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**Bowland Meadows,
Land East of
Chipping Lane,
Longridge**

**Ecological
Assessment Report**

Report Number: 2001_R06_PM_AS

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Section 1: Introduction

Background

- 1.1 Tyler Grange LLP (TG) has been appointed to provide an assessment of the ecological impacts arising from the proposed creation of a new residential development (circa 106 dwellings) including affordable housing, new vehicular and pedestrian accesses, on-site landscaping, public open space and ecological enhancement measures on the northern outskirts of Longridge, a town in the Ribble Valley.
- 1.2 The detailed application relates to land off Chipping Lane located to the immediate north-west of the settlement of Longridge, hereafter referred to as the 'site'. The application site boundary is shown in red; however, the area to the north is set aside for informal open space / ecological mitigation and enhancement (see **Habitat Features Plan 2001/P04**). The site is centred on Ordnance Survey (OS) grid reference SD 60196 38111 and extends to a total area of 7.3 hectares (18.05 acres).
- 1.3 The site currently comprises pastoral fields separated by hedgerows with occasional scattered trees. Three ponds are present within the site. Adjacent land use is also primarily agricultural.
- 1.4 A wider outline application is being developed for 'Land at Higgins Brook', which incorporates this site area and is subject to a separate Ecological Assessment, with a view to submission in the near future.

Scope of this Report

- 1.5 The purpose of this report is to:
 - Using available background data and results of field surveys, describe and evaluate the ecological resources present within the likely 'zone of influence' (Zoi)¹ of the proposed development;
 - Assess ecological issues and opportunities as a result of development; and
 - Where appropriate, describe mitigation and enhancement proposals to ensure conformity with planning policy and legislation.

¹ Defined as the areas/resources that may be affected by the biophysical changes caused by activities associated with a project



Section 2: Methodology

Desk Study

- 2.1. A preliminary desk based study was undertaken to identify statutory and non-statutory nature conservation designations as well as records of protected species within 2km of the site. Relevant planning policies in relation to the site were also consulted. The following sources were used:
- Multi-Agency Geographical Information for the Countryside (MAGIC) Website for international nature conservation designations such as Special Areas of Conservation within 5km such as and statutory designated sites (e.g. Local Nature Reserves (LNRs)) within 2km of the site;
 - Non-statutory local wildlife sites and records of protected species within 2km of the site were requested from the Lancashire Environmental Records Centre LERN;
 - The Ribble Valley Borough Council District Wide Local Plan was checked to identify policies which need to be considered as part of the development of the site (see **Appendix 6**); and
 - Natural England's website (www.naturalengland.org.uk) was checked to identify the Natural Area² in which the site is located.

Extended Phase I Habitat Survey

- 2.2. An 'extended' Phase I habitat survey was undertaken on 29 November 2013 by Paul Moody (Ecologist, Tyler Grange) a full member of CIEEM and Hayley Care (Graduate Ecologist, Tyler Grange) a graduate member of the Chartered Institute of Ecology and Environmental Management (CIEEM). The weather conditions on the day of the survey were mostly dry and cool (4°C), with a light breeze and heavy cloud and fog in the morning.
- 2.3. The survey broadly followed the methodology set out in guidance from JNCC (2010)³. This method of survey provides information on habitats and assesses the potential for legally protected or otherwise notable species to occur in and adjacent to the site and allows the ecological value of resources to be determined.

Additional Surveys

- 2.4. The following additional surveys were also conducted during the Phase 1 habitat survey:

² National Character Areas divide England into 159 Natural Areas. Natural Area boundaries are based on the distribution of wildlife and natural features, and on the land use pattern and human history of each area. Natural Areas inform local priorities for nature conservation.

³ Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey - a technique for environmental audit. JNCC, Peterborough.



- An assessment of ponds on and within 250m of the site for their suitability to support great crested newt *Triturus cristatus* (GCN) using the GCN Habitat Suitability Index (HSI) (see **Appendix 2**);
- An assessment of hedgerows with regard to the Hedgerows Regulations 1997 (see **Appendix 3**);
- An assessment of trees within the site for their suitability to support roosting bats (see **Appendix 4**); and
- A badger *Meles meles* survey (see **Appendix 5**).

Evaluation

- 2.5. The habitats and species in this ecological appraisal were evaluated using published guidance produced by CIEEM. The level of value of specific ecological receptors is assigned using a geographic frame of reference, i.e. international value being most important, then national, regional, county, district, local and lastly, within the context of the site itself.
- 2.6. Value judgements are based on various characteristics that can be used to identify ecological resources or features likely to be important in terms of biodiversity. These include site designations (such as Sites of Special Scientific Interest (SSSIs)), or for undesignated features, the size, conservation status (either; locally, nationally or internationally), and the quality of the ecological resource. In terms of the latter, 'quality' can refer to habitats (for instance if they are particularly diverse, or a good example of a specific habitat type), other features (such as wildlife corridors or mosaics of habitats), or species populations or assemblages.

Impact Assessment

- 2.7. Impacts can be direct or indirect, permanent or temporary, negative or positive. Impacts may include habitat loss, habitat degradation, fragmentation and isolation of habitats, mortality and disturbance to species.
- 2.8. The significance of an adverse or beneficial impact is the product of the magnitude of the impact and the value or sensitivity of the ecological receptors affected. Current guidance on ecological impact assessment (IEEM 2006) provides a complex framework for the consideration of impacts and the reader is referred to the actual guidance for full details. The value of ecological receptors is given a geographical reference and any impacts are assessed accordingly. Where appropriate, details of proposed mitigation measures are considered when determining residual impacts to ecological features.

