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9.1 INTRODUCTION

9.1.1 This addendum chapter has been prepared by Wardell Armstrong LLP (WA) and considers any changes to the potential effects on biodiversity and ecology reported in the ES Ecology and Wildlife Chapter (submitted in support of the planning application in November 2014) resulting from amendments to the Proposed Development and provides an update to the baseline survey information

9.1.2 This section of the addendum describes the amendments to the proposed Development Framework Plan and considers whether:

- The ecological baseline data presented in the 2014 ES remains a sound basis for the assessment of the revised development scheme;
- The ecological impact assessment of the whole development in the 2014 ES is likely to be affected by the minor modifications in site layout;
- The methodology used for the identification of the potential impacts on ecological features and their significance is still valid; and
- The mitigation measures proposed for ecological features in the 2014 ES require any updating in 2016 as a result of the minor modifications to the site layout.

9.1.3 Due to the time elapsed since the previous surveys, surveys for great crested newts and bats were updated in 2015.

9.2 ASSESSMENT METHODOLOGY**Surveys**

9.2.1 The methodologies outlined in the ES for conducting data enquiries and habitat surveys used in the assessment of the development scheme in November 2014 remain valid in March 2016. Changes to methodologies for protected species surveys conducted to date remain valid in 2016 except for bat surveys.

Bat Surveys

9.2.2 Methodologies for bat surveys have been updated, with the most recent practice guidance for surveys given in the Bat Conservation Trust's 'Bat Surveys for Professional Ecologists: *Good Practice Guidelines*, 3rd Edition', Collins 2016.

9.2.3 The 2015 update surveys followed the previous best practice guidance provided in the Bat Conservation Trust Bat Surveys: Good Practice Guidelines (Hundt, 2012). The site was assessed as being a 'large site, proposed for major infrastructure developments' and supporting low habitat quality for bats and therefore one visit per season was undertaken in Spring, Summer and Autumn. Three transects were walked during each survey to achieve adequate coverage of the site. Additionally, 1 remote bat detector was deployed per transect with data being collected over four consecutive nights. Three transects were walked to achieve adequate coverage of the site.

9.2.4 The 2016 guidelines would still require one visit per season for low quality habitat although the guidelines now recommend that automated surveys require recordings to be collected over 5 consecutive nights per transect per season.

9.2.5 The protocol contained within the Bat Survey Good Practice Guidelines 2016 for classifying trees with bat roost potential has changed and is summarised in Table 9.2.1 overleaf:

High	Trees with multiple, highly suitable features capable of supporting larger roosts on a more regular basis and potentially for longer periods of time.
Medium/Moderate	Trees with definite bat potential, supporting fewer suitable features that High Category trees or with potential for use by

	single bats. Unlikely to support a roost of high conservation status.
Low	Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.
Negligible	Trees with no potential to support bats.

Ecological Impact Assessment – Impact Assessment Criteria

- 9.2.6 Since the 2014 ES was completed, new guidance has been published in January 2016 for the assessment of Ecological Effects '*Guidelines for Ecological Impact Assessment (EclA) in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd Edition*' Chartered Institute of Ecology and Environmental Management (CIEEM, 2016). Whilst there have been updates there is no major change to the overall approach to Ecological Impact Assessment.
- 9.2.7 New guidance avoids and discourages the use of matrixes and the 'confidence in predictions' is no longer a requirement.
- 9.2.8 The 2016 CIEEM guidelines indicate that the assessment of impacts should take into account both the value and sensitivity of the ecological receptors. This was the approach undertaken in 2014 under the old guidelines but the revised CIEEM guidance modifies the definition in order for it to be applicable to sites, habitats or species within any defined geographical area.
- 9.2.9 Table 9.2 from the 2014 ES chapter has been updated as follows and therefore in 2016 there is no reference to ecological features being of 'neighbourhood' or 'negligible' value.

Category Value	Examples
International	An internationally important site (e.g. Special Protection Areas (SPA), Special Areas of Conservation (SAC), RAMSAR Sites (or a site proposed for, or considered worthy of such a designation); a regularly occurring substantial population of an internationally important species (listed on Annex IV of the Habitats Directive).
National	A nationally designated site (e.g. Site of Special Scientific Interest (SSSI), or a site proposed for, or considered worthy of such designation); a viable area of habitat type listed in Annex 1 of the Habitats Directive or a smaller areas of such habitat which are essential to maintain the

Table 9.2 Nature Conservation Value	
Category Value	Examples
	viability of a larger whole, a regularly occurring substantial population of a nationally important species (e.g. listed on Schedules 5 & 8 of the Wildlife and Countryside Act 1981 (as amended)); A site where field study shows that the site would meet published SSSI Selection Guidelines.
Regional	Areas of internationally or nationally important habitat that are degraded but are considered readily restorable; a regularly occurring locally significant population of a species listed as being nationally scarce.
County	A site designated as a statutory county wildlife site (Local Nature Reserve) or a non-statutory designated site (e.g., Sites of Importance for Nature Conservation (e.g. Local Wildlife Sites (LWS), County Wildlife Sites (CWS)) or a site listed on the Ancient Woodland Inventory (AWI). A site where field study shows the site would meet published county LWS/CWS selection criteria. Viable areas of priority habitat identified in the LBAP where protection of all areas of that habitat is a published target; A regularly occurring, locally significant population of species which is listed in a County Red Data Book or LBAP on account of its regional rarity or localisation.
District	A site designated as a non-statutory district wildlife site. A good example of common or widespread habitat in the local area (e.g. those listed as broad habitats on the LBAP); Habitats that are scarce in the district or appreciably enrich the district ecological resource. A population of a species that is listed in the LBAP because of its rarity in the locality.
Local	Areas of heavily modified or managed vegetation of low species diversity or low value as habitat to species of nature conservation interest. Value within the context of the survey area (e.g. small areas of semi-improved grassland, isolated mature trees).

