



**Gavray Drive,
Bicester**

**Appendix 5.3
Ecological
Management
Plan**

Prepared by:
**The Environmental
Dimension
Partnership Ltd**

On behalf of:
L&Q Estates

July 2021
Report Reference
edp0124_r054a

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Section 1

Introduction, Purpose and Context

- 1.1 This Ecological Management Plan (EMP) has been prepared by The Environmental Dimension Partnership Ltd (EDP), in support of a new outline planning application for the development of 22.7 hectares (ha) of land north of Gavray Drive, Bicester (hereafter referred to as the 'Application Site'), on behalf of the landowners of the Application Site, namely: L&Q Estates ('the Applicant'); Charles Brown & Simon Digby; and London & Metropolitan International Developments.
- 1.2 This EMP accompanies Chapter 5 (Ecology) of the Environmental Statement submitted with the planning application and is referred to as ES Appendix 5.3. The Proposed Development comprises residential development for up to 250 dwellings including affordable housing and ancillary uses including retained Local Wildlife Site, public open space, play areas, localised land remodelling, compensatory flood storage, structural planting and access.
- 1.3 The Application Site is a long-standing development allocation close to the centre of Bicester. The land is currently allocated for development under Strategic Development: Bicester 13 (re-adopted) of the Cherwell Local Plan 2011-2031 Part 1, adopted in 2015. In recognition of the existing ecological interest at the Application Site, in particular the partial coverage of the Application Site by Gavray Drive Meadows LWS and its position partly within the River Ray CTA, policy Bicester 13 includes the following 'Key site-specific design and place shaping principles':
- *“Development must avoid adversely impacting on the Conservation Target Area and comply with the requirements of Policy ESD11 to secure a net biodiversity gain;*
 - *Protection of the Local Wildlife Site and consideration of its relationship and interface with residential and other built development;*
 - *Detailed consideration of ecological impacts, wildlife mitigation and the creation, restoration and enhancement of wildlife corridors to protect and enhance biodiversity; and*
 - *The preparation and implementation of an Ecological Management Plan to ensure the long-term conservation of habitats and species within the site.”*
- 1.4 This EMP sets out a package of restoration and enhancement measures and suitable ongoing management of the portion of the Application Site which is covered by Gavray Drive Meadows Local Wildlife Site (LWS) and additional land directly adjacent which is part of the River Ray Conservation Target Area (CTA). This area is collectively termed the 'Ecological Restoration Zone' (ERZ). This area has been defined based on the following:

- Presence of the most intrinsically valuable habitats (or those with potential to be so) and those supporting the majority of protected and notable species interests based on the conclusions of the Ecological Baseline Report (ES Appendix 5.1);
 - The location and extent of the Gavray Drive Meadows LWS, where it falls within the Application Site boundary; and
 - The location and extent of the River Ray Conservation Target Area, where it falls within the Application Site boundary, with the exception a small area of arable land immediately west of the Langford Brook.
- 1.5 The extents of the ERZ (and the LWS and CTA) are illustrated on the Open Space Parameter Plan submitted with the outline planning application, a copy of which is provided within **Annex EDP 1**.
- 1.6 It is proposed that management of the remaining areas of open/green space within the Application Site, located outside the Ecological Restoration Zone (including the residential development areas and associated access and green and blue infrastructure), will be detailed within a separate Landscape Management Plan. This will be prepared at the Reserved Matters stage in tandem with the detailed soft landscape proposals to be secured via planning condition. This separation is also a reflection of the differing management requirements of the two areas and allows for the likely scenario of the land outside the ERZ being managed by a separate management organisation.
- 1.7 This EMP builds on the draft Ecology Mitigation and Management Strategy (report reference **edp0124_r042a**), submitted to Cherwell District Council and shared with a range of other ecological stakeholders in October 2020 as part of the pre-application consultation process. This provided an overarching summary of the ecological management objectives for the Proposed Development and identified the information that will be submitted in full in due course, in fulfilment of relevant planning obligations and conditions attached to an outline planning consent, to include:
- A Landscape Management Plan (LMP) covering habitat creation and ongoing management of open/green space outside the Ecological Restoration Zone;
 - An Ecological Construction Method Statement (ECMS), which details sensitive working practices to be employed during vegetation clearance and construction works; and
 - A Biodiversity Impact Assessment (BIA), which includes a full assessment of how the proposals will achieve biodiversity net gain and the percentage of gain achievable.

Delivery Mechanism

- 1.8 Funding of both the initial and long-term management activities would be provided by the developer through a Section 106 (s106) legal obligation.

- 1.9 A number of possible management models have been put forward for consideration by the ecology stakeholder engaged at the pre-application stage. It is appreciated by the Applicant that the local stakeholders want certainty in terms of who will manage the open space on the site and how certainty will be secured in relation to the management of the site in perpetuity. Responsibility for implementation of this EMP and associated monitoring and review will be determined through discussion with CDC and local stakeholders but could be provided by a number of bodies including CDC, a Private Management Company or a third party such as Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust.
- 1.10 It has been proposed and agreed that during the determination period, and ahead of Committee, there will be an opportunity to review the options and to consider the wording of any cascade mechanism in the s106 that secures the delivery and maintenance in accordance with this EMP.

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Section 2 Site Description and Evaluation

- 2.1 A comprehensive Ecological Baseline Report (ES Appendix 5.1, report reference **edp124_r045**) is submitted with the planning application. The key ecological features at the Application Site are summarised below.

River Ray Conservation Target Area

- 2.2 A large proportion of the Application Site is situated within the River Ray Conservation Target Area (CTA). This is one of 37 CTAs in Oxfordshire and covers 1,192 ha encompassing land on the eastern edge of Bicester and Launton and to the south of Ambrosden and Blackthorn. Rather than being a single feature requiring strict protection, the CTA is a strategic area containing a concentration/network of existing features of ecological importance (including SSSIs and LWSs) but with surrounding land which can buffer and link areas thereby creating important larger and better-connected landscapes.
- 2.3 Policy ESD 11 of the Local Plan requires development within or adjacent to a CTA to identify constraints and opportunities for biodiversity enhancement. The policy also states that development which prevents the aims of a CTA being achieved will not be permitted.
- 2.4 Within the Application Site boundary there is a strong degree of overlap with Gavray Drive Meadows LWS (see below) and the CTA, however, additional land is covered by the CTA which is outside of the LWS (refer to **Annex EDP 1**). These areas are not strictly constrained for development, however, their position in the CTA presents an opportunity to protect and enhance these non-designated areas and enhance the ecological network.

Gavray Drive Meadows LWS

- 2.5 Gavray Drive Meadows LWS covers a large proportion of the Application Site and additional land to the south-east on the opposite side of Charbridge Lane (A4421). The LWS boundary is shown on the updated Phase 1 Habitat Plan (**Plan EDP 1**) appended to this report. LWS is a non-statutory designation, however, these receive protection through national and local planning policies including Policy ESD 10 of the Local Plan and specific site allocation policies such as Bicester 13.
- 2.6 With reference to the LWS citation obtained from Thames Valley Environmental Records Centre (TVERC), the LWS is described as '*a mosaic of small damp fields with ponds, divided by thick hedges with old trees*' and is designated on the basis of the following:
- Section 41 (S41) Habitats of Principal Importance¹: lowland meadows;

¹ Section 41 of the *Natural Environment and Rural Communities* (NERC) Act 2006

- S41 Species of Principal Importance: reed bunting, song thrush, bullfinch, linnet, and great crested newt;
- Nationally scarce species: a ground beetle (*Bembidion gilvipes*); and
- Birds of conservation concern: red list: bullfinch, reed bunting, song thrush, yellowhammer, linnet; amber list: dunnock, willow warbler.

2.7 As described further below with respect to habitats, the continued absence of any management of the habitats within the majority of the LWS had led to significant encroachment of scrub and young trees within formerly open grassland and tall herb communities and therefore an overall decline in the ecological value of LWS. Furthermore, the only two fields under active management which are (partially) within the LWS (fields F8 and F9 on **Plan EDP 1**) are cut annually in mid-summer which is sub-optimal in terms of promoting botanical diversity. Accordingly, there is significant scope to reverse this decline through a funded management regime should the Proposed Development be approved.

Habitats

- 2.8 The Ecological Baseline Report (report reference **edp124_r045**) provides full details of the current habitat baseline within the Application Site. This information is based on detailed update botanical surveys undertaken on 29 August 2019 and 08 June 2020 (the latter primarily focussing on fields F3, F8 and F9 which had been mown just before the visit in August 2019). The extent of scrub, which continues to encroach further into the unmanaged grassland areas, has been mapped accurately using a detailed topographic survey of the Application Site which was updated in January 2020.
- 2.9 Overall, the Application Site currently comprises a diverse range of habitats, including woodland, hedgerows, mature and developing scrub, wet and dry grassland, ponds and the Langford Brook. However, as noted above, the habitats of greatest intrinsic ecological importance, namely the species-rich unimproved neutral grasslands, are in severe decline. The current status of the habitats within the Ecological Restoration Zone is summarised in **Annex EDP 2**.
- 2.10 Within the Ecological Baseline Report, habitats are described and mapped according to both standard Phase 1 and NVC habitat definitions, together with their equivalent codes within the new UK Habitat Classification System (UK Hab), which underpins the habitat classification within the latest Defra Biodiversity Metric, Version 2.0. The Defra Metric 2.0 has been used to objectively measure biodiversity loss and gain, and has ultimately partly informed the proposed habitat creation, enhancement and ongoing management throughout the Application Site. The Biodiversity Impact Assessment (ES Appendix 5.2, report reference **edp124_r053**), demonstrate that the Proposed Development, with associated ecological mitigation and enhancement, would result in a net gain in biodiversity in excess of 10% for both 'area-based' (habitat) and 'linear' (hedgerow) features.

Protected and Notable Species

2.11 **Table EDP 2.1** below summarises the protected and notable species interest at the site based on previous and updated surveys.

Table EDP 2.1: Summary of protected and notable species present

Species/Species Group	Summary of Baseline	Key Habitats
Wintering birds	<p>Overall assemblage of Local importance.</p> <p>S41 species recorded:</p> <ul style="list-style-type: none"> • Starling (<i>Sturnus vulgaris</i>) • Song thrush (<i>Turdus philomelos</i>) • House sparrow (<i>Passer domesticus</i>) • Dunnock (<i>Prunella modularis</i>) • Bullfinch (<i>Pyrrhula Pyrrhula</i>) • Herring gull (<i>Larus argentatus</i>) • Skylark (<i>Alauda arvensis</i>) 	Woodland, dense scrub, marshy grassland and arable
Breeding birds	<p>Overall assemblage of Local importance.</p> <p>Red list species breeding/possibly breeding:</p> <ul style="list-style-type: none"> • Song thrush (<i>Turdus philomelos</i>) [S41] • Starling (<i>Sturnus vulgaris</i>) [S41] • House sparrow (<i>Passer domesticus</i>) [S41] • Mistle thrush (<i>Turdus viscivorus</i>) <p>Amber list species breeding/possibly breeding:</p> <ul style="list-style-type: none"> • Dunnock (<i>Prunella modularis</i>) [S41] • Willow warbler (<i>Phylloscopus trochilus</i>) • Mallard (<i>Anas platyrhynchos</i>) • Swift (<i>Apus apus</i>) • Stock Dove (<i>Columba oenas</i>) • Kestrel (<i>Falco tinnunculus</i>) 	Mosaic of woodland, mature trees, hedgerows, scrub, tall herb and grassland.