Limitations

- 2.9. The Phase 1 survey was undertaken in January, which is sub-optimal, as most plants were not in leaf/flower and some species may have not been recorded. However, given the nature of the site and habitats present this is not likely to have affected the evaluation of the habitats or assessment of potential development impacts.



Section 3: Ecological Resources

Site Context

- 3.1. The site comprises pastoral fields consisting of species poor semi-improved grassland separated by hedgerows with occasional scattered trees. The land is more or less flat and is to the north of Longridge, Ribble Valley. The site is bordered by residential developments and a Sainsbury's supermarket to the south, Chipping Lane and Longridge Cricket Ground to the west and by further pastoral land to the north and east.

Natural Area

- 3.2. The site is situated within Natural England Natural Area Number 12 – Forest of Bowland. The Forest of Bowland is dominated by a distinct, almost circular dome of heather moorland. The high Millstone Grit-capped summits of Bowland Fells and Pendle Hill, with their expansive areas of wild, open rolling heather moorland and blanket bog, are managed principally for grouse and sheep. Such areas provide a habitat for internationally important populations of red grouse, hen harrier, merlin, peregrine and golden plover.
- 3.3. This dome of moorland is incised by steep, wooded river valleys and is surrounded by a soft, undulating landscape with a mosaic of rush-filled pastures, herb-rich hay meadows and broadleaved woodland, separated by lush agricultural grassland, parkland and water bodies, such as Stocks Reservoir. The area is traversed by many fast-flowing upland streams and rivers, including the Hindburn, Roeburn, Lune, Wyre, Brock, Calder, Ribble and Holder.
- 3.4. Most of the site is pastoral and is not representative of habitats within the Forest of Bowland Natural Area.

Protected Sites

Statutory Nature Conservation Designations

- 3.5. The site does not have any statutory nature conservation designations and none are present within 2km. No internationally designated sites are present within 5km of the site.

Non-statutory Nature Conservation Designations

- 3.6. Non-statutory nature conservation designations are not afforded legal protection. However they are recognised as being of countywide importance because of their significance as wildlife habitats, their value to communities or other reasons relating to their locational context.
- 3.7. The site has no non-statutory nature conservation designations. Three County Biological Heritage Sites (BHS) and one Important Bird Area (IBA) are outlined on the Ribble Borough Council District wide Local Plan Map as being within 2km of the site boundary. Table 3.1 shows a summary description of these sites.



Site Name and Designation	Distance and Direction from Site	Description/ Summary
Bowland Fells IBA	1.30km north and north east at nearest point	An extensive upland area in Lancashire, with major habitats comprising heather-dominated moorland and blanket mire. It is important for its upland breeding birds, especially breeding merlin <i>Falco columbarius</i> and hen harrier <i>Circus cyaneus</i> .
Spade Mill Reservoirs BHS 63NW03	800m south east	Two reservoirs with associated managed grassland. Used as an angling site. It is designated for the bird species present including wintering birds such as lapwing, snipe, black-headed, common and lesser black-backed gulls and summer breeding birds including little ringed plover and oystercatcher. Birds use these reservoirs in conjunction with Alston Reservoirs (BHS 63NW01)
Alston Reservoirs BHS 63NW01	1.2 km south	Two reservoirs surrounded by agricultural land with residential development to the west and college wood BHS to the east. The site is of ornithological importance, supporting high diversity and numbers of wintering wildfowl (which also utilise Spade Mill Reservoirs (BHS 63NW03). The site is also of botanical importance with species-rich grassland embankments.
College Wood BHS 63NW02	1.60km south east	Predominantly semi-natural woodland which is listed in the Lancashire Inventory of Ancient Woodland (English nature, 1994). Surrounded by fields of grassland pasture, it is designated for the woodland and scrub habitat present.

Table 3.1 Non-statutory Nature Conservation Designations within 2km of the site

Habitats and Flora within the Site

- 3.8. The habitat features recorded within the site and on adjacent land are illustrated on the **Habitat Features Plan (2001/P04)**. A photographic record is provided in **Appendix 1**.

Species poor semi-Improved Grassland (Plate 1)

- 3.9. The site predominantly comprises grazed pastoral fields, consisting of poor semi-improved grassland. Plant species present include perennial ryegrass *Lolium perenne*, cocksfoot *Dactylis glomerata*, Yorkshire fog *Holcus lanatus*, white clover *Trifolium repens*, red clover *Trifolium pratense*, broad-leaved dock *Rumex obtusifolius*, common sorrel *Rumex acetosa*, creeping buttercup *Ranunculus repens* and meadow buttercup *R. acris*. Occasional patches of soft rush *Juncus effusus* were present in areas which are subject to waterlogging.

Hedgerows (Plates 2 and 3)

- 3.10. The **Habitat Features Plan (2001/P04)** also shows the extent of hedges present within the site and on adjacent land. A summary is provided below.