9.3 RELEVANT POLICY**National Planning Policy**

- 9.3.1 The National Planning Policy Framework, 2012 remains valid.

Local Planning Policy***Cherwell District Local Plan (1996)***

- 9.3.2 Saved policies C1, C2, C4 and C5 detailed within the 2014 ES remain valid until Part 2 of the Cherwell Local Plan 2011-2031 is adopted.

The Non-Statutory Cherwell District Local Plan 2011 (2004)

- 9.3.3 Policies EN1, EN22 and EN24 detailed within the 2014 ES remain valid until Part 2 of the Cherwell Local Plan 2011-2031 is adopted.

Cherwell Local Plan 2011-2013 Part 1 – Adopted July 2015

- 9.3.4 The Cherwell Local Plan 2011-2031 Part 1 was adopted in July 2015. Draft Cherwell Local Plan 2011 – 2031 Part 2 is currently in preparation. Land at Wykham Park Farm is allocated as part of the Strategic Development of South West Banbury through Policy Banbury 16 and Policy Banbury 17.

- 9.3.5 Policy Banbury 16 South of Salt Way West- allocates development for up to 150 dwellings, however outline planning permission has been granted for 350 dwellings (LPA ref: 14/01188/OUT).

- Policy Banbury 17 South of Salt Way East allocates some 1,345 dwellings as part of 3 separate development sites, that includes the application Site; 145 dwellings currently being implemented at Land south of Salt Way and east of Bloxham Road; and development for up to 280 dwellings on Land at White Post Road, subject of planning application LPA ref: 15/01326/OUT.

- 9.3.6 Policy ESD10 'Protection and enhancement of biodiversity and the natural environment' seeks to protect the environment from any adverse impacts that could be potentially be caused by proposed developments:

"Protection and enhancement of biodiversity and the natural environment will be achieved by the following:

- *In considering proposals for development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new resources;*
- *The protection of trees will be encouraged, with an aim to increase the number of trees in the District;*
- *The reuse of soils will be sought If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or as a last resort, compensated for, then development will not be permitted;*
- *Development which would result in damage to or loss of a site of international value will be subject to the Habitats Regulations Assessment process and will not be permitted unless it can be demonstrated that there will be no likely significant effects on the international site or that effects can be mitigated;*
- *Development which would result in damage to or loss of a site of biodiversity or geological value of national importance will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site and the wider national network of SSSIs, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity;*
- *Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity*
- *Development proposals will be expected to incorporate features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value within the site. Existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity;*
- *Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site;*
- *Air quality assessments will also be required for development proposals that would be likely to have a significantly adverse impact on biodiversity by generating an increase in air pollution*
- *Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably*
- *A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.”*

9.4 BASELINE CONDITIONS

9.4.1 Chapter 9 of the 2014 ES referred to the following suite of ecological surveys conducted at the site:

- Extended Phase I Habitat Surveys in April 2014 and July 2014;
- Hedgerow surveys in April 2014 and July 2014;
- Great crested newt surveys in 2013;
- Bat Surveys in 2012;
- Badger Survey in 2012 and 2014; and
- White letter hairstreak (mapping elm trees – May 2013 and July 2014).

- 9.4.2 Due to the time elapsed since the previous surveys, surveys for great crested newts and bats were updated in 2015.

Desk Study 2016

- 9.4.1 Updated information on protected and notable habitats and species was requested from Thames Valley Environmental Records Centre (TVERC) on the 29th February 2016 and received 14th March 2016. The Multi-Agency Geographic Information for the Countryside (MAGIC) was also reviewed to gather data on statutory sites of nature conservation value.

Statutory Sites of Nature Conservation Value

- 9.4.3 Information received from MAGIC has revealed that there are no statutory designations within 2km of the Site but the site is within the Impact Risk Zone (IRZ) for Bestmoor SSSI.
- 9.4.4 Bestmoor SSSI consists of a semi-improved floodplain meadow adjacent to the middle reaches of the River Cherwell and lies on alluvial deposits consisting of a brown clay loam with scattered pebbles of local rocks. The main interest of the meadow is that it contains one of the largest known British populations (estimated at over 30,000) of narrow-leaved water-dropwort *Oenanthe silaifolia*. This species has become increasingly rare in Britain due to habitat loss and is now confined to a few sites often with small populations. Although the site has been partially affected in the past by agricultural improvements it still contains several plant species associated with unimproved meadows. The area of which this meadow forms part is still of great value for wintering wildfowl.
- 9.4.5 This SSSI is however situated approximately 9km to the south east of the Site. Information from MAGIC shows that whilst the Site is situated within the IRZ due to the distance from the site, only developments which have any discharge of water or liquid waste that is more than 20m³/day, within the zone in which the Site is situated are considered to have the potential to impact upon the SSSI. From review of the guidance the discharge is taken to be foul water.

*“Most foul water is removed from a development site by a mains sewer. Where this is not the case, **foul water** is usually treated on site and then discharged either to ground to filter away from the site, or into a nearby watercourse to flow away from the development. If the **treated water** flows towards a SSSI, the closer it discharges to the SSSI, the less time there is for it to be diluted before it reaches the site”.*

9.4.6 Since only surface water will be discharged into the watercourse, no impact on this SSSI is predicted as a result of the Proposed Development and is not considered further in this addendum.