Species/Species Group	Summary of Baseline	Key Habitats
	<p>In addition, WCA Sch 1² species recorded using the site include:</p> <ul style="list-style-type: none"> • Red kite (<i>Milvus milvus</i>) - Green listed non-breeder • Barn owl (<i>Tyto alba</i>) – Amber listed non-breeder, but assumed to forage within the site based on previous sightings • Nightingale (<i>Luscinia megarhynchos</i>) – red listed non-breeder. 	
Bats (all EPS ³ and WCA))	<p>Overall assemblage of Local importance.</p> <p>Species recorded foraging/commuting:</p> <ul style="list-style-type: none"> • Common pipistrelle (<i>Pipistrellus pipistrellus</i>) • Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) [S41] • Nathusius pipistrelle (<i>Pipistrellus nathusii</i>) • <i>Myotis</i> sp • Long-eared species. (<i>Plecotus</i> sp.) – most likely to be brown long-eared (<i>Plecotus auratus</i>) [S41] • Noctule (<i>Nyctalus noctula</i>) [S41] • Leisler’s bat (<i>Nyctalus leisleri</i>) • Serotine (<i>Eptesicus serotinus</i>) • Barbastelle (<i>Barbastella barbastellus</i>) (S41) <p>Several trees with roosting potential but no confirmed roosts.</p>	<p>Roosting: Mature trees.</p> <p>Foraging: Woodland, hedgerows, scrub and grassland.</p> <p>Commuting: Woodland, hedgerows and dense scrub.</p>
Other Terrestrial Mammals	<p>Presence of small population of harvest mouse (<i>Micromys minutus</i>) [S41] considered likely, based on presence of nests recorded in 2013, although no evidence (nests) detected in 2020.</p> <p>Badger (<i>Meles meles</i>) not recorded during targeted surveys, however, presence assumed on a precautionary basis based on local records and habitat suitability.</p>	Woodland, hedgerows, scrub and rank grassland

² Protected under the *Wildlife and Countryside Act* (WCA) 1981 (as amended)

³ European Protected Species (EPS) protected under the *Conservation of Habitats and Species Regulations* 2010

Species/Species Group	Summary of Baseline	Key Habitats
	Hedgehog (<i>Erinaceus europaeus</i>) [S41] not subject to survey, but presence assumed on a precautionary basis based on local records and habitat suitability.	
Otter (<i>Lutra lutra</i>) [EPS, WCA, S41]	Population of Local importance. Evidence of foraging/commuting (spraint and paw prints) detected along the Langford Brook; however, the Application Site offers no suitable breeding/resting places for the species.	Langford Brook
Water vole (<i>Arvicola amphibius</i>) [WCA, S41]	Population of less than Local importance (if present). Potential presence (possible burrows and feeding signs, but evidence inconclusive) detected along stream.	Langford Brook
Amphibians (all WCA and S41)	Overall assemblage of Local - County importance. Great crested newt (<i>Triturus cristatus</i>) [EPS, S41] – medium-large metapopulation occurring across habitats within and adjacent to the site. Other species recorded: <ul style="list-style-type: none"> • Common toad (<i>Bufo bufo</i>) [S41] • Common frog (<i>Rana temporaria</i>) • Smooth newt (<i>T. vulgaris</i>) • Palmate newt (<i>T. helveticus</i>) 	Breeding: Ponds/standing water Forage/Shelter: Woodland, hedgerows, scrub and rank grassland.
Reptiles (all WCA and S41)	Overall assemblage of Local - County importance. Large population of common lizard (<i>Zootoca vivipara</i>) Small population of grass snake (<i>Natrix helvetica</i>) (none recorded during most recent surveys in 2020, but presence of small population considered likely).	Grassland, hedgerows and scrub
Invertebrates	Overall assemblage of Regional importance. Findings of targeted lepidoptera surveys include the following S41 species: <ul style="list-style-type: none"> • Brown hairstreak (<i>Thecla betulae</i>) • White-letter hairstreak (<i>Satyrrium w-album</i>) • Small heath (<i>Coenonympha pamphilus</i>) • 13 species of night-flying macro moth (S41 research only) 	Mosaic of woodland, mature trees, hedgerows, mature and developing scrub, tall herb, rank and shorter grassland, marshy grassland and ponds.

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	<p>Black hairstreak butterfly (<i>Satyrrium pruni</i>), although not a S41 species is also noteworthy, being of restricted distribution in the UK and Oxfordshire.</p> <p>Findings of general invertebrate surveys include the following S41 moth species:</p> <ul style="list-style-type: none"> • Forester moth (<i>Adscita statices</i>) • Shaded broad-bar (<i>Scotopteryx chenopodiata</i>) • Blood-vein (<i>Timandra comae</i>) <p>Findings of general invertebrate surveys include the following scarce and threatened species:</p> <table border="1" data-bbox="528 869 1161 2004"> <tbody> <tr> <td><i>Porrhomma convexum</i></td> <td>A linyphiid spider</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Alopecosa cuneata</i></td> <td>A lycosid spider</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Acupalpus exiguus</i></td> <td>A ground beetle</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Polystichus connexus</i></td> <td>A ground beetle</td> <td>Nationally Scarce; Near Threatened (Post-2001 IUCN criteria)</td> </tr> <tr> <td><i>Glaphyra umbellatarum</i></td> <td>Pear Shortwing Beetle</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Poecilium alni</i></td> <td>White-banded Longhorn Beetle</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Longitarsus fowleri</i></td> <td>A flea beetle</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Longitarsus lycopi</i></td> <td>A flea beetle</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Psylliodes luteola</i></td> <td>A flea beetle</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Polydrusus flavipes</i></td> <td>A broad-nosed weevil</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Agabus labiatus</i></td> <td>A diving beetle</td> <td>Near Threatened</td> </tr> <tr> <td><i>Agabus uliginosus var dispar</i></td> <td>A diving beetle</td> <td>Near Threatened</td> </tr> <tr> <td><i>Helophorus granularis</i></td> <td>A grooved water-scavenger beetle</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Enochrus quadripunctatus</i></td> <td>A water scavenger beetle</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Temnocerus longiceps</i></td> <td>A rhynchitid weevil</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Sepedophilus pedicularius</i></td> <td>A rove beetle</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Tachyporus formosus</i></td> <td>A rove beetle</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Trixagus gracilis</i></td> <td>A false click beetle</td> <td>RDB3 (pre-1994 criteria)</td> </tr> <tr> <td><i>Forficula lesnei</i></td> <td>Lesne's Earwig</td> <td>Nationally Scarce</td> </tr> <tr> <td><i>Geomyza apicalis</i></td> <td>An opomyzid fly</td> <td>Provisionally Nationally Scarce</td> </tr> </tbody> </table>	<i>Porrhomma convexum</i>	A linyphiid spider	Nationally Scarce	<i>Alopecosa cuneata</i>	A lycosid spider	Nationally Scarce	<i>Acupalpus exiguus</i>	A ground beetle	Nationally Scarce	<i>Polystichus connexus</i>	A ground beetle	Nationally Scarce; Near Threatened (Post-2001 IUCN criteria)	<i>Glaphyra umbellatarum</i>	Pear Shortwing Beetle	Nationally Scarce	<i>Poecilium alni</i>	White-banded Longhorn Beetle	Nationally Scarce	<i>Longitarsus fowleri</i>	A flea beetle	Nationally Scarce	<i>Longitarsus lycopi</i>	A flea beetle	Nationally Scarce	<i>Psylliodes luteola</i>	A flea beetle	Nationally Scarce	<i>Polydrusus flavipes</i>	A broad-nosed weevil	Nationally Scarce	<i>Agabus labiatus</i>	A diving beetle	Near Threatened	<i>Agabus uliginosus var dispar</i>	A diving beetle	Near Threatened	<i>Helophorus granularis</i>	A grooved water-scavenger beetle	Nationally Scarce	<i>Enochrus quadripunctatus</i>	A water scavenger beetle	Nationally Scarce	<i>Temnocerus longiceps</i>	A rhynchitid weevil	Nationally Scarce	<i>Sepedophilus pedicularius</i>	A rove beetle	Nationally Scarce	<i>Tachyporus formosus</i>	A rove beetle	Nationally Scarce	<i>Trixagus gracilis</i>	A false click beetle	RDB3 (pre-1994 criteria)	<i>Forficula lesnei</i>	Lesne's Earwig	Nationally Scarce	<i>Geomyza apicalis</i>	An opomyzid fly	Provisionally Nationally Scarce	
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Species/Species Group	Summary of Baseline			Key Habitats
	<i>Blaesoxipha plumicornis</i>	A Fleshfly	Provisionally Near Threatened	
	<i>Sarcophaga subulata</i>	A fleshfly	Provisionally Nationally Scarce	
	<i>Triglyphus primus</i>	A hoverfly	Nationally Scarce	
	<i>Campiglossa malaris</i>	A tephritid fly	RDBK 'unknown'	
	<i>Merzomyia westermanni</i>	A tephritid fly	Nationally Scarce	
	<i>Macrosteles sardus</i>	A planthopper	New to Britain	
	<i>Ceraleptus lividus</i>	Slender-horned Leatherbug	Nationally Scarce	
	<i>Criomorphus williamsi</i>	A planthopper	Nationally Scarce Nb	
	<i>Megalonotus antennatus</i>	A ground bug	Nationally Scarce	
	<i>Lygus pratensis</i>	A mirid bug	Nationally Rare (RDB3 - pre 1994)	
	<i>Nomada fucata</i>	Painted Nomad Bee	Nationally Scarce	
	<i>Lasioglossum pauxillum</i>	Lobe-spurred Furrow Bee	Nationally Scarce	
	<i>Lasioglossum puncticolle</i>	Ridge-cheeked Furrow Bee	Nationally Scarce	
	<i>Sphecodes rubicundus</i>	Red-tailed Blood Bee	Nationally Scarce	
	<i>Anoplius caviventris</i>	A spider-hunting wasp	Nationally Scarce	
	<i>Auplopus carbonarius</i>	A spider-hunting wasp	Nationally Scarce	
	<i>Priocnemis hyalinata</i>	A spider-hunting wasp	Nationally Scarce	
	<i>Tiphia minuta</i>	Small Tiphia	Nationally Scarce Nb	
	<i>Dolichovespula saxonica</i>	Saxon Wasp	pRDBK	
	<i>Odynerus melanocephalus</i>	Black-headed Mason Wasp	s41 Nationally Scarce	
	<i>Amphinemura standfussi</i>	A stonefly	Nationally Scarce	
	<i>Anisus spirorbis</i>	Button Ramshorn	Data Deficient	

2.12 Protected and notable species which have been confirmed as absent are:

- Marsh fritillary butterfly (*Euphydryas aurinia*) - not recorded since 2005;(now largely accepted to have been an unsuccessful introduction attempt by a member of the public), with suitable habitat for the species (including presence of the primary larval foodplant devil's bit scabious) declining due to lack of management. Therefore, this species is assessed as being likely to be absent from the Application Site; and
- Dormouse (*Muscardinus avellanarius*) - based on survey results, considered likely to be absent from the Application Site.

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Section 3 Summary of Development Proposals

- 3.1 The Proposed Development comprises: *Residential development for up to 250 dwellings including affordable housing and ancillary uses including retained Local Wildlife Site, public open space, play areas, localised land remodelling, compensatory flood storage, structural planting and access.*
- 3.2 The Application Site area extends to 22.71 ha. The Open Space Parameter Plan is provided in **Annex EDP 1**, whilst the Land Use and Access and Movement Parameter Plans are provided as **Annexes EDP 3** and **4** respectively. The Ecological Restoration Zone which is the subject of the Ecological Management Plan measures 13.4ha.
- 3.3 The key ecological constraints, opportunities and principles which have shaped the design are as follows:
- Application of the mitigation hierarchy in sequence - i.e. 1) avoid impacts where possible; 2) minimise impacts which cannot be avoided; and 3) compensate for impacts which cannot be avoided or minimised through enhanced or existing ecological features and/or creation of new ecological features;
 - Gavray Drive Meadows LWS – development is excluded from within the LWS boundary and a suitable buffer/interface between the development and the LWS is incorporated through inclusion of additional land within the CTA from which development is also excluded;
 - River Ray CTA – development is excluded from within the CTA boundary enabling the retention and enhancement of those habitats located within the CTA but outside of the LWS, to improve the connectivity and resilience of the ecological network;
 - Other important habitats – development to retain and buffer the other important habitats within the Application Site that lie outside of the LWS wherever possible, including native species-rich hedgerows and scrub, and species-rich neutral and marshy grassland;
 - Biodiversity Net Gain – the residential development and associated green and blue infrastructure is located on land of the lowest ecological value, and the quantum of habitat/biodiversity lost to development will be offset through enhancement of retained habitats (within and without the LWS) to achieve a net gain in biodiversity of 10% or more; and
 - Public access and open space – provide public open space and walking routes to enable outdoor recreation for health, wellbeing and an appreciation of nature, whilst protecting the most ecologically sensitive parts of the Application Site.