- 3.11. The fields are, for the most part bounded by hawthorn *Crataegus monogyna* dominated hedgerows which are subject to various levels of management, with some being flail cut and others receiving no management and becoming treelines and scrub.
- 3.12. Further details on the structure and species composition of the hedges can be found in **Appendix 3**, which also gives an assessment of their importance in relation to the Hedgerows Regulations 1997. A full Hedgerows Regulations assessment was not possible due to the time of year which meant an assessment of woodland herbs was not possible. A summary of those present within the site is provided below:
- H3 - a tall unmanaged hedge consisting of a mixture of woody species consisting of hawthorn, beech *Fagus sylvatica*, ash *Fraxinus excelsior*, blackthorn *Prunus spinosa*, hazel *Corylus avellana*, holly *Ilex aquilinum* and alder *Alnus glutinosa*. Field and ground layer species recorded include nettle *Urtica dioica*, bramble *Rubus fruticosus*, field thistle *Cirsium arvense*, soft rush *Juncus effusus* and buckler fern *Dryopteris sp.* Based on the estimate of importance undertaken in **Appendix 3**, the hedge is likely be **important** under the Hedgerows Regulations 1997;
 - Hedge H5 bounds the site to the northwest and is an unmanaged hedge consisting of hawthorn, beech and ash. Ground flora consists of grasses of the same species composition as that recorded within the adjacent field. Based on the estimate of importance undertaken in **Appendix 3**, the hedge is likely to be of **borderline importance** under the Hedgerows Regulations 1997. Further details are provided in **Appendix 3**;
 - H6 - an unmanaged hedge consisting of a range of woody species including; alder, hazel, hawthorn, blackthorn and elder. Field and ground layer species recorded include; bramble, nettle, common sorrel *Rumex acetosai*, hogweed *Heracleum sphondylium* and red campion *Silene dioica*. Based on the estimate of importance undertaken in **Appendix 3**, the hedge is likely be **unimportant** under the Hedgerows Regulations 1997;
 - H7 - a flail cut hedge consisting of hawthorn. Ground and field layer include common cleavers *Galium aparine* and ivy *Hedera helix*. Based on the estimate of importance undertaken in **Appendix 3**, the hedge is likely be **unimportant** under the Hedgerows Regulations 1997;
 - H8 - a flail cut hedge consisting of hawthorn, ash, holly and sycamore *Acer pseudoplatanus*. Field and ground layer species recorded include; b ramble, ivy, nettle, cleavers and cocksfoot. Based on the estimate of importance undertaken in **Appendix 3**, the hedge is likely be **borderline importance** under the Hedgerows Regulations 1997; and
 - H9 - an unmanaged hedge consisting of alder, hawthorn, ash, holly, blackthorn and elder. The ground / field layer includes; field thistle, bramble and cocksfoot. Based on the estimate of importance undertaken in **Appendix 3**, the hedge is likely to be **important** under the Hedgerows Regulations 1997.

Mature Trees (Plates 4 and 5)

- 3.13. There are mature trees present within hedges throughout the site which are associated with hedgerows and ponds. Species present include alder *Alnus glutinosa*, *pedunculate* oak *Quercus robur* and ash. These trees are denoted on the **Habitat Features Plan (2001/P04)** and are



described in more detail in **Appendix 4**. A separate Tree Quality Survey report has also been produced by Tyler Grange to accompany the planning application submission.

Ditches (Plate 6)

- 3.14. Two ditches are present within the site and are associated with hedges delineates H3 and H6 which delineate the south-eastern and north-eastern site boundaries respectively. The ditches are heavily shaded by their associated hedgerows and, at the time of survey, had little emergent vegetation, with in-channel species being limited to soft rush, willowherb *Epilobium* sp., common nettle and bramble.

Ponds

- 3.15. There is one pond (P1) shown on the **Habitat Features Plan (2001/P04)** present within the site Plate 7 in Appendix 1 shows a photograph of this pond. It is partially shaded by alder and willow *Salix* sp. trees and emergent and aquatic vegetation is limited to soft rush, fools water cress *Apium nodiflorum* and floating sweet-grass *Glyceria fluitans* at the time of survey. Further details can be found in **Appendix 2**.

Invasive Species

- 3.16. No invasive species that are subject to statutory controls were recorded during the survey.

Habitats on Adjacent Land

- 3.17. Other land present adjacent to the site consists of fields supporting grassland and hedges of a similar composition to that recorded within the site. Further hedge composition details are provided in **Appendix 3**.
- 3.18. A further 3 ponds are present on land adjacent to the site. For locations see P2, P3 and P4 on Habitat Features **Plan 2001/P04** and plates 8, 9 and 10 in **Appendix 1** for photographs of these ponds.
- 3.19. Apart from P3 which is a drying area of seasonal inundation, they are broadly similar in character to pond P1. Further details are provided in **Appendix 2**.
- 3.20. Examination of maps and aerial photography suggested that a further 3 ponds are present within 250m of the site, however during the Phase 1 survey these were found to be dry depressions with soft rush present.
- 3.21. One small section (approximately 35m) of dry stone wall is present to the north of the site. A photograph is shown on see **Plate 11** in **Appendix 1**.
- 3.22. Longridge Cricket Club which consists largely of amenity grassland lies to the west of the site.
- 3.23. To the south of the site lies residential development and a Sainsbury's supermarket.



Protected and Notable Fauna

3.24. Those faunal species or groups that have been considered in this assessment are summarised in Table 3.2 below.

Species / group	Records Received within 2km since 2003 and Potential for Presence on site N.B. distance measured from Google Earth.	Protection/Conservation Status
Badger	<p>No badger records were obtained during the desk study.</p> <p>No field signs were recorded during the survey. The site offers suitable foraging habitat in the form of pastoral fields and sett digging habitat within hedgerows.</p>	PBA
Bats	<p>The following records were obtained for bats during the desk study.</p> <ul style="list-style-type: none"> • Common pipistrelle <i>Pipistrellus pipistrellus</i>: two records 700m south (2011 & 2009). • One unidentified bat record 740m south (2006). <p>Hedgerows throughout the site are all likely to provide suitable feeding habitat for bats.</p> <p>Descriptions of trees and assessments of their suitability to support roosting bats are given in Appendix 4 and shown on the Habitat features Plan (2001/ P04).</p> <p>2 trees (T22 and T23) within the site were considered to offer high potential to support roosts.</p> <p>1 tree (T2) was considered to provide moderate bat roost potential; and</p> <p>8 other trees (T1, T18, T19 T20, T21, T24, T25 and T26) were considered to have low bat roost potential.</p> <p>There are no buildings present within the site which could support bat roosts.</p>	CHSR LBAP WCA NERC (all except common pipistrelle)
Birds	<p>The following records of birds were obtained during the desk study.</p> <ul style="list-style-type: none"> • Barn owl <i>Tyto alba</i> one record 1.5km northeast (2013) • Curlew <i>Numenius arquata</i> • House sparrow <i>Passer domesticus</i> • Starling <i>Sturnus vulgaris</i> • Dunnock <i>Prunella modularis</i> • Lapwing <i>Vanellus vanellus</i> <p>No notable or rare birds were observed during the survey.</p> <p>The hedgerows and scattered trees are all likely to provide</p>	WCA barn owl NERC SoPI – except barn owl LBAP lapwing BoCC Red – house sparrow, starling and lapwing. BoCC Amber – barn owl, curlew and dunnock



