- Hedges to be gapped up with locally prevalent native mix. Plant mix to be planted at 450 mm centres in double staggered rows, 450 mm apart.
- Transplants to be protected with spiral rabbit guards Tubex shrubshelter or similar— specification to be agreed.
- Suggested gapping up mix is described in Table 3, or similar approved:

Table 3 Hedgerow Species Mix

% Mix	Species	Age/Form	Height cms	Breaks	Roots
30	<i>Crataegus monogyna</i>	1+1	40-60	3	Br
20	<i>Prunus spinosa</i>	1+1	60-90	2	Br
15	<i>Corylus avellana</i>	1+1	40-60	3	Br
10	<i>Ilex aquifolium</i>	2L pot	40-60	1	Cg
5	<i>Cornus sanguinea</i>	1+1	40-60	3	Br
8	<i>Acer campestre</i>	1+1	40-60	3	Br
2	<i>Rosa canina</i>	1+0	40-60	Branched	Br
2	<i>Rosa arvensis</i>	1+0	40-60	Branched	Br
2	<i>Euonymus europaeus</i>	1+0	40-60	Branched	Br
2	<i>Viburnum lantana</i>	1+0	40-60	Branched	Br
2	<i>Rhamnus catharticus</i>	1+0	40-60	Branched	Br
2	Ulmus spp. (to be confirmed with supplier as to suitability. Substitution options include <i>Carpinus betulus</i>).	1+0	40-60	Branched	Br

12.7.1.2 Maintenance - Establishment

Established hedges/sections of hedges can be trimmed annually each winter (November - February) using suitable mechanical cutters. Cut to an 'A' shaped profile with the more shaded northern face to be cut to a shallower angle than the un-shaded face. No hedge trimming to be carried out during the nesting season (1st March – 31st August inclusive). Final trimmed size to be agreed, 3 m high and 3 m wide at base where appropriate unless specified on site. Individual hedgerow trees to be left untrimmed unless required by CA. All clippings to be cleared away and removed from site to recycling/composting facility.

12.7.1.3 Maintenance - Long Term (30 years) Monitoring & Management

Newly planted species to be frequently trimmed in the first five years to ensure a denser structure. The hedgerow shrub layer will then be cut every three years to keep it thick and to gradually increase in width and height. Where the hedge starts to get sparse at the base either implement gapping up, laying or coppicing to rejuvenate the hedgerow. The cutting height will be raised by 10-15 cm every three years to increase the berry crop and improve the shrub health. One third of the hedgerows will be trimmed each year on rotation.

Patchy outgrowths will be encouraged between 1 m and 2 m wide to create a scalloped and soft edge. Approximately 1 m of ground vegetation will be retained each side of the hedgerows to create thick basal cover. The base will be cut after flowering every five years also on rotation (1/3 of the bases cut every five years) to control scrub encroachment.

12.7.2 New Species Rich Hedgerows

12.7.2.1 Preparation

- Planting to take place between November-March unless otherwise agreed.
- Prepare planting trench or planting pits as agreed. The existing grassland may require to be sprayed off prior to planting. Additionally, the area may require to be rotovated to provide optimum conditions for hedgerow growth. The habitats present are improved grassland with no suitable resting features for reptiles or amphibians so neither of these preparations will affect hibernating animals in either case. The preparation is to be subject of discussions with appointed contractor and the Project Ecologist based on site conditions at the time of works.
- Planting area to be weed free and thoroughly forked over before planting.
- Where shrubs are to be planted in pits they are to be 150mm wider and deeper than their root spread. Pits to be backfilled with a mixture of topsoil/soil ameliorate. Where necessary plants to be a minimum of 300mm from and adjacent hard surface. Once planted all stock to be well watered when planted with approx. 20L of water per m².
- Following planting and watering operations, plants to be mulched with 75mm of approved mulch unless otherwise instructed.
- Hedgerows to be planted in double staggered row at a density of not less than 5 per m, with approximately 450mm between plants in the same row, and 450mm between rows. The plants should be planted within this pattern in groups of 2-3.
- For hedgerow mix see Native Hedgerow gapping up mix (Table 3)

12.7.2.2 Maintenance Year 1

Newly planted hedges/sections of will require a period of formative pruning before they reach their final dimensions. Within this period the minimum of pruning is required to maintain a neat and tidy hedge. Formative pruning work will be undertaken annually, each winter (November/February) in accordance with sound horticultural practice and with consideration to the genus and species of plant involved. Pulverized bark mulch shall be maintained as a 75mm layer. As soon as ground layer plants have formed a close-knit ground cover the topping up of bark mulch will not be required. No hedge trimming to be carried out during the bird nesting period (Mid Feb – August). Remove any redundant shrub guards (unless biodegradable) and stakes / canes once plants have become sufficiently established.