9.4.7 The Information received from TVERC confirms that the Salt Way is listed as a proposed Local Wildlife Site. It is proposed as a LWS because of its species rich hedgerows and these are classified as a Section 41 Habitat of Principal Importance.

UKBAP and Local BAP Habitats

9.4.8 The Oxfordshire BAP¹ priority habitats potentially relevant to this Site are identified in Table 9.3 below.

Table 9.3 – Oxfordshire Local Biodiversity Action Plan Potentially Relevant Habitats

Habitats
Mixed Deciduous Woodland – Priority Habitat
Arable Field Margins
Hedgerows
Ponds

Protected/Notable Species Records

- 9.4.9 The following additional records have been provided within the 2016 data search:
- 1 record of an unidentified *Myotis* and brown long-eared bat species recorded approximately 400m from the site boundary;
 - 2 records of the Priority Invasive Non-Native Species Japanese Knotweed beyond 1km of the site boundary;
 - Records for GCNs within the locality of Wykham and approximately 1.5km to the north of the site;
 - 1 additional record for hedgehog located 1.3km to the north of the site.

9.4.10 Whilst there have been additional bird records there are no new records for priority or notable bird species to those listed in the original 2014 ES.

Extended Phase 1 Habitat Survey

9.4.11 The last habitat survey was undertaken in July 2014. Subsequent site visits in connection with various protected species surveys between April and September 2015

¹ <http://www.wildoxfordshire.org.uk/biodiversity/habitats-and-species/>

did not identify any significant changes in the land uses and habitats present at the Wykham Park Farm site. The baseline information for habitats detailed with the ecology ES chapter is therefore considered to be valid for the purposes of assessing the impacts of the revisions to development scheme.

- 9.4.12 The majority of the Site comprises arable land. The most notable ecological features are the network of hedgerows and associated ditches, woodland and mature/semi-mature trees.

Protected Species Surveys

- 9.4.13 The Council's Ecologist was contacted in March 2015 regarding the need to update surveys in 2015 (**Appendix 8a** to this addendum). The Council's Ecologist did not request any survey updates but due to time elapsed since the previous surveys, further amphibian surveys and bat activity surveys were carried out in 2015.

Amphibians

- 9.4.14 Amphibian surveys, which included surveys for great crested newts (GCN), were updated in 2015. A full copy of the update GCN report is provided as **Appendix 8b** to this addendum. The methodologies for GCN surveys remain valid.
- 9.4.15 Two of the six waterbodies (Ponds P1 & P5 refer to drawing number CA10769/9.10 in 2015 GCN report) surveyed in 2015 were found to contain medium populations of GCN. The presence of GCN is consistent with the previous survey period in 2013 where medium populations were found in the same waterbodies and absent elsewhere.

Bats

Bat Activity

- 9.4.16 Bat activity surveys were updated in 2015. A full copy of the update bat report is provided as **Appendix 8c** to this addendum. Since the 2015 bat report was prepared, the methodologies for bat surveys have been updated with the most recent practice guidance for surveys given in the Bat Conservation Trust's '*Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition*', Collins 2016.
- 9.4.17 The hedgerows and broadleaved woodland edges on site have the potential to provide suitable foraging habitat and commuting corridors for bats. Several of the mature trees within the site are considered to have the potential for supporting roosting bats and four trees had roosts confirmed within them in 2012.

- 9.4.18 The bat surveys undertaken in 2015 recorded at least 6 species of bats from 4 different genera foraging and commuting within the site. Common pipistrelle, soprano pipistrelle, noctule and possible *Myotis* species were using the site in 2012 with serotine, lesser horseshoe, Leisler's and an unidentified big bat also identified in 2015. No *Myotis* sp. were recorded within the site in 2015.
- 9.4.19 In 2015 there was an abundance of activity throughout the site increasing from spring through to autumn. The starting points and/or directions walked of each transect were varied between survey visits to avoid survey bias ensuring all areas of the site were covered as thoroughly as possible. Activity patterns differed by season and change in transect route but remained consistent along hedgerows H2 and H15. Common and soprano pipistrelle were the only bat species recorded along these hedgerows during the suite of surveys.
- 9.4.20 In the 2014 Environmental Statement (ES) the site was considered to be of local value for foraging / commuting bats and this is considered unchanged despite some additional species being identified in low numbers during the 2015 surveys.

Tree roosts

- 9.4.21 In 2012, two mature pedunculate oak trees and two mature ash trees located on the site boundary were being used by common pipistrelles as roost sites. These tree roosts were considered to be minor, low grade, roosts supporting individual or a small number of common pipistrelle bats, a species that is common and widespread. The roost on the western boundary of the site could potentially be a night/feeding roost for pipistrelle bats.
- 9.4.22 The trees identified in 2012 as supporting roosting bats were subject to further surveys in 2015. Evidence of a bat roost was observed in the large mature ash tree at the intersection of H2 and H3 during the autumn emergence survey. Both common and soprano pipistrelle, totalling 5 individuals were seen entering and/or emerging from the tree. The other previously indicated bat roosts did not show evidence of use during the emergence surveys in 2015 and no other roosting activity was observed. As three out of four of the previous roosts described in 2012 were found to only support individuals, it is possible these were still in use intermittently in 2015 but not observed in 2015 as activity surveys can only provide a snapshot of each season.
- 9.4.23 Overall, trees with potential to be used by roosting bats are considered to be of local value for common pipistrelle bats as they are a common and widespread species.