- 3.4 Whilst specific species are not mentioned above, it is anticipated that the principles set out above will ensure the quantity, quality and diversity of habitats within the Application Site are such that existing species populations would be maintained or enhanced.

Section 4

Management Objectives and Rationale

- 4.1 The overall aim of this EMP is to restore and enhance existing habitats within the ERZ, including those of most value and also those within areas of limited existing ecological value, in line with the reason for designation and objectives of the Gavray Drive Meadows LWS and River Ray CTA, and in order to achieve a net gain in biodiversity.
- 4.2 The overall aim/vision for the ERZ is illustrated on **Plan EDP 2**.

Management Objectives

- 4.3 The management objectives set out in the following section should be read in conjunction with **Plan EDP 3** (Ecological Management Plan – Compartments) and **Plan EDP 4** (Ecological Management Plan - Access).

Objective 1: Manage Recreational Pressure within Gavray Drive Meadows LWS

- 4.4 The LWS currently suffers from a range of ‘urban edge effects’ such as unauthorised access for dog walking in the open fields and rough sleeping, fires and littering in secluded/wooded areas. Some of these effects would likely reduce as a result of increased natural surveillance and implementation of a regular management regime associated with the Proposed Development. However, it is recognised that unmanaged recreational use of the site by residents of the new housing development could lead to further deterioration in the ecological interest of the LWS.
- 4.5 It is proposed that this will be avoided through a combination of the following:
- Measures to limit/control access (particularly by dog walkers) within Compartments B, D and E (the ‘core’ of the LWS where the botanical interest is the highest and where grazing is proposed) including maintenance of dense thorny hedges or woodland/scrub edge and stock proof fencing. Styles will be installed in fences to permit access without dogs and secure access gates installed in key locations for management access;
 - A regime of regular litter picking, provision of bins for dog waste and signs promoting responsible dog ownership;
 - A series of open spaces, linked by a clearly defined circular footpath route, to provide alternative recreational opportunities and alleviate potential pressure on the LWS ‘core’. This includes managed access through Compartments A, F and I (within the LWS but of lower value and/or sensitivity), additional informal public open space in Compartments J and K, and other formal/amenity space and play areas outside the Ecological Restoration Zone;

- Linking the above proposed circular footpath route with other current formal and selected informal routes located outside the ERZ; and
- Provision of educational material such as signs, interpretation boards and householder information packs, for increasing public awareness and 'ownership' of the LWS and its surroundings.

4.6 The proposed publicly accessible routes within and adjacent to the ERZ are illustrated on **Plan EDP 4**.

Objective 2: Establish an Extensive Grazing (or similar) Regime in Compartments B, D, E, G and H to Restore, Maintain and Enhance the Grassland Interest of the Compartments

4.7 Gavray Drive Meadows LWS is designated primarily due to its grassland interest, the best surviving examples of which are located in Compartments B, D and E as shown on **Plan EDP 2**. The grassland interest is currently under threat from the lack of appropriate grassland management, which is leading to the encroachment of scrub, rank grassland and tree colonisation. Unless appropriate management is implemented, the grassland interest of the LWS will eventually be lost.

4.8 Compartments G and H are open grasslands currently under regular management; however, this entails cutting for silage in early summer, which suppresses the botanical diversity by removing the flower heads of many wildflowers before they have set seed and preventing the recruitment of young plants, whilst existing older plants die off.

4.9 In these compartments, where public access will be either excluded or very limited, the optimal management regime to restore and maintain the lowland meadow/species-rich neutral grassland habitat is low intensity grazing by hardy cattle or ponies. This approach will be pursued subject to an appropriate local grazier being available.

Objective 3: Establish Hay Cutting Regime in Compartments A, J and K to Restore, Maintain and Enhance the Grassland Interest of these Compartments

4.10 Compartment A is a long, narrow strip of land on the northern edge of the LWS beside the railway line. The grassland interest here has suffered partly as a result of a lack of management resulting in scrub encroachment, and was also damaged during railway infrastructure works (which resulted in the complete loss of the previous northerly extent of the LWS) leaving areas of disturbed/bare ground.

4.11 Owing to the location of Compartment A, and the proposals to provide a public access route through this area linking the western and eastern development areas (and where an informal trodden path/desire line already exists), it is proposed to restore the grassland through a hay cutting regime rather than grazing.

- 4.12 Compartment J is currently cut for silage in early summer, which suppresses the botanical diversity as described above. This compartment will form a part of the informal public open space, albeit with access managed by provision of mown paths through the generally tall grassland. Accordingly, it is proposed to restore the grassland through a hay cutting regime rather than grazing, with cutting taking place in late summer to enable more plants to successfully set seed and with the hay making process actively facilitating the spread of wildflower seed.
- 4.13 Compartment K will also form a part of the ERZ. This compartment requires scrub control to restore the existing grassland interest (refer to Objective 4), after which a hay cutting regime would be implemented to maintain it.
- 4.14 In all compartments managed by hay cutting, a margin of approximately 5m in width around the edges will be cut less frequently, i.e. on a 5-year rotation with only 20% cut in any one year, to maintain a grassland/scrub edge ecotone.

Objective 4: Selectively Remove Excessive Scrub in Compartments A, B, D, E and K and Maintain a Stable Distribution of this Habitat within these Compartments

- 4.15 Establishing a grazing and/or hay cutting regime within compartments A, B, D, E and K will serve to control future scrub encroachment within these species-rich grassland habitats. However, existing scrub encroachment, due to the lack of appropriate management, is currently posing a major threat to the long-term interest of the grassland habitats.
- 4.16 Acknowledging the importance of woody scrub and bramble for a wide range of wildlife species present on the site, it is proposed to gradually (i.e. in increments of 5-10% every 2-3 years) reduce the average scrub cover in the interiors of the compartments to approximately 10% and to then maintain a stable distribution at this level through periodic control of new growth.
- 4.17 In addition to the above, new native scrub will be planted or allowed to naturally develop on the northern edge of Compartment A beside the railway security fence. This new scrub habitat, indicated approximately on **Plan EDP 3** by sub-compartments A(i) and A(ii), will create a more sheltered, warm south facing scrub/grassland ecotone which will benefit a range of species and invertebrates in particular. This will also enhance the experience of the public walking through Compartment A.

Objective 5: Establish Permanent Zones of Blackthorn Scrub with a 20-year Coppice Cycle

- 4.18 Blackthorn scrub at a range of successional stages, from young suckering growth to tall mature stands, is required to provide breeding habitat for black and brown hairstreak butterflies of which particularly important populations are supported by the Application Site.
- 4.19 Therefore, in addition to scrub patches being maintained in the species-rich grassland as described under Objective 4 above, and in addition to sensitive management of blackthorn

within retained hedgerows and woodland edges as described in Objectives 9 and 10 below, dedicated zones of blackthorn will be retained as indicated approximately on **Plan EDP 2** by sub-compartments A(iii), A(iv), B(i), D(i), E(i), E(ii), G(i) and I(ii).

- 4.20 These zones will, collectively (in two or three groups), be subject to annual coppicing (i.e. cutting to just above ground level and allowing stumps to regenerate), with only a proportion coppiced each year and each patch only coppiced every 20 years.

Objective 6: Preserve Veteran Oak Trees and Promote Establishment of New 'Parkland' Oaks within Compartment C

- 4.21 The line of mature and veteran oak trees on the boundary between Compartments B and D provide a valuable wildlife habitat. Being located in an area with limited or no public access, these trees will be left to naturally senesce, drop limbs etc. and be left standing as they eventually die to provide valuable deadwood habitat. However, the trees will be inspected regularly for storm damage which may identify the need for some minimal interventions to extend their life. Fencing may also be required to avoid excessive trampling from grazing animals at the bases of these trees which could harm the roots or associated mycorrhizal fungi in the soil.
- 4.22 In addition to the above, a small selection of the self-sown oaks within Compartments B and D will be retained during the scrub clearance activities, and protected by fencing if necessary from the potential impact of grazing animals or deer etc., to create a new generation of future veteran 'parkland' oaks.

Objective 7: Extend Life of Mature Crack Willows along the Langford Brook

- 4.23 The mature crack willows beside Langford Brook provide a valuable wildlife habitat, however, these trees are prone to splitting apart as they mature, which could pose a risk to the public in the accessible parts of the Application Site. The trees will be inspected regularly and, where appropriate, a traditional regime of pollarding will be implemented to promote the development of thick stemmed specimen trees with an associated variety of microhabitats.

Objective 8: Establish New Species-rich Neutral and Marshy Grassland within Compartments E and K

- 4.24 Compartments E and K currently comprise approximately 60 – 80% dense scrub coverage, albeit overlying former species-rich neutral and marshy grassland. New species-rich neutral and marshy grassland will therefore likely be established in these compartments through clearance of existing scrub and a combination of natural regeneration from the existing seedbank supplemented by the application of green hay/locally sourced seed depending on the success of the natural regeneration.

Objective 9: Restore Remnant Hedge Lines

- 4.25 The hedgerows within the Application Site are currently unmanaged and as a result are forming the nuclei for scrub encroachment, to the detriment of any botanical species in the field layer of the hedgerows. Locally, the hedgerows have been lost as a result of the lack of appropriate management, being replaced by tree lines.
- 4.26 It is therefore proposed to restore remnant hedge lines that are still capable of being restored, as shown on **Plan EDP 3**, through a traditional hedge laying technique. The restoration, and long-term management, will take into account those species present within the Application Site that use hedgerow species including nesting birds, bats and hairstreak butterflies. A staged approach will be adopted, comprising laying on a 10+ year rotation and a three to five-year rotation for trimming. In any one year no more than 10% of the hedgerows will be laid and no more than 30% will be trimmed.

Objective 10: Maintain and Enhance Woodland and Mature Scrub

- 4.27 Existing woodland and mature scrub (compartment F) will be maintained through annual trimming of edges (no more than 20% per year) to prevent scrub encroachment into grassland and/or to maintain existing public rights of way. The health of any mature trees within or near to areas open to public access will be subject to annual inspections to ensure these do not pose a risk to health and safety.
- 4.28 In addition to the above, the dense scrub that has become established in compartment I will be largely retained and allowed to continue to develop into scrub-woodland. A 'ride' approximately 10m in width will be cut through this scrub-woodland to facilitate the circular walking route between compartments A and J and to enhance opportunities for a range of wildlife including invertebrates in particular. This ride will be managed to promote a grassland/scrub ecotone, with a regularly mown/surfaced central pathway, a zone either side of the pathway cut annually in late summer, and the outer edges cut on a 5-year rotation with only 20% cut in any one year.

Objective 11: Maintain and Enhance Existing Wetland and Ponds and Newly Created Wildlife Ponds

- 4.29 The existing ponds, and sedge swamp habitat in compartment A(v) will be desilted, and excessive scrub encroachment selectively removed, during the construction phase of the Proposed Development (with specific mitigation measures required, to be provided in an Ecological Construction Method Statement (ECMS) or similar, and as part of a Natural England Great Crested Newt development licence). In addition, three new wildlife ponds (in addition to the attenuation ponds to be created outside the Ecological Restoration Zone) will be created in compartments G, H and J, and the linear strips of wetland/marsh on the eastern edge of compartment J (formed by historic ridge and furrow) will be maintained in the long-term.