12.7.2.3 Long Term (30 years) Monitoring & Management

The hedgerow shrub layer will be cut every three years to keep it thick and to gradually increase in width and height. Where the hedge starts to get gappy at the base either implement gapping up, laying or coppicing to rejuvenate the hedgerow. The cutting height will be raised by 10-15 cm every three years to increase the berry crop and improve the shrub health. One third of the hedgerows will be trimmed each year on rotation.

Patchy outgrowths will be encouraged between 1.5 m and 2 m wide to create a scalloped and soft edge. A minimum of 1 m of ground vegetation will be retained each side of the hedgerows to create thick basal cover. The base will be cut after flowering every five years also on rotation (1/3 of the bases cut every five years) to control scrub encroachment. Ensure that tools used are sharp and cut hedge so that top is narrower than the base to ensure base will remain clothed in leaves.

Subject to approval, replace any dead or damaged plants with matching species and size. Allow for re-firming soil around roots to ensure plants are securely planted and upright especially following periods of high winds. When agreed with the management team, shrubs are to be selectively thinned to allow room for growth and avoid 'overcrowding'. Care is to be taken to avoid overthinning, so creating obvious 'gaps'. Shelter/guards are to be removed and recycled at between years 3-5,

dependent on growth and condition. At approximately 5 yearly intervals the planting should be reviewed in terms of thinning and trimming for the benefit of long-term good health and diversity.

12.8 SCATTERED TREES

The site comprises retained and planted scattered trees and also lies adjacent areas of SINC woodland. The Wildlife and Countryside Act 1981 should be adhered to and any specialist licences obtained before commencement of work e.g for bat roosts. If problems are identified in trees off site, the Landscape Contractor shall notify the Management Team, who should contact and notify the appropriate land owner.

Aims and objectives: to provide successful scattered tree planting which in turn provides a wildlife resource, landscape quality and shade.

Proposed Woodland/ tree planting

Preparation

- Woodland mix to be planted at 3 m centres in naturalistic species groups of 5, 7 or 9;
- *Quercus robur* to be evenly distributed throughout the mix avoiding obvious straight lines;
- Setting out and planting methods to be agreed prior to the works commencing;
- Deep mulch proposed woodland - Apply sanitised and stabilised compost PAS 100 or similar approved (100 mm depth), to be free of pests, disease, fungus and weeds. Clear all weeds and water soil thoroughly in a circular area of 500 mm radius measured from the tree stem.

Suggested planting mix for proposed woodland is described in Table 5.

Table 5 Woodland Planting Mix

% mix	Species	Height cms	Specification	Roots
15	<i>Acer campestre</i>	125-150	Feathered	Br
5	<i>Ilex aquifolium</i>	80-100	Leader with laterals	Rb
5	<i>Corylus avellana</i>	125-150	Feathered	Br
10	<i>Malus sylvestris</i>	80-100	1+2 transplant	Br
10	<i>Prunus avium</i>	80-100	1+1 feathered	Br
55	<i>Quercus robur</i>	175-200	2x; feathered; 5 breaks	Rb

Preparation

- Tree pit size – 1.5 x diameter of root ball, no deeper than root ball. Break up bottom of tree pit to a depth of approximately 150 mm. Backfill with excavated material and ameliorants (organic fertiliser where agreed). Firm, water to achieve field capacity and stake appropriate to tree specification.
- Mulch - Apply sanitised and stabilised compost PAS 100 or similar approved (75mm depth), to be free of pests, disease, fungus and weeds. Clear all weeds and water soil thoroughly in a circular area of 500 mm radius measured from the tree stem. Where appropriate apply finished level of mulch 50 mm below adjacent grassed areas.
- Construct and install timber stock proof tree guard to protect trees from deer/stock. Specification to be agreed.
- Suggested trees are *Quercus robur* (18-20 girth; 450-550 height; roots Rb; specification 3x extra heavy standard, clear stem min 200cm).

Maintenance Year 1

- Regular watering/monitoring to ensure that the root-ball does not dry out.
Re-firm where necessary.
- Ensure 500 mm radius from stem remains weed free and top up mulch regularly to 75 mm.