Other Fauna Species

9.4.24 Survey methodologies for other species surveys conducted to inform the 2014 Environmental Statement remain valid.

9.5 NATURE CONSERVATION EVALUATION

9.5.1 The assessment of the nature conservation value of the application site has been based on the Extended Phase 1 Habitat Surveys carried out in 2012 and 2014 as well as protected species surveys between 2012 and 2015 by Wardell Armstrong LLP and the widely applied criteria described in 'A Nature Conservation Review' (Ratcliffe, 1977)². These include i) Size; ii) Diversity; iii) Naturalness; iv) Typicalness; v) Rarity and vi) Potential Value. A summary of these criteria is set out in Appendix 9.9 of the 2014 ES.

9.5.2 Based on the updates to the Nature Conservation Values (Table 9.2) above, Table 9.11 in the 2014 ES has been updated as follows:

Habitat/Fauna	Comments	Nature Conservation Value – 2014 (2006 EclA Guidelines)	Nature Conservation Value 2016 (2016 CIEEM EclA Guidelines)
Nature Conservation Designations			
Local Wildlife Site	Bretch	county	county
Potential Local Wildlife Site	Salt Way	county	county
Habitats			
Arable fields	May support breeding birds and be of foraging value for other wildlife. Species poor and intensively farmed.	negligible	local
Hedgerows	6 potentially 'important' hedgerows Other hedgerows – provide wildlife corridors, foraging and nesting opportunities for wildlife including bats and birds.	local local	district local

² Ratcliffe, D.A. (1977). *A Nature Conservation Review*. Cambridge University Press, Cambridge.

Outline Planning Application

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Mature/Semi mature trees	Particularly important for breeding birds 4 mature trees with confirmed bat roosts	neighbourhood local	local local
Broad-leaved Woodland / Mixed Plantation	Suitable foraging, sheltering and nesting habitat for range of species	local	district
Ponds / Watercourse	No waterbodies present on site Ditches/minor watercourses	negligible	local
Flora			
Protected species	No protected species recorded	negligible	-
Invasive Species	No invasive species recorded	negligible	-
Fauna			
Amphibians	Hedgerows, broad-leaved woodland and mixed plantation could provide suitable habitat for amphibians	neighbourhood	local
Badger	See confidential Appendix 9.4 to the original ES		
Bats	Mature trees with confirmed bat roosts At least six species of bat utilising hedgerows and woodland edges for commuting and foraging.	local local	local local
Birds	Hedgerows, mature trees and woodlands provide suitable breeding and foraging habitat. Arable land provides suitable habitat for some ground-nesting birds.	local	local
Brown Hare	Potential sheltering and foraging habitat	neighbourhood	local

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Dormouse	Lack of extensive woodland and hedgerows with a range of food-plants for dormice.	negligible	-
Hedgehog	Hedgerows and areas of woodland provides suitable habitat	neighbourhood	local
Invertebrates	Potential for locally notable species in hedgerows including the white-letter hairstreak butterfly, mature trees and areas of woodland	neighbourhood	local
Reptiles	Hedgerows and field margins provide limited habitat for common reptiles	neighbourhood	local
Otter, water vole and white-clawed crayfish	No suitable habitats present	negligible	-
Other fauna	Habitats have potential to support deer and foxes	local	local

9.5.3 CIEEM Guidelines 2016 paragraph 4.1 indicates that the assessment of impacts should take into account both the value and sensitivity of ecological receptors:

‘One of the key challenges in EclA is to decide which ecological features are important and should be subject to detailed assessment. Such ecological features will be those that are considered to be important and potentially affected by the project.’

9.5.4 Paragraph 5.8 of the CIEEM Guidelines indicates that it is important to assess the significance of the effects of impacts upon each ecological feature:

‘There could be any number of possible impacts on important ecological features arising from a development. However, it is only necessary to describe in detail the impacts that are likely to be significant’.

9.5.5 The CIEEM guidelines define a significant effect as:

‘An effect that either supports or undermines biodiversity conservation objectives for important ecological features’.

- 9.5.6 Whilst these guidelines have been updated, no new significant effects upon ecological features have been identified as a result of the introduction of the new guidelines.

9.6 POTENTIAL EFFECTS

Non-Statutory Designations

- 9.6.1 The impact assessment (for construction and post-completion stages of development) on the non-statutory nature conservation designations (Bletch Local Wildlife Site (LWS) and Potential Salt Way LWS in the 2014 ES is considered to still be valid for the revised development as shown on the Development Framework Plan Revision 'O'.

Potential Impacts on the Site

Habitats

- 9.6.2 Changes to the impacts identified in the 2014 are discussed below:

Construction Stage

- 9.6.3 No new significant effects have been identified on habitats for the construction stage of the development and therefore the potential effects identified in the 2014 remain unchanged.

Post-Completion Stage

- 9.6.4 The main changes to the Development Framework Plan involve a decrease in area for residential development, strategic landscape planting and infrastructure and an increase in area reserved for education and slight increase in the area reserved for a Local Centre.

Hedgerows

- 9.6.5 The revised Development Framework Plan will result in the loss of approximately 590m of existing hedgerow habitat. This includes approximately 78m of hedgerow H12, 329m of hedgerow H13; 141m of H16; 14m of H15; 14m of H4 and 14m of H2. The remaining 3483 of hedgerow will be retained within the development.
- 9.6.6 Overall, the development will result in the loss of approximately 14.5% hedgerow from the Site and a less than 0.5% change from the previous Development Framework Plan.

- 9.6.7 The significance of the effect without mitigation remains the same as previous, i.e. at a local level, as it will have implications for local wildlife such as bats and birds which are discussed later in this section.