Species / group	Records Received within 2km since 2003 and Potential for Presence on site N.B. distance measured from Google Earth.	Protection/Conservation Status
	<p>nesting and foraging habitats for a range of common passerines. This could include priority species such as dunnock, song thrush <i>Turdus philomelos</i> and yellowhammer <i>Emberiza citrinella</i></p> <p>There is negligible potential for ground nesting birds due to disturbance and trampling by livestock.</p> <p>No buildings are present on site which could afford barn owl nesting opportunities, however the site contains suitable foraging habitat for barn owl <i>Tyto alba</i> and one of the trees (T38) has holes large enough to potentially support nesting barn owl.</p>	
GCN and other amphibians	<p>The following records were obtained for amphibians during the desk study.</p> <ul style="list-style-type: none"> • Great crested newt <i>Triturus cristatus</i> 19 records, 2km south (2011 & 2003). • Common toad <i>Bufo bufo</i> two records, 2km south (2011). • Common frog <i>Rana temporaria</i>, eight records within 2km. <p>Of the four ponds present within or within 250m of the site, three (Ponds 1, 2 and 4) are considered to be 'good' by the HSI (see Appendix 2).</p> <p>Pond 3 was considered poor, predominantly due to poor water quality.</p> <p>Most of the terrestrial habitat within the site is grassland that is closely grazed and therefore sub-optimal for GCN. However hedgerow bases and their associated margins could offer foraging and refuge potential.</p>	CHSR LBAP LBAP long list – toad and frog only NERC SoPI – GCN & toad WCA
Invertebrates	<p>The following records of invertebrates were obtained during the desk study.</p> <p>Moths</p> <p>NERC SoPI:</p> <ul style="list-style-type: none"> • Heath rustic <i>Xestia agathina</i> • Dark-barred twin-spot carpet <i>Xanthorhoe ferrugata</i> • Small Phoenix <i>Ecliptopera silaceata</i> • Small square spot <i>Diarsia rubi</i> • Haworth's minor <i>Celaena haworthii</i> • Green brindled crescent <i>Allophyes oxyacanthae</i> • Rosy rustic <i>Hydraecia micacea</i> • Sallow <i>Xanthia icterialis</i> • Oak hook-tip <i>Watsonalla binaria</i> • Buff ermine <i>Spilosoma luteum</i> • White ermine <i>Spilosoma lubricipeda</i> • Dot moth <i>Melanchnra persicariae</i> • Ghost moth <i>Hepialus humuli</i> • Dusky brocade <i>Apamea remissa</i> • Spinach <i>Eulithis mellinata</i> • Dusky thorn <i>Ennomos fuscantaria</i> • Centre-barred sallow <i>Atethmia centrigo</i> • Grey dagger <i>Acronicta psi</i> • Shoulder-striped wainscot <i>Mythimna comma</i> 	NERC SoPI



Species / group	Records Received within 2km since 2003 and Potential for Presence on site N.B. distance measured from Google Earth.	Protection/Conservation Status
	<ul style="list-style-type: none"> • Figure of eight <i>Diloba caeruleocephala</i> • Garden tiger <i>Arctia caja</i> • Broom moth <i>Melanchra pisi</i> • Cinnabar <i>Tyria jacobaeae</i> <p>Lancs LBAP Provisional Long List:</p> <ul style="list-style-type: none"> • Gold spangle <i>Autographa bractea</i> • Puss moth <i>Cerura vinula</i> <p>Habitats present on site are expected to support a common assemblage of invertebrates.</p>	
Water vole <i>Arvicola amphibious</i>	<p>No records of water vole were returned during the desk study.</p> <p>The ditches present within site are shallow, dry on a regular basis and lacked suitable food species for water vole due to heavy shading. The presence of water vole can be reasonably discounted at this site.</p>	WCA NERC LBAP
Other Mammals	<p>The following records of mammals were obtained during the desk study.</p> <p>European hedgehog <i>Erinaceus europaeus</i> two records 1.73km south (2011 & 2009).</p> <p>The site represents potential habitat for hedgehog (hedgerows and field boundaries).</p> <p>No polecat habitat in the form of waterways or woodland is present within the site.</p> <p>No otter habitat is present within the site in the form of rivers, brooks or streams. The ditches present within the site held little water at the time of survey and although such habitats can be used as commuting routes for otter, no ditches within the site connected to suitable water courses and as such are unlikely to be used by otter.</p>	NERC SoPI WCA
Reptiles	<p>No records of reptiles were obtained during the desk study.</p> <p>The site does not contain any high value habitat for reptiles such as tussocky grassland with associated scrub, south facing embankments, log piles or compost heaps. The site is also subject to high levels of disturbance by grazing livestock and as such is unlikely to support reptile populations.</p>	WCA NERC
<p>Abbreviations</p> <p>WCA Wildlife and Countryside Act 1981 (as amended);</p> <p>PBA Protection of Badgers Act 1992;</p> <p>CHSR Conservation of Habitats and Species Regulations 2010 (as amended);</p> <p>NERC Section 41 of the Natural Environment and Rural Communities Act 2006 – Species or Habitat of Principal importance (SoPI or HoPI);</p> <p>LBAP Lancashire Biodiversity Action Plan species or habitat</p> <p>BoCC Birds of Conservation Concern</p>		