Long Term (30 years) Monitoring & Management

- Monitor trees every five years for general condition, compaction of soil from congregating grazing stock (if grazed). Install additional fencing around trees if required. Retain deadwood within the tree and fallen limbs on the ground below tree wherever possible. Monitor health of trees and replace where required and feasible.

Lowland Mixed Deciduous Woodland & Parkland

The criteria for the delivery of this habitat type have been reproduced from the DEFRA Metric 2.0 Technical Supplement⁵ in **Error! Reference source not found.** and Table 5.5. The following principles will guide the delivery of this habitat on site:

- This habitat will be delivered through the planting of new woodland designed to extend the existing woodland habitats providing multi species benefits.
- This woodland planting will retain the existing grassland habitats where the grassland is of value or, in areas there the grassland has been removed, a diverse species mix will be sown.
- A specific native woodland species mix will be developed using the existing high value woodland community as a basis.
- These areas of woodland will be segregated from the main green infrastructure (GI) corridors by a species rich hedgerow, ditch and/or bank and fence to restrict public access.
- The associated GI corridors will act as a further complimentary habitat and buffer between the developed areas and the new woodland habitats.
- A detailed management and monitoring plan will be implemented to ensure target condition and structure are achieved.

⁵ Biodiversity Metric 2.0 Technical Supplement – Beta Test Final (DEFRA JP029, 29.07.20)

Table 5.4 Woodland Broad Habitat Type Condition Table

Condition Table	Woodland Broad Habitat Type
Habitat Description Woodland is defined as vegetation dominated by trees more than 5 m high when mature, which forms a distinct, although sometimes open, canopy [areas of trees with a canopy greater than 20%]. This includes felled, young or newly planted woodland. There is no minimum size for areas of trees that have the definite characteristics and feel of a woodland and are managed as woodland. Two broad woodland types are considered here: Broadleaved, mixed and yew woodland. Coniferous woodland. It does not include scrub (see separate scrub condition assessment). In England, native woodland is defined as woodland that is composed of at least 80% native tree species including 'naturalised species'. It is based on the England Woodland Biodiversity Group condition assessment for none SSSI woodlands. See https://woodlandwildlifetoolkit.sylva.org.uk/assess for more background and detailed information. Wood Pasture and Parkland (see notes below on how to record) Wood pasture is a vegetation structure rather than a particular plant community. Typically, this structure consists of large, open-grown or high forest trees (often pollards) at various densities, in a matrix of grazed grassland, heathland and/or woodland floras. This feature includes: Wood pasture and parkland derived from medieval forests and embankments, wooded commons, parks and pastures with trees; and where the land use has been converted to arable, forestry or amenity, but where ancient trees are still present. For wood pasture and parkland assessment established by PTES see https://ptes.org/campaigns/wood-pasture-parkland/wood-pasture-parkland-survey/.	
Condition Assessment Criteria 1. This should be an area of trees with complete canopy cover. 2. Native species are dominant. Non-native and invasive species account for less than 10% of the vegetation cover. 3. A diverse age and height structure of the trees. 4. Free from damage [Bark stripping; Browse line; Damage shoot tips] (in the last five years) from stock or wild mammals with less than 20% of vegetation being browsed. 5. There should be evidence of successful (i.e. not browsed off before it gets well established) tree regeneration such as seedlings, saplings and young trees. 6. Standing and fallen dead wood of over 20 cm diameter are present including fallen large dead branches/stems and stumps. 7. Wetland habitat if they exist within the wood has little sign of drainage or channel straightening. 8. The area is protected from damage by agricultural and other adjacent operations. 9. There should be no evidence of inappropriate management (e.g. deep ruts, animal poaching or compaction). 10. Invasive non-native plants are below 5% (see list below). 11. No signs of significant nutrient enrichment present. 12. More than 3 different native trees and 3 shrub species in an average 10 m radius.	