- 4.30 Following these initial works, the long-term management of these wetlands and ponds to maintain their ecological value will be relatively minimal and involve vegetation and scrub control and occasional desilting every 5-10 years.

Objective 12: Maintain and Enhance Habitat for Invertebrates

- 4.31 The habitat restoration and enhancement measures outlined above under Objectives 2 to 11 above will maximise the range and diversity of micro-habitats, and the availability of foodplants and nectar sources, to benefit of the invertebrate population.
- 4.32 In addition to the overall provision of a species-rich habitat mosaic, Objectives 5, 9 and 10 above are specifically targeted at maintaining the important populations of black and brown hairstreak butterfly, which require blackthorn in different successional stages, with a large proportion of habitat left uncut in any one year, for successful breeding.
- 4.33 Specific measures are also proposed which are targeted at maintaining the important population of white-letter hairstreak butterfly. This species requires elm for successful breeding and is therefore susceptible to the loss of elm from Dutch elm disease, which typically infects trees/regrowth at 12 years old. Therefore, elm trees with flowering, suckering regrowth will be identified and retained and, if necessary, neighbouring trees pruned to reduce shading, and a proportion of these will be coppiced each year on a 10-year rotation.
- 4.34 Whilst the measures above single out a relatively small number of individual lepidoptera species these will benefit a range of other invertebrate species. The results of proposed post-construction monitoring work will be used to ensure that management is appropriate to the species present within the Application Site.

Objective 13: Maintain and Enhance Habitat for Reptiles and Amphibians

- 4.35 The restoration and enhancement of grassland, scrub, woodland and ponds outlined above will maintain opportunities for breeding, foraging, refuge and dispersal of reptiles and amphibians within and around the Application Site.
- 4.36 In addition to management of existing habitats, new wildlife ponds and hibernacula created during the construction phase (and to be included in the ECMS) will be managed thereafter to maintain their value to reptiles and amphibians. Additional log and brash piles will be created (and refreshed) using material from tree, scrub or hedgerow cutting operations.

Objective 14: Maintain and Enhance Roosting, Foraging and Commuting Opportunities for Bats

- 4.37 The habitat objectives set out above will also be of benefit to bats in terms of retaining natural roosting habitats in mature trees, linear habitats in sheltered dark conditions to aid navigation and foraging, and an abundance of insect prey. In addition, specific measures within the ECMS will ensure that new roosting opportunities are provided through the installation of durable bat boxes on retained mature trees in secluded locations. These

boxes will need to be specifically maintained (and replaced or repaired as necessary) thereafter.

Objective 15: Maintain and Enhance Habitat for Breeding and Wintering Birds

- 4.38 The habitat objectives set out above will also be of benefit to birds in terms of retaining natural nesting habitats in woody habitats and rough grass in undisturbed locations, shelter during the winter, and an abundance of summer food (e.g. invertebrates, fruits and berries) and winter food (e.g. invertebrates and seeds).
- 4.39 Owing to the extents of natural nesting habitat to be maintained on-site, it is not proposed to provide additional bird boxes in this instance, with the exception of a single barn owl box to be installed in a mature tree in compartment C.

Objective 16: Maintain and Enhance Habitat for Mammals

- 4.40 Surveys in 2020 recorded, for the first time, an otter spraint and footprints in the culvert where Landford Brook passes beneath Gavray Drive. Possible signs of water vole were also recorded but these were not definitive. The Langford Brook will be subject to limited interventions to enhance the habitat for otter and water vole, namely thinning of scrub/trees (e.g. crack willows as described above) to allow more light to reach the stream channel and banks, and regular removal of litter.
- 4.41 The habitat objectives set out in respect of the grassland, scrub, hedgerows and woodland will benefit harvest mouse, badger and hedgehog in terms of opportunities for shelter and forage.

Objective 17: Provide Clear Results of Monitoring to Inform the Management Plan Review Process

- 4.42 Flora and fauna at the Application Site will be recorded prior to the commencement of the management regime in order to update the existing baseline situation as set out in the ecology ES chapter. The baseline surveys will be devised to be both robust and repeatable in order to ensure that future monitoring of the flora and fauna can produce comparable results that can be recorded and interpreted in a manner which can then be used to assess the success of the management, with action taken as appropriate.
- 4.43 A database of biological records will be set up with records submitted to the Thames Valley Environmental Records Centre (TVERC).
- 4.44 This EMP will remain a live document capable of being updated at any time, however, a full review will be completed by the Wildlife Management Steering Group every 5 years and the EMP updated in part or in full as appropriate.

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Section 5 Management Prescriptions

5.1 **Table EDP 5.1** sets out detailed management prescriptions to be undertaken to meet the objectives set out in Section 4.

Table EDP 5.1 Detailed Management Prescriptions

Ref.	Description
Objective 1: Manage Recreational Pressure within Gavray Drive Meadows LWS	
1a	Establish/demarcate the public access route through Compartments A, F, I, J and K as shown approximately on Plan EDP 4 . Maintain route at approximately 2m width, primarily through regular mowing of grass between April and October. Surfacing of route to be considered, e.g. with hoggin/crushed stone, where damp conditions present a risk of erosion through repeated footfall.
1b	Install styles and signage to discourage access with dogs in compartment fencing at locations shown approximately on Plan EDP 4 , to provide controlled access within the grazed/core management compartments. Styles to be checked annually for damage and remedial actions taken as necessary.
1c	Install Interpretation Boards at either end of the public access route. Boards to be checked annually for damage and remedial actions taken as necessary.
1d	Install dog waste bins and signage on responsible dog ownership at either end of the public access route and maintain through regular emptying. Bins and signage to be checked annually for damage and remedial actions taken as necessary.
1e	Quarterly inspections and removal of litter throughout the ERZ.
1f	Prepare and distribute householder information packs in line with occupation of new dwellings in the development.
1g	Install secure gates to facilitate access by vehicles and machinery, and movement of livestock, in compartment fencing at locations shown approximately on Plan EDP 4 . Gates to be checked monthly for damage and remedial actions taken as necessary.
Objective 2: Establish an Extensive Grazing (or similar) Regime in Compartments B, D, E, G and H to Restore, Maintain and Enhance the Grassland Interest of the Compartments	
2a	All fields to be fenced with stock-proof fencing and vehicular access (i.e. to enable access by a vehicle/tractor and trailer) will be provided and maintained at designated points as indicated on Plan EDP 4 . Access gates to be locked at all times other than when stock removal/rotation is required.
2b	Fence lines/gates to be checked prior to each grazing season and remedial actions taken as necessary.
2c	Provision of drinking water for cattle/ponies within each compartment. The location of watering points to be chosen carefully to prevent poaching and damage to core of grassland interest in each compartment.
2d	Ensure that no inorganic or organic (other than those produced by stock) fertilisers are added (including lime).

Ref.	Description
2e	Introduce cattle or pony grazing at an intensity of 0.4 to 0.7 livestock units per hectare in order to produce a sward height of between 10 and 15cm. If possible, traditional breeds of cattle and ponies will be used. Sheep grazing will not be used at any time.
2f	Grazing intensities to be monitored to ensure optimal sward conditions maintained. The grazing regime will be put in place during spring and summer months with stock removed when the sward becomes shorter than 10cm or if the ground becomes too wet. When grazing needs to be ceased animals will be removed to an area of land outside the grazed compartments (location to be determined).
Objective 3: Establish Hay Cutting Regime in Compartments A, J and K to Restore, Maintain and Enhance the Grassland Interest of these Compartments	
3a	Implement a hay cutting regime, to comprise an annual cut to be undertaken in mid-July - August, after species have set seed and the seed has dropped. All cuttings to be removed (once turned and dried).
3b	Maintain a margin of approximately 5m in width around the edges of Compartments, which will be cut less frequently, i.e. on a 5-year rotation with only 20% cut in any one year, to maintain a grassland/scrub edge ecotone, allowing late flowering species to set seed and to retain a nectar source for late-flying insects. Create scalloping and a diversity of structure of both scrub and grassland within the ecotone.
3c	Additional cutting on at least two occasions to be undertaken before end of November, to a height of 40-75mm. A spring cut may also be appropriate (to be undertaken by the end of April) based on an assessment of the sward condition.
3d	For Compartment K which has become encroached by scrub, a hay cutting regime should be commenced in the year following scrub removal, assuming successful grassland establishment in those areas.
Objective 4: Selective Removal of Excessive Scrub in Compartments A, B, D, E and K and Maintain a Stable Distribution of this Habitat within these Compartments; development of new scrub in Compartment A	
4a	Phased removal of selected encroaching scrub, comprising 5-10% every 2-3 years to reduce the average scrub cover within the interiors of Compartments to approximately 10%; once achieved retain scrub at this coverage on an ongoing basis. Stack some brushings/logs on-site in appropriate locations adjacent to retained scrub/hedgerow, to create dead wood habitat and shelter. Remove or burn the remainder.
4b	In Compartment A (sub-compartments Ai and Aii), a strip of new native scrub will be planted and/or allowed to naturally regenerate alongside the railway security fence, to be maintained as indicated on Plan EDP 3 .
Objective 5: Establish Permanent Zones of Blackthorn Scrub with a 20 year Coppice Cycle	
5a	Dedicated zones of blackthorn will be retained as indicated approximately on Plan EDP 3 by sub-compartments A(iii), A(iv), B(i), D(i), E(i), E(ii), G(i) and I(ii), via collective (in two or three groups) annual coppicing, with only a proportion coppiced each year and each patch coup coppiced every 20 years. Adjacent coups should be coppiced sequentially to enable movement/colonisation.
5b	Stack some brushings/logs on-site in appropriate locations adjacent to retained scrub/hedgerow, to create dead wood habitat and shelter. Remove or burn the remainder.

Ref.	Description
Objective 6: Preserve Veteran Oak Trees and Promote Establishment of New 'Parkland' Oaks within Compartment C; retention of self-seeded oaks within Compartments B and D	
6a	Mature/veteran oak trees retained as both living and standing dead wood habitat. Annual arboricultural inspection for damage (and following storm events) to identify any minimal interventions required to extend tree life.
6b	Where appropriate, installation of robust temporary or permanent fencing to avoid excessive trampling around root zones.
6c	Selected self-sown oaks present in Compartments B and D to be retained and protected, where necessary by robust stock-proof fencing, in order to create future veteran parkland oaks.
Objective 7: Extend Life of Mature Crack Willows along the Langford Brook	
7a	Regular inspection of mature crack willows along the Langford Brook to identify any arboricultural works required for the benefit of public safety. Annual inspection for damage (and following storm events) to identify any minimal interventions required to extend tree life.
7b	Implementation of a traditional phased pollarding rotation to develop multi stemmed trees, retain vigour, extend tree life and create variation in shading levels along the Langford Brook, benefitting ruderal vegetation and species.
Objective 8: Establish New Species-rich Neutral and Marshy Grassland within Compartments E and K	
8a	Following scrub clearance and maintenance of cleared areas free from scrub and undesirable species via mechanical clearance and/or spot treatment, green hay sourced from hay cuts in Compartments A, J and K should be applied on areas of bare ground, then rolled. Should a green hay application not be possible, locally sourced neutral grassland seed should be broadcast, thereafter treatment implemented to establish the sward.
8b	Assuming successful germination the areas should be subject to a light cut in autumn. In year 2 and subsequent years an annual hay cut should be undertaken until the sward is established. Once established the hay cut regime should be implemented as per Objective 3.
Objective 9: Restore Remnant Hedge Lines	
9a	Implement traditional hedgerow management to restore remnant hedgerows, as shown on Plan EDP 3 . Management to include laying on a 10+ year rotation with no more than 10% of the hedgerows laid in any one year.
9b	Trimming of hedgerows on a three to five-year rotation with no more than 30% of the hedgerows trimmed in any one year. Arisings to be removed from the core grassland areas of interest and from the bases of hedgerows.
Objective 10: Maintain and Enhance Woodland and Mature Scrub in Compartments F and I	
10a	Annual trimming to maintain woodland and scrub edge habitat (compartment F) will be implemented (no more than 20% per year) to prevent scrub encroachment into grassland and/or to maintain existing public rights of way.