Mature /Semi Mature Trees

- 9.6.8 Mature and semi-mature trees are associated with hedgerows on Site. The development will result in the loss of some of the mature trees associated with hedgerows H12 and H16 (refer to Appendix 8d – Response to Arboricultural Officers Comments). The creation of a 'link road' as part of the development of the Site will also necessitate the loss of trees associated with hedgerow H4, therefore the significance of the effect from the loss of mature trees could be greater if bat roosts are present.

Broad-leaved woodland/mixed plantation

- 9.6.9 The semi-natural broad-leaved woodland will be retained and the mixed plantation is being retained within the southern part of the Site as part of the development. There will remain a loss of 0.06ha of mixed plantation in the area referenced as Target Note 2 on the Habitat Plan to facilitate the access road. As a result of the revisions to the Development Framework Plan the area of Strategic and Landscape Planting will decrease but there will be an overall net increase in area for native planting compared to what currently exists at the Site.

Ditches/minor watercourses

- 9.6.10 No significant changes in effects are predicted on ditches and minor watercourse as a result of the revisions to the Development Framework Plan.

Fauna

Amphibians

- 9.6.11 It was concluded in 2013 that the Proposed Development on Site is considered to have two main potential impacts on GCN. These are loss of potential terrestrial habitat and harm/disturbance to individual GCN during Site clearance works.
- 9.6.12 Two of the six waterbodies (P1 & P5) surveyed in 2015 were found to contain medium populations of GCN. The presence of GCN is consistent with the previous survey period in 2013 where medium populations were found in the same waterbodies and absent elsewhere. Pond P6 could not be surveyed in 2015 as no access was granted.
- 9.6.13 The revised Proposed Development scheme will result in the permanent loss of arable land from the Site and is the main habitat present on Site within 500m of Ponds P1,

P5 and P6. If a GCN population is present at P6 it is considered extremely unlikely that any GCN using these waterbodies, in addition to GCN using Ponds P1 and P5, would forage within the arable fields in significant numbers. Therefore it is considered that in 2015 the impact will remain the same as identified in 2013; i.e. there will be no significant adverse impact on GCNs as a result of the loss of poor quality terrestrial habitat (arable fields).

- 9.6.14 It also considered that the small loss of hedgerow habitat (14.5% of the total hedgerows on Site) to the revised development will not have a significant adverse effect on GCN which are present in the off-site ponds.
- 9.6.15 The risk of harm and disturbance to any GCN which may be present in Ponds P1 – P5 remains low. It is therefore considered that the impacts of harm and disturbance on individual GCN, from Ponds P1 and P5 will not be significant and thus the site clearance operations are considered unlikely to affect the favourable conservation status of GCN populations in the local area. As such the third test would be passed and therefore the implementation of mitigation measures under a disturbance licence from Natural England under the Conservation of Habitats and Species (Amendment) Regulations 2012 would not be required.
- 9.6.16 As access could not be obtained to Pond P6 in 2015, it remains that a small number of individual GCNs could potentially be harmed / disturbed, if a population is present in Pond P6. This would represent an adverse effect on GCN populations in the local area. The potential loss of a few individual GCNs during site clearance operations is considered unlikely to affect the overall favourable conservation status of GCN populations in the local area in 2015.
- 9.6.17 The Rapid Risk Assessment Tool suggested that for Ponds P1 and P6 an offence is 'amber - likely' and for Pond 5 is 'green - highly unlikely,' provided that no GCNs are harmed as a result of the works.
- 9.6.18 Of the land which falls within 500m of Pond P5, only the southern hedgerow was considered suitable for GCNs and as this is being retained the risk of harm to GCN is likely to be extremely low and therefore it remains in 2015 that a licence application and mitigation measures in connection with Pond P5 is not considered necessary.
- 9.6.19 For Ponds P1 and P6 the risk of an offence being committed was considered 'amber - likely'. Natural England recommends in these cases that RAMs should be employed during site clearance works (including archaeological investigation works),

construction and landscaping works to decrease the risk to GCN. If the risk to GCN can be reduced through implementing RAMs then a licence will not be required.

Bats

9.6.20 All bat species and their roosts are fully protected under national and European legislation. Four common pipistrelle roosts were identified within the Site in 2013 and one common pipistrelle roost reconfirmed during the survey in 2015.

9.6.21 Whilst the best practice bat survey guidelines have changed since the update surveys were carried out in 2015 no further surveys are considered necessary in 2016 because:

- activity surveys only detected common and widespread species;
- the site is mainly arable with no ponds or significant woodland areas;
- the majority of trees are being retained as part of the revised proposed development scheme; and
- the tree roosts identified to date support common and widespread species and are considered unlikely to support rarer bat species.

9.6.22 Whilst a few foraging/commuting individuals of some additional species were identified in 2015, the identification of these does not affect the overall impacts on foraging bats described in the 2014 Environmental Statement.

Potential Effects on Other Fauna Species

9.6.23 No new significant effects on other species (birds, brown hare, hedgehog, invertebrates, reptiles) considered in the 2014 ES are identified in 2016 as a result of the amendments to the Development Framework Plan.

Summary of Potential Impacts

9.6.24 Table 9.13 from the 2014 ES has been updated to reflect the Guidance in the latest CIEEM EclA guidelines but overall no new significant adverse effects have been identified as a result of updates to baseline surveys for amphibians and bats or from amendments relating to the Development Framework Plan (Rev P).