Table 5.5 Woodland - Key Habitat Criteria

Condition	Assessment Criteria	Score
Good	Meets at least 10 of the criteria with only minor variation No more than 1 of the indicators of poor condition are present Stands of native trees that do not obviously originate from planting should be classified as native semi-natural woodland. Stands of native trees that do not obviously originate from planting should be classified as native semi-natural woodland.	3
Moderate	Clearly fails at least 2 of the above criteria OR invasive non-native plants are 5-20%. OR where non-native species comprise more than 20% of the canopy, the woodland should be recorded as either non-native plantation or mixed woodland. A mixed woodland is woodland with native and non-native species. (This includes woodlands established by planting and by natural regeneration.) Trees of similar age and height structure throughout the woodland. Little or no standing deadwood is present.	2
Poor	The following characteristics can help to identify plantations: (note: BAP woodlands can be plantation woodlands) Non-native trees often of a single species or the same age are the dominant component; OR invasive non-native plants are greater than 20%. Mixed species show a consistent planting pattern across the site. Original planting lines or remains of planting lines can be seen Drainage features and channel straightening of watercourses	1
Undesirable species: - American skunk cabbage <i>Lysichiton americanus</i> - Himalayan balsam <i>Impatiens glandulifera</i> - Japanese knotweed <i>Fallopia japonica</i> - Cherry Laurel <i>Prunus laurocerasus</i> - Shallon <i>Gaultheria shallon</i> - Snowberry <i>Symphoricarpos albus</i> - Variegated yellow archangel <i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i> - Rhododendron <i>Rhododendron ponticum</i> Factsheets of these invasive non-native plant species can be found on the GB non-native species secretariat website. http://www.nonnativespecies.org/home/index.cfm		

Notes

The following information should be recorded:

- Dominant tree species
- Regenerating tree or shrub species
- Ground flora species – any specialist woodland plants present.
- The average age class throughout the wood – establishment (E), semi-mature (S/M), mature (M) or ancient (A).
- Whether the woodland is accessed by livestock and amount of deer pressure.
- Past management – whether any trees are coppiced or pollarded;
- Threats – damage by pests, invasion by undesirable.

Additional information relevant to data collection:

Woodland - Felled woodland

The condition assessment of this habitat type needs to be based – so far as possible - on the trees that stood on the site prior to felling. It should be possible to determine what these were from the stumps, bark and leaf litter. It should then be recorded as the original woodland type, the age of the trees and note that it has been felled. Condition assessment will be harder in these situation, but should be considered good unless good ecological justification can be given preferably with accompanying photographic evidence.

If it is not possible to record the woodland type, record any tree recovery or seedlings present between the stumps. Where felling occurred a considerable time previously (4-5 year +) with no obvious replanting progressing it may be appropriate in some circumstances to classify as the predominant habitat that is now replacing the felled trees (with stumps still present), particularly when they have high biodiversity value such as heathland or grassland development. Notes of what other species are present on the site will need to be recorded, such as ground flora; felled brash predominates; heather present; grass species; scrub and tree species regenerating etc.

Woodland - Planted young trees

This is recently planted trees (often in tree tubes) within grassland. Where the tree species planted match another woodland description they should be recorded under this description (with a note to state the tree age and that recently planted). If none match then they can be recorded under this catch all category. The grassland sward species and herbs present should also be recorded and described in field notes. Particular note should be made of habitat enhancement practices, such as where native flowers and herbs are created surrounding the planting, to give a wildlife boost until full tree canopy has developed.

Woodland and forest - Wood-pasture and parkland

These are mosaic habitats valued for their trees, especially veteran and ancient trees, with a grazed grassland below. They have open grown trees, sometimes in clumps, but with space between them. They may contain patches of scrub in some circumstances. If it is clearly this habitat then it needs to be recorded under this habitat type for all the area being surveyed. But for condition it may well be preferable to condition assess and map different components separately using different sheets. Please record how this was done, along with recording area amounts for each split section. So below the tree canopy use the woodland condition table; in open grassland use the grassland condition; on mappable areas of scrub use the scrub condition etc. This is relatively complex on the different components of the mosaic, but will be useful for large areas of parkland being surveyed. To make an accurate assessment of the biodiversity value we need to know if the grassland is made of poor or good quality species composition, is the scrub of high quality, the age of the trees and key feature etc. This is likely to involve quite extensive field notes and ecological report to capture this information accurately.

Wood pasture and parkland that has been converted to other land uses such as arable fields, forestry and amenity land but where veteran trees survive are still of high nature conservation interest. They offer great opportunities for restoration to increase biodiversity habitat and should still

12.9 SCRUB AND WOODLAND UNDERSTORY

Areas of scrub are present on site, including as understory of newly planted woodland.

Aims and objectives: to provide successful scattered scrub and woodland understory planting which in turn provides a wildlife resource, landscape quality and shade.

Preparation

Native scrub and woodland understorey mix is described in Table 6.