Ref.	Description
10b	Trees located within/close to publicly accessible areas to be subject to an annual arboricultural inspection to ensure any risk to health and safety is minimised.
10c	Retention of dense scrub in Compartment I and management to encourage development into scrub-woodland mosaic habitat, to include retention of selected standards and mature shrub species, selected thinning to promote development of a field layer and understorey, retention of standing and fallen dead wood habitat.
10d	A 'ride' approximately 10m in width will be cut through the scrub-woodland in Compartment I to facilitate the circular walking route between compartments A and J. Management of the ride to include regular mowing and/or creation of a surfaced central pathway, a zone either side of the pathway cut annually in late summer, and the outer edges cut on a 5-year rotation with only 20% cut in any one year.
Objective 11: Maintain and Enhance Existing Wetland and Existing and Newly Created Ponds	
11a	Initial restoration of ponds (through scrub clearance) and excavation of new ponds to be undertaken during the construction phase in line with great crested newt EPS licensing requirements (Method Statement to be detailed separately).
11b	Management of restored/new ponds to comprise removal of up to one quarter of aquatic and marginal vegetation on an annual basis (if required), annual scrub control to prevent excessive shading (with removal of arisings away from core grassland interest) and de-silting every 5 – 10 years (no more than 25% of a pond in one operation).
11c	Regular inspections to be undertaken to determine levels of poaching by stock and/or any human disturbance. Fencing (and ongoing maintenance of fencing) to prevent damage to some ponds may be necessary.
Objective 12: Maintain and Enhance Habitat for Invertebrates	
12a	Specific measures to maintain the population of white-letter hairstreak butterfly and identification and retention of existing elm trees with flowering, suckering regrowth and, if necessary, pruning of neighbouring trees to reduce shading; plus coppicing of a proportion of these on a 10 year rotation.
Objective 13: Maintain and Enhance Habitat for Reptiles and Amphibians	
13a	6 No. amphibian hibernacula (also of benefit to reptiles) to be created in close proximity to newly created and existing ponds (see Plan EDP 5) during construction in line with great crested newt (GCN) EPS licensing requirements (Method Statement to be detailed separately). Annual checks to be undertaken thereafter to inform any required actions including repairing structure or refreshing with new material and organic components decompose.
13b	8 No. Log/brush piles for amphibians and reptiles to be created in sheltered, sunny locations, and subsequently maintained/refreshed, using arisings from tree, scrub or hedgerow cutting operations.
Objective 14: Maintain and Enhance Roosting, Foraging and Commuting Opportunities for Bats	
14a	10 No. bat boxes to be erected on mature trees (see Plan EDP 5) during the construction phase to be maintained and any defective boxes replaced – condition of boxes to be checked every 5 years.

Ref.	Description
14b	Any tree works required as part of management or to satisfy health and safety requirements, will include checks for roosting/hibernating bats by a qualified bat worker prior to the works commencing, and tree climbing surveys undertaken where necessary.
Objective 15: Maintain and Enhance Habitat for Breeding and Wintering Birds	
15a	1 No. barn owl box to be installed in a mature tree in Compartment C (see Plan EDP 5). Checks of the condition of the box will be made every 5 years thereafter, and the box will be replaced if necessary.
Objective 16: Maintain and Enhance Habitat for Mammals	
16a	No specific prescriptions required as objective met by other measures detailed above.
Objective 17: Provide Clear Results of Monitoring to Inform the Management Plan Review Process*	
17a	Report to be produced at the end of each calendar year detailing all management operations undertaken in the previous 12 months.
17b	Establish permanent quadrats in Compartments A, B, D, E, G, H, J and K to monitor vegetative composition and structure of sward via NVC and photographic survey. Survey to be undertaken every 3 years for first 15 years and frequency reviewed thereafter.
17c	Scrub encroachment within grassland areas to be monitored via mapped extent or interrogation of aerial imagery. Survey to be undertaken every 3 years for first 15 years and frequency reviewed thereafter.
17d	Visual and refugia-based reptile survey to be undertaken every 5 years for first 15 years and frequency reviewed thereafter.
17e	Amphibian pond surveys to be undertaken in line with great crested newt (GCN) EPS licensing requirements (Method Statement to be detailed separately) in the first instance. Surveys then to be undertaken every 5 years for first 15 years and frequency reviewed thereafter.
17f	Bat box check, to record usage by bats, to be undertaken every 5 years for first 15 years and frequency reviewed thereafter.
17g	Winter egg searches for brown, black and white-letter hairstreak butterflies to be undertaken every 5 years for first 15 years and frequency reviewed thereafter.
17h	Summer invertebrate sampling surveys to be undertaken every 5 years for first 15 years and frequency reviewed thereafter.
17i	Otter and water vole surveys of the Langford Brook to be undertaken every 5 years for first 15 years and frequency reviewed thereafter.
17j	CreaSpecies data to be submitted to the Thames Valley Environmental Records Centre (TVERC).
17k	Full review of Ecological Management Plan, based on information collected as described above, every 5 years after commencement. Plans and management prescriptions to be modified as necessary and updated EMP produced.

*Surveys to be completed by suitably qualified persons with Natural England survey licences where appropriate. The survey and monitoring actions detailed above represent minimum commitments to provide sufficient information to review the success or failure of the management plan. It is

acknowledged, however, that local volunteer groups may wish to undertake a broader range of species surveys, or conduct surveys on a more regular basis, than is set out above. Provided this does not conflict with management operations, additional recording will be encouraged and facilitated, and the data incorporated where appropriate into the monitoring and review process.

Section 6

Work Programme: Years 1 - 5

- 6.1 The responsibility for the undertakings set out within this EMP rests with the relevant adopting authority or management organisation, to be determined. Long-term funding for management of the Ecological Restoration Zone subject to this EMP will be secured within a Section 106 Agreement attached to planning consent for the Proposed Development.
- 6.2 Detailed timings for the delivery of management prescriptions in the long-term (year 5 onwards) have not been provided in detail. Instead, broad management recommendations have been provided which will be informed by a review of the EMP annually during the first 5 years, then on 5-yearly intervals.
- 6.3 The following tables provide a summary timetable of the timings and actions of the management plan, to be undertaken between Years 1 and 5. Year 1 is taken as being the 12-month period from the first dwelling occupied.
- 6.4 It is envisaged that the prescriptions and timetable provided in Sections 5 and 6 would be used by the management organisation to create an annual programme of works to guide the management operations to be completed in the following 12-month period.

Table EDP 6.1 Detailed Management Prescriptions

	Prescription	J	F	M	A	M	J	J	A	S	O	N	D	Notes
Objective 1: Manage Recreational Pressure within Gavray Drive Meadows LWS														
1a	Establish/demarcate the public access route through Compartments A, F, I, J and K													Year 1 create path. Maintenance as required. Mowing to be undertaken in dry conditions.
1b	Install styles and signage to discourage access with dogs													Year 1 install styles and signage. Maintenance as required.
1c	Install Interpretation Boards at either end of the public access route													Year 1 install Boards. Maintenance as required.
1d	Install dog waste bins and signage at either end of the public access route and maintain through regular emptying													Year 1 install bins and establish how frequently emptying is required. Maintenance as required.
1e	Litter picking and disposal off-site													Undertake quarterly.
1f	Install secure gates to facilitate access by vehicles and machinery, and movement of livestock													Year 1 install Gates and provide padlock keys/codes to all relevant parties. Maintenance as required.
Objective 2: Establish an Extensive Grazing (or similar) Regime in Compartments B, D, E, G and H to Restore, Maintain and Enhance the Grassland Interest of the Compartments														
2a	Implement stock proof fencing/vehicular access													Year 1 before start of grazing
2b	Maintain fencing/gates													Annually prior to grazing season
2c	Provision of drinking water for stock													Year 1 before start of grazing; regular checks when stock on fields
2d	No fertiliser application													
2e	Grazing													Annually
2f	Manage stock grazing intensity													Check 3 times per season and adjust accordingly

Prescription		J	F	M	A	M	J	J	A	S	O	N	D	Notes
Objective 3: Establish Hay Cutting Regime in Compartments A, J and K to Restore, Maintain and Enhance the Grassland Interest of these Compartments														
3a	Hay cut and removal of arisings													Annually mid-July - August
3b	Maintain 5m margin (cut 20% annually)													On 5 year rotation
3c	Supplementary hay cut													Autumn and spring – to be determined based on growth rates and sward condition
3d	Establish hay cut regime Compartment K													Year after scrub removed/grassland established
Objective 4: Selective Removal of Excessive Scrub in Compartments A, B, D, E and K and Maintain a Stable Distribution of this Habitat within these Compartments; development of new scrub in Compartment A														
4a	Phased removal of encroaching scrub													5-10% on 2 - 3 year rotation. Timed in winter to avoid harm to nesting birds. Will result in loss of some hairstreak butterfly eggs but only a small proportion in any one year
4b	Regeneration of additional scrub Compartments Ai, Aii													Year 1 mark out new scrub zones. Review scope for natural regeneration and whether planting required. Review success of growth and need for trimming after 3 years.
Objective 5: Establish Permanent Zones of Blackthorn Scrub with a 20 year Coppice Cycle														
5a	Coppicing of retained blackthorn scrub													Annual coppicing of 2-3 coups on 20 year rotation
5b	Retention of proportion of brushings/logs													For creation of habitat piles
Objective 6: Preserve Veteran Oak Trees and Promote Establishment of New 'Parkland' Oaks within Compartment C; retention of self-seeded oaks within Compartments B and D														
6a	Annual inspection of retained mature/veteran oaks													Annually and following storm events
6b	Install protective fencing (if required)													Year 1 prior to grazing

	Prescription	J	F	M	A	M	J	J	A	S	O	N	D	Notes
6c	Select self-sown oaks and protect with fencing if required													Year 1 prior to grazing
Objective 7: Extend Life of Mature Crack Willows along the Langford Brook														
7a	Annual inspection of retained crack willows													Annually and following storm events
7b	Pollarding of crack willows													Year 1, then 5 - 10 year rotation
Objective 8: Establish New Species-rich Neutral and Marshy Grassland within Compartments E and K														
8a	Green hay application/seeding													Year 1, and Year 2 if necessary
8b	Initial hay cutting													Year 2 onwards until sward established, then regime to be implemented as per Objective 3
Objective 9: Restore Remnant Hedge Lines														
9a	Hedge laying													Year 1, then 10+ year rotation
9b	Hedge laying													Year 1, then 3 - 5 year rotation
Objective 10: Maintain and Enhance Woodland and Mature Scrub in Compartments F and I														
10a	Maintain woodland/scrub edge habitat in Compartment F													Annual trimming (up to 20%/year)
10b	Annual inspection of trees to maintain health and safety in publicly accessible areas													Annually and following storm events
10c	Creation of scrub-woodland mosaic in Compartment I													Year 1 selective thinning, then review every 5 years
10d	Create and maintain woodland ride in Compartment I													Year 1 remove existing scrub and trees to create ride, then maintenance of central path (regular mow), inner edge (annual mow) and outer edge (mow on 5-year rotation with only 20% cut in any one year)
Objective 11: Maintain and Enhance Existing Wetland and Existing and Newly Created Ponds														