Table 3.2: Summary of fauna considered as part of this ecological appraisal



Section 4: Evaluation of Ecological Resources

- 4.1. Table 4.1 below summarises the value of ecological resources within the Zol of the proposals and evaluation of ecological resources in accordance with the IEEM geographic scale, along with any protection offered by relevant legislation and planning policy (see Appendix 5).

Ecological Resource	Ecological value	Policy/Legal Protection (see below table for explanation of abbreviations)
Protected Sites		
Bowland Fells Important Bird Area (IBA)	Bowland Fells IBA is considered to be of international ecological value for breeding birds.	NPPF ENV 9 ENV 10
Spade Mill Reservoirs BHS 63NW03	BHSs are considered to be of nature conservation value within the county, and as such they are considered to be of county ecological value .	NPPF ENV 9 ENV 10
Alston Reservoirs BHS 63NW01	BHSs are considered to be of nature conservation value within the county, and as such they are considered to be of county ecological value .	NPPF ENV 9 ENV 10
College Wood BHS 63NW02	BHSs are considered to be of nature conservation value within the county, and as such they are considered to be of county ecological value .	NPPF ENV 9 ENV 10



Habitats within the Site		
Species poor semi-improved grassland	The species-poor semi-improved grassland is heavily grazed, contained only common and widespread species, is a common and widespread habitat locally and is not of intrinsic ecological value. As such this habitat is considered to be of negligible ecological value . However, they may have some supporting value to a range of bird species and foraging bats, as well as amphibians, small mammals and invertebrates, although they are not likely to be of importance in maintaining populations of these species in the wider locality.	None
Hedgerows	The hedgerows present within the site are NERC Habitats of Principal Importance (HoPI) and provide some foraging habitat for bats and birds and cover and shelter for wildlife in an otherwise open landscape. The hedgerows also provide wildlife corridors and contribute to the network of similar habitat within the local area. Some of the hedges are deemed to be important or of borderline importance under the Hedgerow Regulations 1997. Overall The hedgerow network within the site is a considered to be of local ecological value .	NERC NPPF Local Policy ENV 10
Mature Trees	The mature trees within the site provide suitable habitat for breeding birds and foraging bats as well as structural diversity within the site. The mature trees are not replaceable within the short to medium term and are considered to be of local ecological value .	NPPF Local Policy ENV 10
Ditches	The ditches present within the site provide potential habitat for invertebrate species and small mammals. The ditches also provide wildlife corridors and contribute to the network of similar habitat within the local area and are considered to be of ecological value within the context of the site .	NPPF Local Policy ENV 10
Habitats on Adjacent Land		
Poor Semi-improved Grassland	The species-poor semi-improved grassland present adjacent to the site is of the same character as that occurring within the site and is therefore also evaluated as being of negligible ecological value .	None
Hedgerows	The hedgerows present adjacent to the are also of the same character as those occurring within the site and is therefore also evaluated as being of local ecological value .	NERC NPPF Local Policy ENV 10
Mature Trees	The mature trees within the hedges on land adjacent to the site are also of the same character as those occurring within the site and is therefore also evaluated as being of local ecological value .	NPPF Local Policy ENV 10



Ponds	The ponds within the site potentially provide habitat for amphibians and invertebrate species. The ponds present within the site are considered to be of ecological value within the context of the site.	NPPF LBAP
Ditches	The ditches present adjacent to the site provide potential habitat for amphibians including GCN and invertebrate species. The ditches also provide wildlife corridors and contribute to the network of similar habitat within the local area and are considered to be of ecological value within the context of the site.	NPPF Local Policy ENV 10
Amenity Grass	The amenity grassland present to the west of the site is short mown and is of negligible ecological value.	None
Dry stone wall	The dry stone wall present to the north of the site potentially provides habitat for amphibians, small birds, and invertebrates including SoPI. The dry stone wall present within the site is therefore considered to be of ecological value within the context of the site.	NPPF



Ecological Resource	Ecological value	Policy/Legal Protection (see below table for explanation of abbreviations)
Fauna		
Badger	No evidence of badger was recorded during the survey within or adjacent to the site. Negligible ecological value	PBA
Bats	The grassland, ditches, ponds, hedges and mature trees are likely to provide a foraging resource for bats. Some of the mature trees offer potential to support roosting bats. The site is considered likely to support a bat assemblage of local ecological value .	CHSR WCA LBAP common pipistrelle NERC – except common pipistrelle NPPF Local Policy ENV 7
Birds	The hedgerows, trees and ponds present within the site are potential ecological resources for birds which are most likely to consist of common woodland species, though some of these such as duncock and yellowhammer are priority species. The site is unlikely to be a major resource for wintering birds due to disturbance from livestock. The site is considered likely to support an assemblage of birds of local ecological value .	WCA LBAP NERC Local Policy ENV 7
GCN and other Amphibians	<p>The ponds present within and adjacent to the site provide potential breeding habitat for amphibians including GCN. The hedgerow bases, dry stone wall and some of the exposed roots of the mature trees provide potential terrestrial habitat for amphibians.</p> <p>Given the extent and quality of habitat for amphibians within the site, it is unlikely that large populations of any species would be present and are not likely to be more than of local ecological value.</p> <p>It would be very unlikely that ponds within and adjacent to the site would support a large GCN population according to the GCN Mitigation Guidelines⁴ i.e. a maximum count of greater 100 individuals during one survey.</p>	CHSR WCA NERC (GCN & common toad) Local Policy ENV 7 LBAP - common frog

⁴ English Nature (2001) Great crested newt mitigation guidelines English Nature, Peterborough.