Table 6 Scrub/Woodland Understorey Mix

% mix	Species	Age/ form	Height cms	Breaks	Roots
15	<i>Crataegus monogyna</i>	1+1	40-60	3	Br
15	<i>Prunus spinosa</i>	1+1	40-60	2	Br
10	<i>Ilex aquifolium</i>	2l pot	40-60	1	Cg
10	<i>Acer campestre</i>	1+1	40-60	3	Br
5	<i>Rosa canina</i>	1+0	40-60	Branched	Br
5	<i>Rosa spinosa</i>	1+0	40-60	Branched	Br
40	<i>Rubus fruticosus</i>	0/1	40-60	2	Br

To be planted at 1 m centres in species groups of 5-10. *Rubus fruticosus* to be evenly distributed throughout the mix avoiding obvious straight lines. Understorey planting to be deep mulched with 100 m approved mulch unless otherwise instructed.

Maintenance Year 1

Native understorey scrub to be left largely unmanaged and allowed to develop into dense scrub cover as wildlife habitat. Any maintenance works to be carried out following prior approval of the SQE.

Long Term (30 years) Monitoring & Management

The scrub will be monitored every three years and management measures to either enhance or reduce the scrub will be implemented. Measures may include mowing, flailing, coppicing, layering, thinning, edge management, glade management, removal of non-desirable/non-native invasive species, weeding new species, cutting and stump removal. Decaying wood will be left for cover and hibernation for great crested newts. Good layers of leaf litter optimal and a mosaic of scrub, bare ground and ground vegetation optimal for great crested newts.

Any dead or damaged plants are to be replaced with matching species and size. Size should match that of the surrounding plants, rather than the originally specified size. Soil around roots is to be refirmed as necessary to ensure plants are securely planted and upright especially following periods of high winds. Shelterguards are to be removed at between years 3-5, dependent on growth and condition. At approximately 5 yearly intervals the planting should be reviewed in terms of thinning and trimming for the benefit of long term good health and diversity.

12.10 SEMI-IMPROVED NEUTRAL GRASSLAND/ MARSHY GRASSLAND

Areas of grassland habitats, predominantly poor semi improved and other neutral grassland, will be delivered across the site to the specification outline below.

Aims and objectives. See Table 7 below. Grassland to be managed as 'other neutral grassland' (BNG category) to encourage a species rich sward and subject to a minimal cutting regime. These areas form key components of the green infrastructure corridors and connective habitats that will facilitate continued use of the site for wildlife and ensure landscape connectivity to the habitat areas beyond. The extent and location of these habitats, in combination with the requirements for accessible open space, will constrain the ultimate condition that can be achieved. However, all reasonable measures will be taken throughout the detailed design, delivery and ongoing management of these habitats to deliver the maximum possible value for wildlife. Grassland within the ecological mitigation area to include semi-improved grassland, species-rich meadow grassland on bund, and marshy grassland. All grassland habitats within the areas identified for great crested newts are to be managed expressly to provide optimum habitat conditions for this species. All grassland areas within the ecological mitigation area to be managed and maintained to maximise biodiversity on site, to include provision of GCN habitat and connectivity of grassland habitats/types wherever possible. Carry out operations in accordance with BS7370 Part 31991. To be carried out as agreed with the SQE.

Meadow Grassland

Preparation

- Scarify existing grassland during winter, ensuring no damage to amphibians, reptiles or their habitat avoiding any areas of tussocks to promote establishment of tussocky sward.
- Sow with species rich meadow mix Emorsgate EM2 General Purpose Meadow Mixture or similar approved in spring (February March) including a high percentage of yellow rattle (*Rhinanthus minor*) to reduce the

prevalence of dominant grasses and to facilitate the colonisation of a diverse herb community.

- The sowing rate is subject to agreement with the SQE.
- Seed dispersal to be by hand/pedestrian broadcaster

Maintenance Year 1

- Maintain area of grassland to create a tussocky grassland sward/mosaic of diverse grassland habitats. Management within the first year to be reactive and will include reseeding where necessary. Remove/hand pull non-native scrub and noxious weeds where necessary. Do not apply fertiliser or herbicide other than to spot treat problem weed species.
- Cut grassland areas in very early spring (late February) to 150 mm. Allow grassland to develop and strim to carry out traditional hay-cut in July during period of hot, dry weather to 150mm. Final cut to be carried out to 150mm in autumn as required (mid-November onwards to avoid amphibians/reptiles) and under supervision of SQE should there be any hibernation suitability for GCN within tussocks.
- Remove all arising from site or deposit in specified location to compost for reptile/invertebrate habitat.