	Prescription	J	F	M	A	M	J	J	A	S	O	N	D	Notes
11a	Pond restoration and new pond creation													Timing likely prior to construction in line with GCN EPS licence requirements
11b	Management of restored/new ponds													Annual vegetation removal (up to 25%) and scrub control. De-silting 5-10 years
11c	Inspection of ponds and fencing if necessary													Annual inspection and review fencing requirements and maintenance
Objective 12: Maintain and Enhance Habitat for Invertebrates														
12a	Promotion of healthy elm trees for white-letter hairstreak													Year 1 identify existing elms for protection (prune nearby trees if necessary). Coppicing on a 10-year rotation
Objective 13: Maintain and Enhance Habitat for Reptiles and Amphibians														
13a	Create and maintain hibernacula													Timing of creation likely prior to construction in line with GCN EPS licence requirements. Annual checks, refresh as required
13b	Create and maintain log/brush piles													Year 1 create log/brush piles. Annual checks, refresh as required
Objective 14: Maintain and Enhance Roosting, Foraging and Commuting Opportunities for Bats														
14a	Erect and maintain bat boxes													Erect bat boxes Year 1. Check and replace if necessary, every 5 years thereafter
14b	Tree inspections for potential bat roosts													As required, based on need for tree works.
Objective 15: Maintain and Enhance Habitat for Breeding and Wintering Birds														
15a	Erect and maintain barn owl box													Install barn owl box Year 1. Check every 5 years thereafter.
Objective 16: Maintain and Enhance Habitat for Mammals														
N/A														As per habitat objectives above.
Objective 17: Provide Clear Results of Monitoring to Inform the Management Plan Review Process														

	Prescription	J	F	M	A	M	J	J	A	S	O	N	D	Notes
17a	Annual record of management operations													
17b	Monitor grassland sward in Compartments A, B, D, E, G, H, J and K													Year 1 and then every 3 years for first 15 years and frequency reviewed thereafter
17c	Monitor/map scrub extents in grassland areas													Year 1 and then every 3 years for first 15 years and frequency reviewed thereafter
17d	Visual and refugia-based reptile survey													Year 1 and then every 5 years for first 15 years and frequency reviewed thereafter
17e	Amphibian pond survey													As per GCN licence requirements initially (TBC), then every 5 years for first 15 years and frequency reviewed thereafter
17f	Bat box checks													Monitoring of bat boxes by licenced bat worker. Year 2 then every 3 years thereafter.
17g	Winter egg searches for brown, black and white-letter hairstreak													Year 1 and then every 5 years for first 15 years and frequency reviewed thereafter
17h	Summer invertebrate sampling surveys													Year 1 and then every 5 years for first 15 years and frequency reviewed thereafter
17i	Otter and water vole surveys of Langford Brook													Year 1 and then every 5 years for first 15 years and frequency reviewed thereafter
17j	Species data submitted to (TVERC)													Year 1 establish database for species records, collate and submit new information to TVERC every 5 years
17k	Full review of EMP													Review EMP and update (if necessary) every 5 years

Section 7

Summary and Conclusions

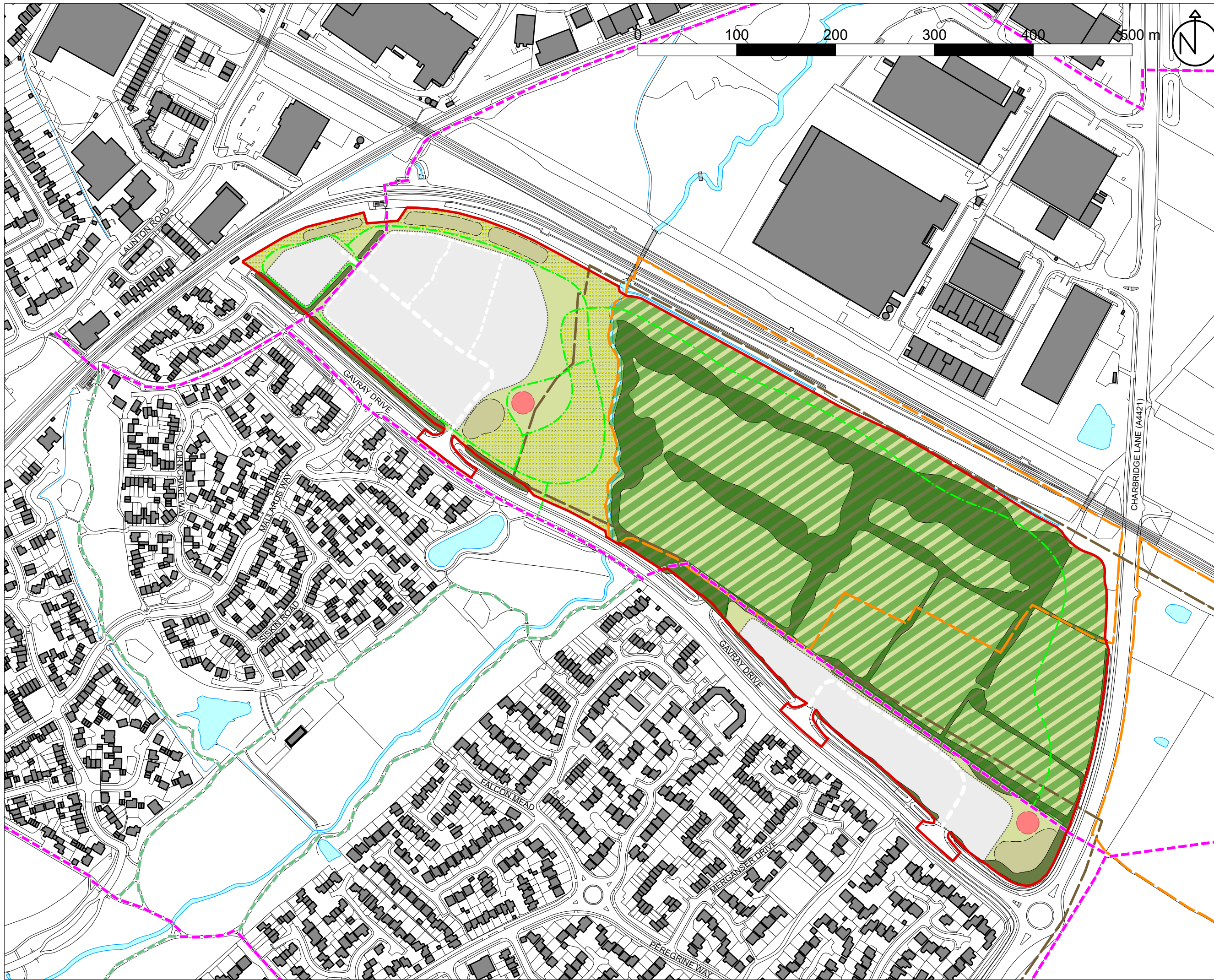
- 7.1 This EMP has been prepared in support of an outline planning application for the Proposed Development of 22.7 ha of land north of Gavray Drive, Bicester.
- 7.2 This document sets out a package of restoration and enhancement measures and suitable ongoing management of the portion of the Application Site which is covered by Gavray Drive Meadows Local Wildlife Site (LWS) and additional land directly adjacent which is part of the River Ray Conservation Target Area (CTA). This area is collectively termed the 'Ecological Restoration Zone' (ERZ).
- 7.3 This EMP describes the existing baseline and range of important ecological features, which has directly informed the management objectives for the ERZ. It then defines the management objectives and the detailed prescriptions required to deliver on these.
- 7.4 Subject to the implementation of the measures described, in line with the timing and frequency prescribed (but acknowledging the need for flexibility and adaptation in response to feedback from monitoring), the objective to restore and enhance existing habitats within the ERZ can be met. Similarly, the specific aims and objectives to benefit a wide range of habitats and species can also be achieved.
- 7.5 The restoration, enhancement and long-term management measures detailed within this EMP will deliver a range of benefits to wildlife and to the public. This will offset any negative effects resulting from the Proposed Development, deliver a net gain in biodiversity and secure the future of an ecological area which is highly valued by local people.

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Annex EDP 1

Open Space Parameter Plan

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PLANNING

- Site boundary (22.7ha)
- Residential development area
- Formal/amenity green space
- Informal/natural green space
- Ecological Restoration Zone
- Conservation Target Area
- Local Wildlife Site
- SuDS feature (top of bank shown)
- Existing trees/hedgerows/scrub to be retained
- Existing Public Rights of Way
- Existing recreational routes/footpaths
- Indicative recreational routes/footpaths
- Proposed play space (400sqm LEAP)
- Existing watercourses/waterbodies

Rev.	Date	Description
		Land north of Gavray Drive BICESTER
Open Space Parameter Plan		
Job ref: 239	Drawing number: P12	Revision: -
Scale: 1:3,500 @ A3		Date: April 2021







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Annex EDP 2 Summary of Habitats within the ERZ



Field No. (see Plan EDP 1)	Habitat Classification				Condition (ref. Defra Metric)	Botanical Survey Notes & Photos 2019/2020
	JNCC Phase 1	UK Habitat Code	NVC Code (if applicable)	Defra Metric 2.0		
F2	Marsh/Marshy Grassland	g3c7	MG9a	Other neutral grassland	Fairly poor	This field supports a considerable amount of scrub. Small pockets of relict coarse semi-improved neutral grassland / marshy grassland in mosaic with each other and the scrub were recorded in the south-eastern part of the field which was the only part where physical access was possible.
F3	Semi-improved Neutral Grassland	g3c6	MG6b	Other neutral grassland	Moderate	<p>This sward equates to a species-rich MG6b <i>Lolium perenne-Cynosurus cristatus</i> grassland <i>Anthoxanthum odoratum</i> sub-community.</p>  <p>F3: The drier grassland (MG6b) (08 June 2020)</p>
	Marsh/Marshy Grassland	g3c7	MG9a	Other neutral grassland	Moderate	<p>The majority of the furrows in this field support a marshy grassland community which is suggestive of seasonal inundation. Soft rush, creeping bent, tufted hairgrass and hairy sedge are locally very common along with some greater bird's-foot trefoil and marsh thistle. Yorkshire fog, rough meadow-grass, sweet vernal-grass, and creeping buttercup are also common. This most strongly equates to the MG9a <i>Holcus lanatus-Deschampsia cespitosa</i> grassland <i>Poa trivialis</i> sub-community.</p>  <p>F3: A typical example of a damp furrow (08 June 2020)</p>



Field No. (see Plan EDP 1)	Habitat Classification				Condition (ref. Defra Metric)	Botanical Survey Notes & Photos 2019/2020
	JNCC Phase 1	UK Habitat Code	NVC Code (if applicable)	Defra Metric 2.0		
	Marsh/Marshy Grassland	f2b/g3c7	M23b/MG9a	Purple moor grass and rush pastures	Moderate	<p>This community has some affinity to the M23b <i>Juncus effusus</i> / <i>acutiflorus-Galium palustre</i> rush-pasture <i>Juncus effusus</i> sub-community which is more typical of northern and western Britain and is rarely recorded in lowland England. There is also some resemblance to the MG9a found in the other ditches in this field. Differentiating between MG9a and M23b can be problematic as extremes of both sub-communities can frequently resemble each other.</p>  <p>F3: A typical example of a wet furrow (08 June 2020)</p>
F4	Dense/continuous scrub	h3h	N/A	Mixed scrub	Poor	This field is completely covered by dense scrub including blackthorn, oak and bramble.
F5	Semi-improved Neutral Grassland	u1a	N/A	Other neutral grassland	Moderate	<p>Fields F5 and F6 were significantly impacted by earthworks and infrastructural works (undertaken c. 2018) with the northern edges being incorporated within the railway estate and considerable destruction and degradation of the remaining sward. In 2019 bare ground and ephemeral / short perennial habitat dominated and ruderal / tall herb species were common, although patches of relict grassland were present. In 2020 a notable increase in vegetative cover was apparent across the fields with marshy grassland in particular becoming conspicuous. Scattered scrub is also present.</p>  <p>F5: sward re-establishing and becoming fairly species-rich (08 June 2020)</p>
F6	Semi-improved Neutral Grassland	u1a	N/A	Other neutral grassland	Moderate	See above