Terrestrial Invertebrates	The site is considered likely to support a common assemblage of invertebrates, likely to be of ecological value within the context of the site . No high quality species rich grassland, woodland or other habitat features exist which would be indicative of high invertebrate diversity. They do not require further specific are not consideration in this assessment.	WCA NERC Local Policy ENV 7
Other mammals	Due to a lack of suitable habitat (see Section 3) the site is of unlikely to support polecat or otter. The site represents potential habitat for hedgehog, likely to be of ecological value within the context of the site, if present .	NERC. NPPF LBAP
Reptiles	As stated in Section 3 the site does not contain any suitable habitat for reptiles. Reptiles are not considered further in this assessment.	WCA NERC Local Policy ENV 7
Abbreviations used:		
NPPF: National Planning Policy 2012		
Policies ENV: South Ribble Planning Policies		
WCA: Wildlife and Countryside Act 1981 (as amended)		
CRoW Countryside and Rights of Way Act 2000		
CHSR: Conservation of Habitats & Species Regulations 2010 (as amended)		
NERC: Habitats and species of Principal Importance which are listed at Section 41 of the Natural Environment and Rural Communities Act 2006. Local Planning Authorities must have regard for these in line with Section 40 of the Act;		
LBAP: Priority species in Lancashire Local Biodiversity Action Plan		
PBA: Protection of Badgers Act 1992		

Table 4.2: Summary of value of ecological resources in relation to faunal species



Section 5: Potential Ecological Effects, Mitigation & Enhancement Strategy

Proposed Development and Likely Zone of Influence of Development

- 5.1. The proposed development layout is shown in **Appendix 8** and is a residential development of circa 106 units which will mainly affect pastoral fields, though there may potentially be the need to remove some sections of hedgerow and three trees associated with Chipping Lane to provide access into the site. Several other trees will also be lost to permit internal road connections.
- 5.2. Once operational, the potential for ecological impacts on habitats and species is likely to be limited to the risk of increased disturbance to habitats locally due to informal recreation, such as dog walking.

Potential Impacts and Mitigation

- 5.3. The following paragraphs provide an analysis of the likely impacts of development at the site and potential consequences in respect of planning policy and relevant wildlife legislation (see **Appendix 6**).
- 5.4. Both the Countryside and Rights of Way (CRoW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006 give the importance of conserving biodiversity a statutory basis, requiring government departments (which includes Local Planning Authorities) to have regard for biodiversity in carrying out their obligations (which includes determination of planning applications) and to take positive steps to further the conservation of listed species and habitats. These articles of legislation require Ribble Valley Council to take measures to protect listed species or habitats from the adverse effects of development, where appropriate, by using planning conditions or obligations. Planning authorities should refuse permission where harm to the species or their habitats would result, unless the need for, and benefits of, the development clearly outweigh the harm.

Designated Sites

- 5.5. The site is not covered by any statutory or non-statutory nature conservation designations. Given the physical distances between the site and conservation designations in the locality (see Table 3.1) and taking into account the mainly residential nature of development proposed, it is very unlikely that future development will result in any adverse effects to the features for which these sites are designated.
- 5.6. Therefore development proposals are not likely to trigger planning policy related to protected sites.



Habitats

- 5.7. The development of the site is likely to result in the loss of 3.5 ha of species poor semi-improved grassland of negligible ecological value, the loss of which will not trigger any planning policies and will not require any specific mitigation.
- 5.8. Approximately 190m of hedge H8 and 40m of hedge H3 including 5 mature trees present within these hedges would be lost to allow road access and for visibility splays at the entry point to the development. A ditch also associated with H8 would need to be culverted in two places, resulting in the loss of approximately 40m of ditch. In the absence of mitigation this would potentially trigger planning policies both within the NPPF and local planning policy ENV 13 which seeks to protect important landscape features including hedges and their associated features.
- 5.9. Loss of hedge lengths will be compensated by providing new species-rich hedgerow planting within the site totalling 355m in length. The proposed location for new hedges is shown on **The Landscape Strategy Plan (2001/P23)** and seeks to augment retained habitats and enhance connectivity between similar habitats present on adjacent land.
- 5.10. In addition to hedgerow planting, retained hedges within the site will receive management to improve their condition consisting of gapping up of defunct sections and laying where appropriate to improve hedge thickness, fruiting, flowering and longevity.
- 5.11. Where hedgerows are associated with ditches these will also be managed to increase their wildlife value. Operations would include dredging of blocked sections and selected tree felling to encourage marginal vegetation and potentially the installation of dams with overflows to increase water depth where appropriate.
- 5.12. In addition to hedge planting, the Landscape Strategy (see plan **2001/P023**) seeks to increase the ecological value of the site through:
- The provision of additional wildlife ponds;
 - Creation of rough margins to fields;
 - The establishment of low intensity grazing regimes aimed at improving the floral diversity of existing grass sward; and
 - Bird and bat boxes will be erected on mature trees where appropriate.
- 5.13. A Sustainable Urban Drainage System (SUDS) will also be incorporated within the site's green infrastructure. As well as reducing flood and pollution risks, ecological elements will include a mixture of open water and reed margins which will have additional benefits for wildlife such as invertebrates, amphibians and birds.
- 5.14. More generally in relation to pollution risk, construction activities will adhere to the Environment Agency's Pollution Prevention Guidelines (PP5 and PPG6).