Long Term (30 years) Monitoring & Management

- Grassland will be mown twice annually in early season and once the seed has set in late summer. The vegetation will be cut to 150 mm in the summer cut and dried on site, turning it to assist drying and dispersing seeds. A variety of sward heights is to be maintained to create habitat variation and to allow the establishment of tussocks. The dry hay will be removed within 7 days of cutting. Additional treatments with yellow rattle should be considered should the initial application fail to control non-target species (e.g. perennial ryegrass).

Marshy Grassland

Marshy grassland exists in a linear strip alongside the ordinary watercourse that meets the Moorgreen Stream to the south of Foxholes Wood. It is dominated by soft rush with common ragwort *Senecio jacobaea*, Yorkshire fog, tufted hair-grass *Deschampsia cespitosa*, creeping buttercup *Ranunculus repens*, broad-leaved dock, water pepper, creeping bent, common fleabane, short-fruited willowherb, nettle, marsh foxtail *Alopecurus geniculatus*, and marsh thistle.

Aims and objectives. Managed as marshy grassland, improve its floristic diversity and maintain and enhance its wildlife value. Grassland to be managed as 'other neutral grassland' (BNG category) to encourage a species rich sward and subject to a minimal cutting regime.

Preparation

The existing area of marshy grassland is to be maintained and managed as an existing habitat. No prior preparation works are required.

Maintenance Year 1

To be maintained as grazed pastureland, cattle grazed where possible. Where cutting is required carryout traditional hay-cut to 150mm during August/September. Cutting regime to be agreed. Remove arisings.

Long Term (30 years) Monitoring & Management

If grazing is possible: grazing of grassland is preferred. Stocking rates should not exceed 0.2 – 0.3 livestock/ha/year and a lower stocking rate over a longer period is preferable. If seasonally grazed, roughly 1 head of cattle per hectare for three

months per year is recommended. Grazing animals will be removed if vegetation in drier areas get grazed too short or if the ground is too wet.

If grazing is not possible: If cut, the area will be cut in thirds on rotation between October and February. An annual inspection will be conducted to inform mowing regime and to inspect for scrub encroachment and invasive species. Scrub cover will be kept below 5% of the area.

Grass Bunds—Species Rich Grassland

Aims and objectives. Managed as species-rich grassland, improve its floristic diversity and maintain and enhance its wildlife value. Grassland to be managed as 'other neutral grassland' (BNG category) to encourage a species rich sward and subject to a minimal cutting regime.

Preparation

Suitable ground preparation of bund to be carried out and seeded with species rich meadow mix Emorsgate EM2 General Purpose Meadow Mixture or similar approved subject to soil analysis. Seeding to be carried out in spring (February/March weather dependent) or autumn (September/October).

Maintenance Year 1

Grassland habitat on bunds to be left to establish without cutting/strimming during the first year following establishment. Maintain area of grassland on bund to create a tussocky grassland sward/mosaic of diverse grassland habitats.

- Management within the first year to be reactive but will include reseeding where necessary.
- Remove/hand pull non-native scrub and noxious weeds where necessary. Do not apply fertiliser.
- Any cutting/strimming must be agreed with SQE.
- A specific risk assessment is to be carried out prior to mowing/cutting grass banks, to include assessment of weather and surface conditions to identify any potential hazards.
- Mowing is to be carried out using approved machinery suitable for use on slopes.
- Refer to all relevant British Standard Code of Practice for Landscaping and HSE guidelines for suitable mowing machinery, all machinery is to be used within its specified safe working angle. Contractor is to provide working method statements to be approved by the Management Team.
- In general slopes greater than 1:3 will require either a specialist rotary machine or strimmer/brushcutter.

Long Term (30 years) Monitoring & Management

In years two and three from sowing the bunds are left uncut to flower and the first cut will be in July. The vegetation will be cut to 150 mm in the summer cut and dried on site, turning it to assist drying and dispersing seeds. The dry hay will be removed within 7 days of cutting.

The species composition of the bund will be monitored as the slower establishing species start to establish in addition to the more quickly establishing pioneer perennials such as oxeye daisy to develop a relatively stable community. The cutting regime will contain a combination of: a mid-summer cut and cutting regrowth in late summer/autumn in conditions as described above. Cutting of spring growth and in wet weather in August and September will be avoided to avoid injuring newts migrating to breeding ponds and metamorphs emerging respectively.