Table 9.13 – Summary of Potential Impacts

Area	Major Impact Type	Value of Ecological Feature	Predicted Impact without Mitigation	Mitigation
Statutory and non-statutory sites				
Bretch Local Wildlife Site	No impacts	County	None	Mitigation not required

Area	Major Impact Type	Value of Ecological Feature	Predicted Impact without Mitigation	Mitigation
Salt Way pLWS	Widening of existing gaps Loss of smaller shrubs and trees/ Isolation from Countryside	County	Not significant	Mitigation proposed
	Increase in recreational pressure	County	Not significant	Mitigation proposed
	Indirect effects during construction	County	Significant - short term	Mitigation proposed
Planning Application Area				
Habitats				
Arable land	Direct loss	Negligible	Not significant but potential for impacts of low significance on some fauna species.	Not mitigatable
Hedgerows	Loss/damage but majority retained	Important hedgerows – District Remaining Hedgerows - Local	Significant at site level only	Mitigation proposed
Mature/Semi mature trees	Damage / loss of trees	Local	Significant at site level	Mitigation proposed
Woodland/ Mixed Plantation	Damage	District	Significant at site level	Mitigation proposed
Ditches	Indirect effects on water quality/ Temporary disturbance	Local	Significant if pollution event Beneficial – improved water quality	Mitigation proposed
Fauna				
Amphibians	Loss of limited habitat Harm/disturbance	Local	Loss of habitat – Not significant Harm/disturbance - Significant	Mitigation proposed
Badgers	Included in confidential appendix 9.4 to the original ES			
Bats	Loss of roost Loss of foraging habitat and connectivity	Local	Loss of bat roosts – not significant for common and	Mitigation proposed

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Area	Major Impact Type	Value of Ecological Feature	Predicted Impact without Mitigation	Mitigation
	Disturbance		widespread species. Loss of foraging and habitat, connectivity/disturbance - Significant at site level	
Birds	Direct loss of breeding sites Harm/disturbance Direct loss of feeding habitat	Local	Significant at site level	Mitigation proposed
Brown hare	Direct loss of laying up and foraging habitats Harm/disturbance	Local	Significant at site level	Not mitigatable
Dormouse	No impacts	Not suitable	None	Mitigation not required
Hedgehog	Direct loss of suitable habitat Harm/disturbance	Local	Significant at site level	Mitigation proposed
Invertebrates including white-letter hairstreak	Loss of limited habitat / harm as result of pollution event Improved water quality	Local	Loss of habitat - significant at site level Beneficial	Mitigation proposed
Reptiles	Loss of limited habitat Harm/disturbance	Local	Loss of habitat – not significant Harm/disturbance – significant	Mitigation proposed
Other fauna	Loss of habitat Harm/disturbance	Local	Loss of habitat – not significant Harm/disturbance - significant	Mitigation proposed

9.7 MITIGATION MEASURES

9.7.1 Mitigation measures remain as previously described in paragraph 9.6.6 of the 2014 ES Ecology and Wildlife chapter (Mitigation Measures) refers to the Environment Agency's Pollution Prevention Guidelines (PPG). All PPGs that were previously maintained by the Environment Agency were withdrawn from use on 17 December 2015. PPGs contained a mix of regulatory requirements and good practice advice. Although the Environment Agency does not provide 'good practice' guidance, the PPGs can now be found on the National Archives. The Construction Environmental Management Plan (CEMP) will incorporate, as appropriate, equivalent water pollution prevention measures.

9.7.2 All other mitigation measures identified in the ecology and wildlife chapter of the ES remain valid for the revised development scheme.

9.8 RESIDUAL EFFECTS

9.8.1 No additional significant residual adverse effects have been identified following updates to baseline surveys for amphibians and bats or as a result of amendments to the Development Framework Plan (Rev P).

9.8.2 The new CIEEM EcIA Guidelines 2016 allows for mitigation by design to be included when assessing the potential significant effect of an impact. therefore Table B9.14 has been updated as follows:

Potential effect	Mitigation measure	Significance of residual effect
Construction stage		
Permanent Loss of agricultural land	N/A	Not Significant
Reduction of populations of Brown Hare, if present	N/A	Effect of low significance at a local level
Potential loss of some breeding bird species associated with open land	N/A	Significant effect at a local level
Potential loss of hedgerow and trees as a result	Fencing root protection zones during construction	Not Significant

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of damage during construction		
Potential disturbance to fauna	Measures outlined in the Construction Environmental Management Plan and /or method statements	Not Significant
Post-completion stage		
Potential reduction in bat population through public disturbance and harm from cats in residential area	habitat creation and enhancement of areas which can be used by foraging and roosting bats	Beneficial effect
Increased risk of predation of birds by cats	landscape planting and creation of balancing ponds	Beneficial effect
Potential increase in amphibian and reptile populations due to provision of water attenuation features, public open space, allotments and landscape planting	Measures outlined in method statements and Landscape and Ecological Management Plan and Construction Environmental Management Plans	Beneficial effect
Reduction in Brown Hare population if present	N/A	Effect of low significance at a local level
Road mortality to hedgehogs and other wildlife which may enter the roads	N/A	Effect significant at a local level
Maturing of new structural, hedgerow and marginal planting will provide habitat for wildlife	Measures outlined in the Construction Environmental Management Plan and method statements	Beneficial effect
Improvement of water quality in retained ditch/watercourse due to cessation of agricultural production in the Site and	N/A	Beneficial effect

incorporation of SuDS into the development improving habitats for wildlife		
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9.1 CUMULATIVE EFFECTS

9.9.1 The previous 2014 EclA assessment considered the cumulative impact of the site referenced as 'Land East of Bloxham Road' which is located to the north-west and adjacent to the Wykham Park Farm Site has consent for development of 145 dwellings with associated infrastructure.