Field No. (see Plan EDP 1)	Habitat Classification				Condition (ref. Defra Metric)	Botanical Survey Notes & Photos 2019/2020
	JNCC Phase 1	UK Habitat Code	NVC Code (if applicable)	Defra Metric 2.0		
	Poor Semi-improved Grassland	u1a	N/A	Open mosaic habitats on previously developed land	Poor	 <p>F6: Disturbed ground plant communities (29 August 2020)</p>
	Swamp	f2a	S7	Fens (upland and lowland)	Moderate	<p>Along the southern edge of F6 is a large stand of lesser pond and several young plants of greater tussock; this equates to the S7 Carex acutiformis swamp although it was too small an area to be subject to NVC survey</p>  <p>F6: Stand of lesser pond sedge on the southern edge (08 June 2020)</p>

Field No. (see Plan EDP 1)	Habitat Classification				Condition (ref. Defra Metric)	Botanical Survey Notes & Photos 2019/2020
	JNCC Phase 1	UK Habitat Code	NVC Code (if applicable)	Defra Metric 2.0		
F7	Unimproved Neutral Grassland	g3a	MG5c	Lowland meadow	Fairly poor	<p>Most of this field now supports dense scrub but three small relict areas of grassland remain and these are of high botanical value as they support unimproved neutral grassland habitat that demonstrates a strong acidic influence and is thus an example of the MG5c <i>Cynosurus cristatus-Centaurea nigra</i> grassland <i>Danthonia decumbens</i> sub-community. In 2019 rabbit grazing was intense here but in 2020 there was no evidence of rabbits and the sward was conspicuously tall; however, several small areas of species-rich sward had been burned by a rough-sleeper living in this area.</p>  <p>F7: Abundant rosettes of devil's-bit scabious (08 June 2020)</p>
F8	Semi-improved Neutral Grassland	g3c6	MG6b	Other neutral grassland	Fairly poor	<p>The middlemost of the three managed hay meadows in the east of the site, with a pronounced ridge and furrow topography. This sward is an MG6b <i>Lolium perenne-Cynosurus cristatus</i> grassland <i>Anthoxanthum odoratum</i> sub-community but is less species-rich than that in the adjacent field F3.</p>  <p>F8 (08 June 2020)</p>
	Marsh/Marshy Grassland	g3c7	MG9a	Other neutral grassland	Fairly poor	<p>F8 experiences much less waterlogging than the neighbouring meadow F3 and there is only a very small amount of MG9a vegetation in the south-east of the field.</p>
F9	Semi-improved Neutral Grassland	g3c6	MG6b	Other neutral grassland	Fairly poor	<p>The westernmost of the three managed hay meadows in the east of the site this is very similar to its neighbouring field F8 but has only one large patch of trailing tormentil. The main body of the field is a relatively species-poor MG6b.</p>
	Marsh/Marshy Grassland	g3c8	MG10b	Other neutral grassland	Fairly poor	<p>The small area of marshy grassland is MG10b <i>Holcus lanatus-Juncus effusus</i> rush-pasture <i>Juncus inflexus</i> sub-community.</p>
F11	Unimproved Neutral Grassland	g3c5/g3a5	MG1c/MG4	Lowland meadow	Moderate	<p>The dominant plant community here (Community 1) is the MG1c <i>Arrhenatherum elatius</i> grassland <i>Filipendula ulmaria</i> sub-community although there is also some affinity towards the MG4 <i>Alopecurus pratensis-Sanguisorba officinalis</i> grassland. It is likely</p>

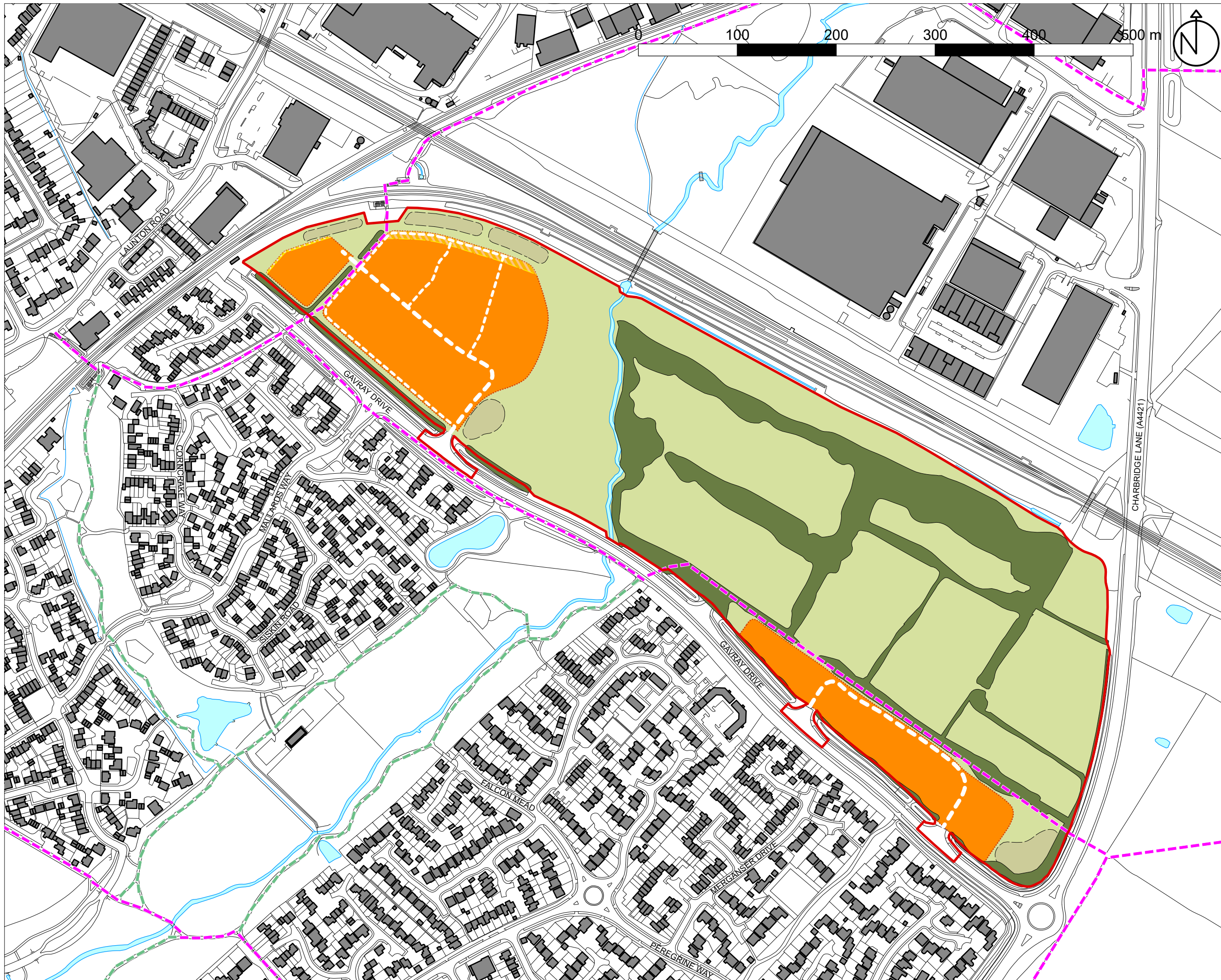
Field No. (see Plan EDP 1)	Habitat Classification				Condition (ref. Defra Metric)	Botanical Survey Notes & Photos 2019/2020
	JNCC Phase 1	UK Habitat Code	NVC Code (if applicable)	Defra Metric 2.0		
						that the sward here represents an MG4 grassland transitioning into an MG1c through prolonged absence of management.
	Semi-improved Neutral Grassland	g3c6/g3c5	MG6b/MG1a	Other neutral grassland	Moderate	The smaller area of slightly finer turf in the west of the field, where most of the pepper saxifrage is recorded, most closely keys out to the MG6b <i>Lolium perenne</i> - <i>Cynosurus cristatus</i> grassland <i>Anthoxanthum odoratum</i> sub-community but with an affinity towards the MG1a <i>Arrhenatherum elatius</i> grassland <i>Festuca rubra</i> sub-community.
						 F11 (29 August 2020)
F12	Semi-improved Neutral Grassland	g3c5	MG1c/MG1b	Other neutral grassland	Moderate	Abandoned meadow with an abundance of tall herbs and with a subordinate grassland component. Some parts are slightly more waterlogged than others and rushes can be relatively frequent; hairy sedge is very common throughout. Much of the field comprises species-poor swards dominated by meadow foxtail or by false oat-grass; however, tall herbs are still abundant and both smaller herbs and finer grasses are very uncommon. Scrub is common around the margins and scattered scrub is abundant, in particular young specimens of English oak. In general, lacks the more notable herbs that are recorded in F11. False oat-grass is dominant and other grass species are poorly represented. Less competitive herb species are infrequent, however, tall herbs are common. This is an MG1c <i>Arrhenatherum elatius</i> grassland <i>Filipendula ulmaria</i> sub-community although it has an affinity in places towards the MG1b <i>Arrhenatherum elatius</i> grassland <i>Urtica dioica</i> sub-community.
						 F12: Typical view of tall herb fen and relict grassland with scattered scrub (29 August 2019)
	Semi-improved Neutral Grassland	g3c5	MG1c	Other neutral grassland	Moderate	Situated mainly in the western centre of the field is a sward where meadow foxtail is the most prominent grass species and false oat-grass, although present, is not overwhelming; grass species of finer swards are relatively uncommon. Herbs requiring finer swards are very uncommon and thus this sward strongly suggests a grassland that has been abandoned for many years. This approximates most closely to the MG1c <i>Arrhenatherum elatius</i> grassland <i>Filipendula ulmaria</i> sub-community.

Field No. (see Plan EDP 1)	Habitat Classification				Condition (ref. Defra Metric)	Botanical Survey Notes & Photos 2019/2020
	JNCC Phase 1	UK Habitat Code	NVC Code (if applicable)	Defra Metric 2.0		
	Semi-improved Neutral Grassland	g3c6	MG6b	Other neutral grassland	Moderate	<p>A community which demonstrates a finer sward with conspicuously fewer coarse grasses or tall herbs than elsewhere in this field. It approximates most closely to the MG6b <i>Lolium perenne</i>-<i>Cynosurus cristatus</i> grassland <i>Anthoxanthum odoratum</i> sub-community, although both crested dog's-tail (<i>Cynosurus cristatus</i>) and perennial rye-grass (<i>Lolium perenne</i>) are scarce here. Although of a less coarse nature, herbs are scarce, although a small quantity of greater burnet is present.</p>  <p>F12: Area of slightly finer sward (08 June 2020)</p>
Various	Dense/continuous scrub	h3h	N/A	Mixed scrub	Poor	<p>Blackthorn scrub predominantly in association with unmanaged hedgerows. Oak, bramble etc. within unmanaged fields.</p>  <p>Scrub: Footpath through scrub in F15 (10 December 2019)</p>

Field No. (see Plan EDP 1)	Habitat Classification				Condition (ref. Defra Metric)	Botanical Survey Notes & Photos 2019/2020	
	JNCC Phase 1	UK Habitat Code	NVC Code (if applicable)	Defra Metric 2.0			
Various	Broadleaved Semi-natural Woodland	w1g7	N/A	Broadleaved woodland; other	Fairly poor	Ivy is fairly common in the field layer here, but other herbs and grasses were sparse with no species of any note being recorded.	 <p>Woodland: Ride through woodland between F7 and F5 (29 August 2019)</p>
Various	Standing water	r1a6	N/A	Ponds (priority habitat)	Poor	Dry during summer each year, almost subsumed entirely by scrub in many places.	 <p>Pond: Pond in NE corner of F8 dry in summer (29 August 2019)</p>