Target Conditions

Grassland to be managed as 'other neutral grassland' (BNG category) to encourage a species rich sward and subject to a minimal cutting regime.

Table 7 Other Neutral Grassland - Habitat Aims and Objectives			
Target Criteria	Measure	Tolerances	Management and Monitoring Actions
A. To provide a species rich habitat that supports wildlife including nesting birds, amphibians, reptiles, invertebrates, and small mammal species.	The value of a grassland is a function of its structure, diversity, and ongoing management. The grassland areas are important foraging, resting and nesting habitats for a variety of species. The sward should be diverse both in terms of its species and structure, with long areas adjacent to hedgerows and other habitat features providing a mosaic of long and short sward heights with areas of tussocky grass included.	The establishment of animal species in any given habitat, particularly those that are new or establishing. Whilst the ultimate target condition should be achieved, that key tolerance is in terms of the period post construction at which this target is met. Time to target condition is estimated at 5-10 years.	See Error! Reference source not found.,22Error! Reference source not found. and Error! Reference source not found.
B. To achieve a target condition of Good according to the DEFRA 2.0 metric criteria	(see Table 6)	The target condition should be achievable within 5-10 years post construction.	See Error! Reference source not found.,22Error! Reference source not found. and Error! Reference source not found. Botanical monitoring should be conducted in years 1, 3, 5, 10 and then every 5 years to inform remedial management required to retain target condition.
C. To provide habitat connectivity across the landscape	Grassland vegetation should be managed to create a substantial natural feature in the landscape, providing a landmark for navigation and suitable habitat for small animals to disperse across the site and into the landscape beyond. Hedgerows will be sites so that they form a well-connected network.	N/A	See Error! Reference source not found.,22Error! Reference source not found. and Error! Reference source not found.

Table 6 Other Neutral Grassland - Habitat Condition Criteria		
Habitat Description		
Includes both agricultural, recreational, amenity, road verges and semi-natural grassland types including Priority Habitat Grasslands on all soil types. Will be dominated by grassland species with very little (if any) dwarf shrub, wetland or wooded species within the sward. Will exist above and below the level of enclosure at all altitudes		
Condition Assessment Criteria		
1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site. 2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation. 3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat. 4. Undesirable species and physical damage is below 5% cover. 5. Cover of bare ground greater than 10% (including localised areas, for example, rabbit warrens). 6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.		
Condition	Assessment Criteria	Score

Good	- Species-rich Grassland of all Priority Habitat Types. Of high to moderate quality. - Wildflower and sedges above 30% excluding white clover <i>Trifolium repens</i>, creeping buttercup <i>Ranunculus repens</i> and injurious weeds. - Meets all of the condition criteria with only minor variation - None of the indicators of poor condition are present (4, 5 & 6).	3
Moderate	- Semi-improved grassland occurs on a wide range of soils and may be derived from higher quality Priority Habitat grassland habitats in poor condition. Often as they deteriorate following nutrient inputs. Typical grasses include: cock's-foot, common bent, creeping bent, crested dog's-tail, false oat-grass, meadow fescue, meadow foxtail, red fescue, sweet vernal grass, Timothy, tufted hair-grass and Yorkshire-fog. - Total cover of wildflowers and sedges less than 30%, excluding white clover, creeping buttercup and injurious weeds. - Rye-grass cover is less than 25% including amenity grasslands. - OR - Clearly fails at least 1 of the condition criteria - OR - The grassland type has some differences between what is described in the relevant habitat classifications and what is visible on site. It is a Lower Quality Priority Habitat, but clearly recognisable as such. - Potentially restorable to grassland Priority Habitat with improved management. - Cover of undesirable species at 5- 15%.	2
Poor	- Agricultural grasslands is characterised by vegetation dominated by a few fast-growing grasses on fertile, neutral soils. It is frequently characterised by an abundance of rye-grass <i>Lolium</i> spp. (above 25% cover) and white clover <i>Trifolium repens</i>. These grasslands are typically either managed as pasture or mown regularly for silage production or in non-agricultural contexts for recreation and amenity purposes; they are often periodically re-sown and are maintained by fertiliser treatment and weed control. They may also be temporary and sown as part of the rotation of arable crops but they are only included in this broad habitat type if they are more than one year old. - Amenity and Road verge grasslands with similar species to description for agriculture grasslands. - OR Most of the condition criteria are being failed. - Cover of undesirable species above 15% usually resulting in a dense scrub or tree cover, or high cover of exotic species.	
Undesirable species: Creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common ragwort <i>Senecio jacobaea</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , white clover <i>Trifolium repens</i> , cow parsley <i>Anthriscus sylvestris</i> , marsh thistle <i>Cirsium palustre</i> and marsh ragwort <i>Senecio aquaticus</i> .		
Notes Physical damage to the vegetation from: excessive poaching, damage from machinery use or storage, or any other damaging management activities.		