9.9.2 The cumulative impacts assessment for this site in 2014 assumed that similar habitats to those lost in the Wykham Park development were also being lost from Land East of Bloxham Road development namely arable land and small sections of hedgerow.

9.9.3 This ES addendum section also considers the cumulative impacts of the following additional sites:

- Banbury 16 – South of the Salt Way- West - outline planning permission granted for 350 dwellings (LPA ref: 14/011188/OUT); and
- Land at White Post Road - subject of planning application for up to 280 units (LPA ref: 15/01326/OUT).

Potential cumulative impacts on the County Wildlife Sites

9.9.4 Due to the distances between the Proposed Development scheme and Bretch Local Wildlife Site, no direct or indirect cumulative effects on this site are anticipated for the reasons stated earlier in the impact section on Bretch LWS.

9.9.5 It is considered that although there will be probably be an increase in the number of individuals using the Salt Way pLWS route due to the Proposed Development and the cumulative assessment developments, during the day this will not result in significant impacts on the integrity of the Salt Way pLWS or disturbance to wildlife as described earlier in the impacts section on the Salt Way pLWS.

Flora and habitats

Arable Fields

9.9.6 The applicaiton Site and cumulative assessment sites predominantly comprise intensively used agricultural land. The arable land will be lost in the event of the Proposed Development. Overall arable land is considered to be of low value to nature conservation, although it has some value to a few wildlife species.

9.9.7 In the context of the wider area, it is considered that the loss of the arable land to these Proposed Developments will have long-term adverse effects on ground-nesting birds and brown hares, but the cumulative impact is considered to remain of low significance

at a local level due to the scale of loss and the fact that there remain other similar habitats in the locality.

Hedgerows

9.9.8 As with the application Site, the majority of hedgerows within the cumulative assessment sites appear to be retained within the Proposed Developments. The loss of some hedgerows which are considered to be of local value of nature conservation could represent adverse effect at a local level, however the retention of the majority of the hedgerows will maintain connectivity around and throughout the development sites. New landscape planting as part of these schemes will also lessen the adverse impact.

9.9.9 The cumulative impact of retaining the majority of hedgerows within the developments will result in a long-term effect of low significance, as a network of corridors will be retained across the local area for wildlife and new landscape planting will help compensate for loss of some hedgerows.

Mature trees / semi-mature trees

9.9.10 Several trees could potentially be lost as part of the proposed cumulative assessment sites. The cumulative adverse impact is assessed as being of an effect of low significance overall as the majority of hedgerows (which many of the mature and semi-mature trees are associated with) will be retained and landscape planting in the development sites will eventually compensate for the loss of these trees, once mature, which will reduce the severity of this effect in the long-term.

Woodland / Mixed Plantation

9.9.11 The development of cumulative impact sites could also potentially damage the parcel of broad-leaved woodland in the north-west of the application Site therefore contributing to an adverse impacts on this woodland, in the absence of mitigation. With mitigation in place to protect the woodland during construction, the cumulative effect is assessed as being of low significance.

Watercourses

9.9.12 A cumulative effect on watercourses could arise from these combined developments as the receiving sewerage network and its capacity could be reduced. Potentially this can cause foul flooding, exacerbate existing flooding problems and impact on the water quality of local watercourses from combined sewer overflows and final effluent from sewage treatment works. The Water Resources ES addendum concludes that the conclusion reached in the previous assessment remains valid i.e. in terms of the worst

case scenario there is potential for a moderate adverse cumulative impacts on the watercourses from the developments but since Thames Eater have a responsibility to manage water resources effectively any water transfers associated with these additional potential developments will have a negligible cumulative impact.

Fauna

Amphibians

- 9.9.13 The retention of the majority of the hedgerows within the cumulative assessment sites as well as for the application Site, in addition to areas of public open space, surface water attenuation features and gardens, would provide terrestrial habitat for amphibians to disperse and forage along and it is considered that amphibian populations will be able to be maintained within these developments, although a small number of individuals, including GCN if present, may be harmed during construction works resulting in a significant adverse effect at a local level in the absence of mitigation. With the implementation of Reasonable Avoidance Measures, the effect on GCN will be of low significance.

Badgers

- 9.9.14 The cumulative impacts of on badgers are detailed in the confidential Appendix 9.4 to the original ES..

Bats

- 9.9.15 Common pipistrelle can forage up to 3-4km from their roosts and therefore there is potential for cumulative impacts to arise on common pipistrelle using the roosts located at the application Site from hedgerow loss and fragmentation of the hedgerow network as part of the cumulative assessment sites.
- 9.9.16 The majority of hedgerows are being retained in the Proposed Developments, providing flight-lines, connectivity and foraging areas for bats. The attenuation areas, public open space and landscape planting within all the developments may also be used by foraging bats and will compensate for the sections of hedgerows lost to development.
- 9.9.17 There will be increased public pressure following the development with an increase in the levels of noise and light which could result in the value of the hedgerow network for foraging bats decreasing, although common and soprano pipistrelle and noctule which have been recorded at the Site are known to forage around lighting.

9.9.18 There is also the increased risk from predation by cats once the residential developments are complete. Depending on the density of cats present in the final developments, cumulative impacts on bats could potentially be adverse at a local level.

9.9.19 Overall, it is considered that there will be a beneficial cumulative effect on bats in the local area with retention of foraging corridors, retention of known roosts (where possible) and the creation of habitats (attenuation areas and ponds and landscaped areas) which potentially provides suitable good quality habitat for foraging and roosting bats.