Protected and Notable Species

Badgers

- 5.15. No setts or other definitive evidence of badger activity are present on the site. However the site does have appropriate sett building and foraging habitat for badgers and their status can change rapidly.
- 5.16. It is therefore recommended that a badger survey is carried out three months prior to the commencement of any development works, to check that no badger setts have been dug on site or on adjacent land since the completion of the Phase 1 survey. Where necessary, suitable appropriate mitigation proposals would need to be devised. It is considered that given the current absence of badger setts within / adjacent to the site the above measures could be secured via a planning condition and further survey work should not be required prior to determination of a planning application.

Bats

- 5.17. The hedgerows and trees are likely to provide suitable foraging and commuting habitat for bats. They also provide a link to other habitats in the locality likely to be used by bats such as hedgerow networks present elsewhere within the wider area. The proposed site layout seeks to protect and maintain bat foraging habitat by:
- Retaining hedges likely to act as foraging habitat for bats; and
 - Proposes habitat creation consisting of new hedges and ponds that would provide abundant invertebrate prey for bats (see **Landscape Strategy Plan 2001/P23**).
- 5.18. Bat activity surveys are to be undertaken due course in the spring / summer of 2014 to inform detailed proposals for habitat enhancement for bats.
- 5.19. No trees with either high or moderate bat roost potential would be lost (see **Habitat Features Plan (2001/P04** and masterplan in **Appendix 8**). Trees with high or moderate roost potential are retained within the site's overall green infrastructure and will be protected from disturbance both during construction and operation of the site. Appropriate planning conditions can be applied to secure this protection. It is therefore considered that further detailed dusk emergence and / or dawn re-entry surveys are not required to inform this assessment.
- 5.20. The proposed housing scheme would provide increased roosting opportunities for bats via the provision of bat boxes suitable for crevice dwelling species (e.g. the Ibstock 'Enclosed Bat Box B') which could be installed within some of the new commercial buildings again on south, southwest or southeast facing aspects. Integrated bat boxes have the advantage of offering a permanent space for bats with little maintenance and potentially better thermal properties. Bat access slates (e.g. Morris BatSlate) can be included on south, southwest or southeast facing pitches of new commercial units to provide access to crevices for roosting beneath roof tiles. Bat boxes will also be provided on mature trees within the site and.
- 5.21. Taken together the above measures are sufficient to ensure that the favourable conservation status of bats within the site will not be adversely affected by development proposals.



Breeding birds

- 5.22. The hedgerows and trees may support some priority species such as dunnoek, song thrush and yellowhammer together with other common woodland birds. Loss sections of hedgerow within the site could displace some birds which currently use these habitats. But given the relatively short hedgerow lengths affected and taking into account the overall green infrastructure that will be provided within the development layout which will include replacement hedgerow planting, it is unlikely that development would adversely affect the conservation status of priority bird species locally.
- 5.23. New hedgerows are proposed to north of the development (see **Landscape Strategy Plan 2001/P23**). These would provide additional nesting habitat for birds and would more than compensate for the hedgerow losses within the site. Planting of native fruit bearing species and creation of wildflower habitat would provide additional feeding resources. Bird boxes would be erected on mature trees retained in the proposed development layout. All native wild birds are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended). Work to remove the sections of hedgerow or any other woody vegetation clearance should not be undertaken during the active bird nesting season, between March and August inclusive. If this is not possible then works should be preceded by a check for active nests by an ecologist. If a nest is found an appropriate buffer will need to be left undisturbed until the chicks have fledged, as confirmed by an ecologist.

Great Crested Newt and other Amphibians

- 5.25. The ponds present within the site have the potential to support GCN as well as other SoPI species such as common toad. For the purpose of this assessment it has been assumed that a GCN population might be present in Ponds 1, 2 and 4 as well as populations of other more common amphibians such as common toad, common frog and smooth newt. Pond 3 has been discounted as a potential GCN pond due to its poor water quality, the probability of it drying out in summer months and its low HSI score. Given the habitat resources available, consisting of three scattered ponds and terrestrial habitat mainly concentrated along hedgerow bottoms it is considered very unlikely that a large population (where maximum counts would need to exceed 100 individuals in a single visit) would be present.
- 5.26. No potential GCN ponds would be lost as a result of the development; however some potential terrestrial habitat would be lost.
- 5.27. In the absence of appropriate mitigation site development activities could result in killing / injury of GCN if populations are found to be present in the ponds on adjacent land indicated.

Terrestrial Habitat loss

- 5.28. Table 5.1 below shows the likely losses as a result of the development in relation to potential GCN terrestrial habitat. The terms of reference used are those provided in relation to predicting the impact of development (see section 6.5 Summarising the Scale of Site Level Impacts) within the GCN Mitigation Guidelines⁴.



Distance from ponds	Area of species-poor semi-improved grassland to be lost (low quality terrestrial habitat)	Area of hedgerow supporting dense ground cover to be lost (high quality terrestrial habitat)
Immediate (<50m)	0	0
Intermediate (50m to 250m)	1.17ha	0
Distant (>250m)	2.4ha	0.026ha

Table 5.1: Estimated Loss of Potential Terrestrial Habitat for GCN

5.29. When assessed using the rapid risk assessment tool provided in the Natural England licence application spreadsheet⁵, the above habitat loss generates an offence probability of 0.4 (amber 'offence likely') indicating that, should GCN be found to be present in the ponds mitigation is likely to be required and a licence needed before works can commence.