Carry out operations in accordance with BS7370 Part 31991. To be carried out as agreed with the SQE.

Table 7 Link Road EMMP and LEMP Schedule of Operations

EMMP & LEMP - Schedule of Operations													
OPERATION	Notes	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Principal Ecological Seasonal Constraints													
Bats Hibernation and Active Periods													
Common Reptiles & Amphibians Hibernation and Active Periods													
Nesting Birds nesting period													
Dormouse hibernation period													
Construction Phase													
Works													
Scattered trees													
Scattered trees													
Scrub													
Scrub													
Hedgerows													
Defunct Existing Hedgerow													

New Species Rich Hedgerow		Trim/ thin	Replacement Planting as required	Mulch top up	Watering (if required)	Replacement Planting as required	Trim/ thin	Trim/ thin
Grassland								
Other Neutral Grassland				Cut	Targeted Weed Control (hand/weed wipe)	Cut	Reseed	
Waterbodies								
Streams							De- silting and reshaping works will not be undertaken between March and mid-August (and ideally should take place in late September/Octobe r).	Salmon spawning – avoid works which may leak sediment into watercourses

13 IMPLEMENTATION AND RESPONSIBILITIES

Table 9 below sets out roles and responsibilities in relation to implementation.

Table 9 Roles and responsibilities in relation to implementation

Mitigation/ management measure	Principal derivation	Project responsibility	Enforcing body
Staff/contractors working on site should be briefed on the locations of environmentally sensitive features, and on the working practices required to safeguard these feature	Natural England (NE)	One Horton Heath (OHH)	Eastleigh Borough Council (EBC) and NE
Protected species licences: GCN, bats and dormouse	Conservation (Natural Habitats etc) Regulations 1994 to protect from killing, disturbance, damage, destruction	OHH EPS licence holder; and named ecologist on licence (Johns Associates) Ecological monitoring and reporting is required in relation to the EPS licences for GCN, bats and dormouse and will be undertaken by the scheme ecologists.	EBC (if under licence – NE and Defra)
Precautionary measures for reptiles	Obligation under Wildlife & Countryside Act (WCA 1981) (as amended) to protect common reptiles species from inter alia, killing or injury	One Horton Heath and appointed contractors.	EBC (in consultation with NE).
Nesting birds	WCA all wild birds active nests protected from destruction	One Horton Heath and appointed contractors.	EBC (in consultation with NE).
Bats: tree felling, habitat planting connectivity, lighting	Conservation (Natural Habitats etc) Regulations 1994 to protect from killing, disturbance, damage, destruction, WCA	One Horton Heath (scheme designers), landscape architects, and appointed contractors.	EBC (in consultation with NE).
Otter and badger design	Conservation (Natural Habitats etc) Regulations 1994 to protect from killing, disturbance, damage, destruction, WCA, Badger Act	One Horton Heath (scheme designers), landscape architects and appointed contractors.	EBC (in consultation with NE).
Fish (protection of watercourses from pollution and excess sediment)	Conservation (Natural Habitats etc) Regulations 1994	One Horton Heath (scheme designers), landscape architects and appointed contractors.	EBC (in consultation with Environment Agency and NE).

		Water quality monitoring will be required and undertaken by specialist contractors (Hilson Moran and Johns preparing advice)).	
Invasive species	WCA 1981	One Horton Heath and appointed contractors.	EBC (in consultation with Environment Agency and NE).
Protection of buffer zones to sites and features (including woodland and watercourses)	EBC Local Plan	One Horton Heath (scheme designers), landscape architects and appointed contractors.	EBC (in consultation with Environment Agency).
Bird Hazard Management Plan	International Civil Aviation Organization ICAO Annex 14, Volume 1, to the Convention on International Civil Aviation	One Horton Heath (scheme designers), landscape architects and appointed contractors.	EBC (in consultation with UK Civil Aviation Authority (CAA))
LEMP: habitat creation and management	EBC Local plan and associated policies. Environment Act 2021.	One Horton Heath (scheme designers), landscape architects and appointed contractors.	EBC

14 APPENDICES (TO BE SEPARATE)

Document Control

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