Birds

9.9.20 In addition to retaining the majority of the hedgerows within the application Site, the majority of hedgerows within the cumulative assessment sites will be retained with the loss of some hedgerows being compensated for by landscape planting. Attenuation areas in these developments may also attract a range of water-bird species which are not currently present and some bird species will be able to use residential gardens.

9.9.21 However, the cumulative loss of arable habitats will reduce the value of the area for some bird species, particularly ground nesting birds which are likely to be displaced from these areas.

9.9.22 The increase in residential areas in the developments could increase the risk of predation of birds by cats. Depending on the density of cats present in the final developments, cumulative impacts on birds could potentially be adverse at a local level.

9.9.23 It is therefore considered that the developments will result in a beneficial cumulative effect on tree nesting birds at a local level but an adverse effect on ground nesting birds in the longer term at a local level.

Brown hares

9.9.24 Further loss of arable habitat across the cumulative assessment sites will reduce the value of the area for brown hares. This species is likely to be displaced by the developments probably to adjacent farmland to the south. It is therefore considered that cumulative impacts on brown hares will be adverse at a local level as this species is likely to be lost from the development areas although they will still be able to survive in the locality.

Hedgehog

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- 9.9.25 The further loss of hedgerow habitats to the cumulative assessment developments will decrease the existing foraging area for hedgehogs in the local area. However, areas of similar habitat and areas which provides more suitable habitat for hedgehog are located in the surrounding area and this species will be able to utilise gardens, where accessible, and public open space once the developments are completed.
- 9.9.26 There could potentially be an increased risk of road mortality from increased traffic and roads in the area. It is therefore considered that the developments will have an adverse cumulative effect on the local hedgehog population mainly arising from the increased risk of road mortality.

Invertebrates

- 9.9.27 The majority of habitats, i.e. arable farmland, across the development sites are considered to have low value for invertebrates. However, the further loss of some hedgerows to the developments will decrease the amount of suitable habitat available for invertebrates. However, the proposed attenuation areas, landscape planting and public open space, as well as residential gardens, in the completed developments could provide suitable habitat for a diverse range of invertebrates and therefore it is considered that there will be beneficial cumulative impacts on invertebrates overall.
- 9.9.28 If one or more pollution events were to occur in the watercourses during the construction works or post-construction across the developments, although unlikely, there could be adverse impacts on freshwater invertebrates due to a decrease in water quality. The severity of the cumulative impact would depend upon the nature, scale and timing of any pollution events. However, it is probable that there will be a beneficial cumulative impact on freshwater invertebrates as a result of the water quality in the local watercourses improving following the cessation of agricultural production as a result of the developments.

Reptiles

- 9.9.29 The habitats present within the cumulative assessment sites and application Site are broadly similar and are considered to have limited potential for a small number of common reptiles. There is a risk of harm to a low number of individual common reptiles which may be present during construction works. With the implementation of measures to protect reptiles during construction and with the creation of habitats which will be suitable for common reptiles within the proposed developments (e.g attenuation areas) no significance adverse cumulative effects on the local reptile population is predicted.

Other Fauna

9.9.30 No cumulative impacts are anticipated on dormouse, otter or water vole.

9.9.31 Cumulatively there will be impacts of minor significance on other fauna mainly arising from the risk of harm and disturbance during the construction works and increased risk of road mortality following the completion of the developments.

Summary of Potential Cumulative Impacts

9.9.32 Table 9.15 has been updated to provide a summary of potential cumulative impacts of the development prior to mitigation measures as described above.

Table 9.15 – Summary of Potential Cumulative Impacts

Cumulative Impacts				
Statutory and non-statutory sites				
Ecological Feature	Potential Impact	Value of Ecological Feature	Significance of Effect	Mitigation Summary
Bretch Local Wildlife Site	No impact	County	Not significant	Mitigation not required
Salt Way pLWS	Slight loss to widen existing gaps/ indirect effects	County	Low significance	Mitigatable
Cumulative Impacts				
Habitats				
Arable	Direct loss	Not significant	Not significant as a habitat but its loss will have an effect certain fauna species	Not mitigatable
Hedgerows	Loss/damage but majority retained	Local	Low significance	Mitigatable
Mature / semi-mature trees	Direct loss / damage but majority retained	Local	Low significance	Mitigatable
Woodland	Direct loss / damage to areas retained	Local	Low significance	Mitigatable
	Indirect effects	Local	Significant effect	

Watercourses				Mitigatable
Fauna				
Amphibians	Loss of foraging habitat for amphibian populations Harm/ disturbance	Local	Loss of habitat not significant, potential harm during construction – significant effect for individuals	Partly Mitigatable
Badgers	Included in confidential Appendix 9.4 within original ES			
Bats	Loss of foraging and flight-lines	Local	Significant Effect	Mitigatable
	Harm post-construction	Local	Effect of significance on individuals	Not mitigatable
Birds	Direct loss of breeding sites / Harm and disturbance	Local	Low significance for tree nesting bird species	Partly mitigatable
	Direct loss of feeding habitat		Significant Effect for ground nesting bird species	Partly Mitigatable
	Harm post-construction		Low significance	Not mitigatable
Brown hares	Direct loss of laying up and foraging habitats	Local	Low significance	Not mitigatable
Invertebrates including white-letter hairstreak	Direct loss of habitat	Local	Low significance	Partly mitigatable
	Harm if pollution event		Effect of significance	

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Freshwater Invertebrates	Improvement of water quality		depending on scale of pollution event Beneficial	
Reptiles	Direct loss of limited habitat Harm/disturbance	Local	Effect of low significance Significant effect for individuals	Mitigatable Mitigatable
Other fauna	Harm/disturbance	Local	Low significance	Partly mitigatable