Annex EDP 3
Land Use Parameter Plan

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PLANNING

- Site boundary (22.7ha)
- Residential development area (4.8ha)
- No building zone (built frontage set back from railway to ensure adequate noise mitigation can be achieved; area suitable for infrastructure, roads etc. and/or landscaping)
- Green space (17.6ha incl. existing vegetation and areas reserved for attenuation)
- SuDS feature (top of bank shown)
- Existing trees/hedgerows/scrub to be retained
- Existing watercourses/waterbodies
- Existing Public Rights of Way
- Existing recreational routes/footpaths

Rev.	Date	Description
		Land north of Gavray Drive BICESTER
Land Use Parameter Plan		
Job ref: 239	Drawing number: P10	Revision: -
Scale: 1:3,500 @ A3		Date: April 2021



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Annex EDP 4 Access and Movement Parameter Plan

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PLANNING

- Site boundary (22.7ha)
- Residential development area
- ← Primary site access point
- Primary street
- Secondary street
- Existing Public Rights of Way
- Existing recreational routes/footpaths
- Indicative recreational routes/footpaths
- Green space
- Existing trees/hedgerows/scrub to be retained
- Existing watercourses/waterbodies

Rev.	Date	Description
		Land north of Gavray Drive BICESTER
Access & Movement Parameter Plan		
Job ref: 239	Drawing number: P11	Revision: -
Scale: 1:3,500 @ A3		Date: April 2021



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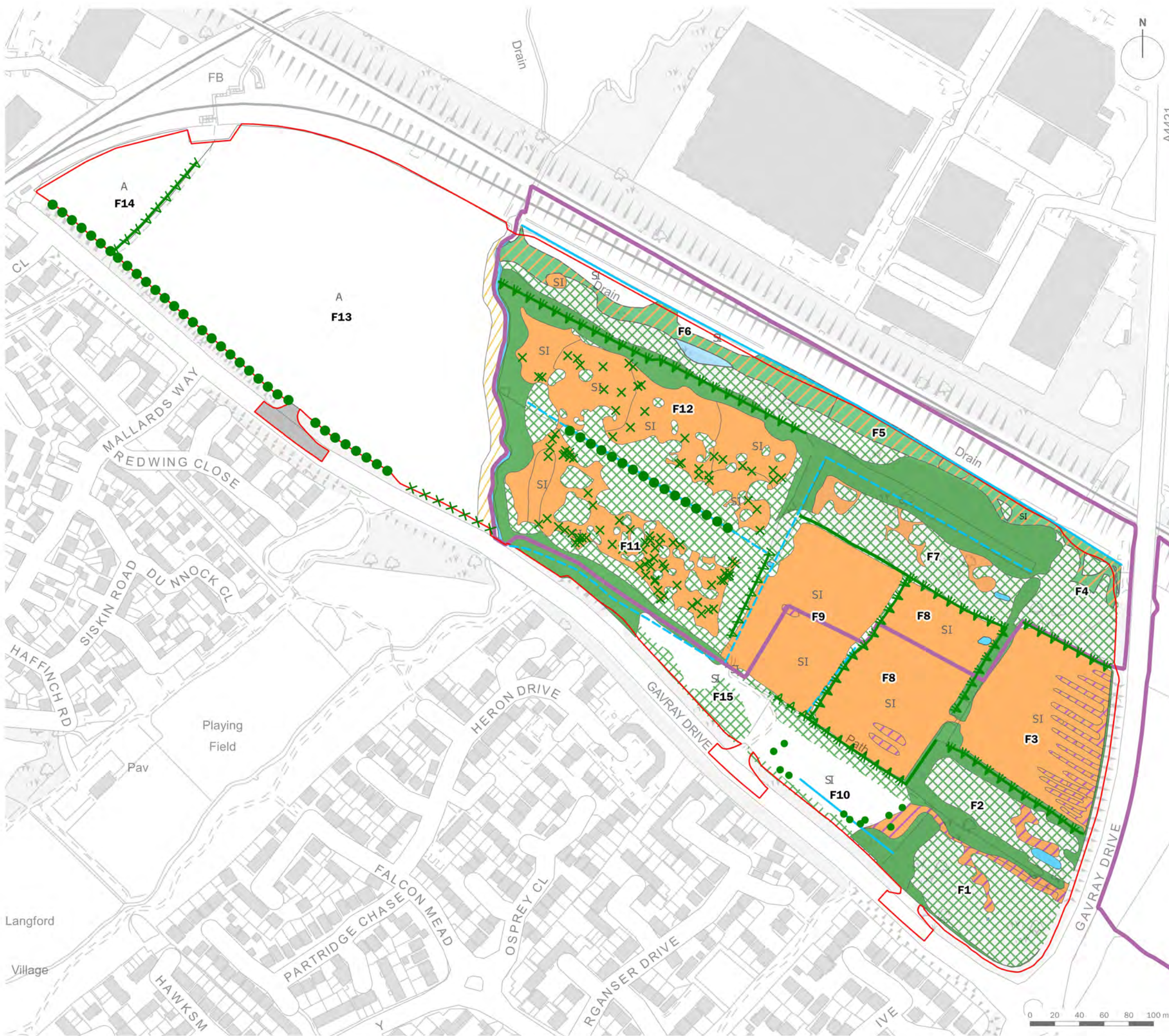
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Plans

- Plan EDP 1** Phase 1 Habitat Plan
(edp124_d130c 13 July 2021 MJC/WC)
- Plan EDP 2** Ecological Management Plan - Overview
(edp124_d169 28 May 2021 JTF/TW)
- Plan EDP 3** Ecological Management Plan - Compartments
(edp124_d170 28 May 2021 JTF/TW)
- Plan EDP 4** Ecological Management Plan - Access
(edp124_d171 28 May 2021 JTF/TW)
- Plan EDP 5** Ecological Management Plan - Species Specific Features
(edp124_d172 04 June 2021 JTF/TW)

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- Site Boundary
- Local Wildlife Site
- Broadleaved Semi-natural Woodland
- Tall Ruderal
- Marshy/Marshy Grassland
- Dense Continuous Scrub
- SI Poor Semi-improved Grassland
- SI Semi-improved Neutral Grassland
- Unimproved Neutral Grassland
- Mosaic of Semi-improved Grassland, Tall Herb/Tall Ruderal; Ephemeral/Short Perennial, Marshy Grassland and Scattered Scrub
- Standing Water
- Swamp
- A Arable
- Hardstanding
- Intact Species-rich Hedgerow and Trees
- Intact Species-rich Hedgerow
- Defunct Species-rich Hedgerow
- Intact Species-poor Hedgerow
- Scattered Scrub
- Scattered Trees
- Wet Ditch
- Dry Ditch
- F15 Field ID

client
L&Q Estates

project title
Gavray Drive, Bicester

drawing title
Plan EDP 1: Phase 1 Habitat Plan

date	13 JULY 2021	drawn by	MJC
drawing number	edp0124_d130c	checked	WC
scale	1:3,000 @ A3	QA	RB



- Application Site Boundary
- Ecological Restoration Zone (ERZ)
- Residential Development Area (RDA)

Existing Features

- Existing Ponds
- Existing Species-rich Wet Grassland (restored)
- Existing Species-rich Dry Grassland
- Existing Woodland/Linear Scrub
- Retained Native Scrub
- Existing Hedgerow
- Existing Tree Belt
- Existing Sedge Swamp

Proposed Features

- Proposed Woodland
- Proposed Native Scrub
- Proposed Ponds
- Enhanced Retained Wet and Dry Grassland Mosaic
- Enhanced Species-poor Dry Grassland
- Scrub to be Reduced as part of Grassland Restoration

client

L&Q Estates

project title

Gavray Drive, Bicester

drawing title

Plan EDP 2: Ecological Management Plan – Overview

date	28 MAY 2021	drawn by	JTF
drawing number	edp0124_d169	checked	TW
scale	1:3,000 @ A3	QA	RB



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- Application Site Boundary
- Ecological Restoration Zone (ERZ)
- Residential Development Area (RDA)
- Maintain Existing Woodland and Mature Scrub
- Development of New Native Woodland
- Succession of Veteran Oaks
- New Native Scrub
- Maintain/enhance Age Diversity of Retained Scrub
- Restoration of Hedgerows
- Restoration of Existing Species-rich Grassland
- Grassland Enhancement Areas
- Maintain Sedge Swamp and Prevent Drying Out
- Develop Ride Through New Woodland
- Existing Pond
- New Pond

Compartments and Management Notes:

A. Restoration and recovery of species -rich wet and dry grassland (Scrub removal and annual late summer hay cut)

A(i) and A(ii). New native scrub (New planting or established from self-sown stock)

A(iii) and A(iv). Maintain/enhance age diversity of retained scrub (Rotational clearance/coppicing)

A(v). Maintain sedge swamp and prevent drying out (Rotational clearance and desilting)

B. Restoration of existing species -rich wet grassland (Scrub removal, fencing and extensive grazing or similar)

B(i). Maintain/enhance age diversity of retained scrub (Rotational clearance/coppicing)

C. Establish a succession of over mature and veteran oak trees (Tree inspections, protection of existing veterans and selected young trees)

D. Restoration of existing species -rich wet grassland (Scrub removal, fencing and extensive grazing or similar)

D(i). Maintain/enhance age diversity of retained scrub (Rotational clearance/coppicing)

E. Restoration of existing species -rich dry grassland (Scrub removal, fencing and extensive grazing or similar, desilting of existing field pond)

E(i) and E(ii). Maintain/enhance age diversity of retained scrub (Rotational clearance/coppicing)

F. Maintain existing woodland and mature scrub (Annual trimming on woodland and scrub edges, tree inspections)

G. Enhancement of existing species -rich dry grassland (fencing and extensive grazing or similar, desilting of existing field pond, new wildlife pond)

G(i). Maintain/enhance age diversity of retained scrub (Rotational clearance/coppicing)

H. Enhancement of existing species -rich dry grassland (fencing and extensive grazing or similar, desilting of existing field pond, new wildlife pond)

I. Development of new native woodland (Allow retained scrub to mature into woodland)

I(i). Ride through scrub woodland (cutting and mowing to create grassland/scrub ecotone)

I(ii). Maintain/enhance age diversity of retained scrub (Rotational clearance/coppicing)

J. Enhancement of wet and dry grassland mosaic (Annual late summer hay cut, desilting of linear wetland/marsh, new wildlife ponds)

K. Restoration of species -rich wet grassland (Scrub removal, annual late summer hay cut and desilting of existing field pond)

client	L&Q Estates Ltd	
project title	Gavray Drive, Bicester	
drawing title	Plan EDP 3: Ecological Management Plan – Compartments	
date	28 MAY 2021	drawn by JTF
drawing number	edp0124_d170	checked TW
scale	Refer to scale bar @ A3	QA RB



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- Application Site Boundary
- Ecological Restoration Zone (ERZ)
- Residential Development Area (RDA)
- Indicative Location of Gates and Styles to Control Access
- Indicative Location of Internal Access Between Compartments
- Existing Public Right of Way
- Indicative Recreational Route/Footpath

Langford Village

client
L&Q Estates Ltd

project title
Gavray Drive, Bicester

drawing title
Plan EDP 4: Ecological Management Plan - Access

date **28 MAY 2021** drawn by **JTF**
drawing number **edp0124_d171** checked **TW**
scale **Refer to scale bar @ A3** QA **RB**



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- Application Site Boundary
- Ecological Restoration Zone (ERZ)
- Residential Development Area (RDA)
- Existing Pond
- New Pond
- ★ Amphibian and Reptile Hibernaculum
- ◆ Amphibian and Reptile Log/Brush Pile
- ✱ Barn Owl Box Installed in Tree
- Bat Box Installed in Tree

Langford Village

client
L&Q Estates Ltd

project title
Gavray Drive, Bicester

drawing title
Plan EDP 5: Species Specific Features

date	04 JUNE 2021	drawn by	JTF
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