GCN Mitigation Strategy

5.30. Detailed surveys conducted in accordance with the GCN Mitigation Guidelines to ascertain the actual presence / absence (and population size class if present) are currently in progress. If presence is confirmed this information would be required inform the implementation of the strategy outlined below and if GCN and used as the basis for a European Protected Species (EPS) licence application.

5.31. The **Habitat Enhancement for Great Crested Newts Plan (2001/P22)** shows habitats within the site which will be enhanced for GCN. They would also ensure that habitats for other amphibians is maintained and enhanced. Proposed enhancements will be designed in accordance with principles set out in the GCN Mitigation Guidelines:

- Creation of 2 new wildlife ponds to include suitable margins of the establishment of aquatic and emergent plants. Although not required for habitat loss the provision of new ponds will help to increase aquatic habitat resources of GCN and other amphibians and if colonised increase the amount of immediate terrestrial habitat within 50m of a pond. ;
- Creation of 0.071 ha m of new hedge with rough grass margins; and
- Creation of amphibian refuges.

5.32. The estimated amount of terrestrial habitat creation for GCN is set out in table 5.2 below.

⁵ http://www.naturalengland.org.uk/Images/wml-a14-2_tcm6-4103.xls



Distance from existing ponds	Amount of species poor semi-improved grassland to be created considered to be of low quality terrestrial habitat	Amount of hedge and dense grass uncut grass margin to be created
<50m	0	0.6 ha
Intermediate 50m to 250m	0	2.2 ha
Distant >250m	0	0

Table 5.2 Showing Estimated Terrestrial Habitat Creation for GCN

5.33. Existing habitats will also be managed to improve their value for GCN and will consist of:

- Selected tree felling around pond margins to increase light incidence and reduce leaf deposition;
- Periodic cleaning out of ponds during the winter to remove leaf litter accumulations and ensure a healthy balance of open water, aquatic vegetation and emergent plants around pond margins;
- Gapping up and laying of hedges to provide dense growth along hedge bases likely to be used as terrestrial habitat for daytime refuge and hibernation by GCN; and
- Establishment of low intensity grazing on species poor semi-improved grassland which should increase the abundance of invertebrate prey for GCN.

Avoidance of Killing and Injury

5.34. If GCN presence is confirmed by surveys (currently underway) in order to avoid killing or injuring GCNs during the construction phase a strategy to translocate GCN areas of the site affected by development site into areas of retained habitat will be required. Capture of newts would be achieved by:

- Installing GCN exclusion fence to enclose the footprint of the development within 250m of the any breeding ponds;
- Installation of drift fencing, pitfall traps and refugia within the excluded site area will divide it into compartments in order to maximise the chances of catching newts that may be moving within the development area;
- Installation of fences would take place during the period mid-March to October (weather dependent) when newts are active, in order to avoid the possibility of disturbing hibernating newts;
- Daily checking of pitfall traps and refugia with all amphibians captured will be moved and released into the receptor area. . Trapping procedures and effort would be commensurate with the population size determined by surveys and would be in accordance with GCN Mitigation guidelines⁴. Monthly checks of the exclusion and drift fences for the period of construction will be conducted with any damage repaired;



- Removal of drift fencing and pitfall traps on completion of the translocation and hand searches/destructive searches of any areas of high value habitat to be lost, mainly present along field margins and around the base of hedges under the supervision of a licensed ecologist; and
- Removal of the exclusion once construction is complete will be done between February and October to avoid harm to newts that can crawl into crevices along the fence line to hibernate.

Habitat Management and Preventing Disturbance

- 5.35. Once the development is completed habitats for GCN including ponds and surrounding terrestrial habitat will be managed to ensure they remain suitable. Where necessary, measures to guide public access away from sensitive GCN habitat and to prevent the colonisation of fish in GCN ponds will be implemented. These measures would be contained within an Ecological Management Plan (EcMP) for the site.

Licensing

- 5.36. GCN is a European Protected Species (EPS) so to allow the development to proceed a development licence from Natural England (NE) will be needed if surveys confirm that GCN are present.
- 5.37. When considering a planning application where a species protected under the Habitat Regulations (an EPS) is present and would be affected by development proposals, the Local Planning Authority (LPA) must have regard of the three derogation tests set out in the Habitats Regulations, which are considered by NE when deciding whether a licence should be granted. Where the LPA considers that the three tests are not met (and therefore that NE are unlikely to grant a licence), they should refuse planning permission⁶. In respect of development, the three tests are that:
- There are 'imperative reasons of over-riding public interest' for the development;
 - There are 'no satisfactory alternatives'; and
 - The 'favourable conservation status' of the species would be maintained.
- 5.38. It is considered that the proposed mitigation strategy is sufficient to determine that the favourable conservation status of GCN would not be affected by the proposed development, should the species be present.
- 5.39. It is also considered that populations of other amphibian species which may be present would also be maintained and enhanced by the measures proposed.



Section 6: Residual Impacts

6.1. Table 6.1 below provides an assessment of impacts on the ecological features identified, taking into account the proposed mitigation and enhancement strategy.

Ecological Feature (and value)	Impact	Mitigation / Compensation / Enhancement Measures	Predicted Residual Impact
Protected Sites			
Bowland Fells Important Bird Area (IBA) (international ecological value)	None	N/A	Negligible
Alston Reservoirs BHS 63NW01 (county ecological value)	None	N/A	Negligible
College Wood BHS 63NW02 (county ecological value)	None	N/A	Negligible
Habitats within the Site			
Species poor semi-improved grassland (negligible ecological value)	Loss of 3.5 ha	No specific mitigation required, however, land within the site boundary totalling some 2.8 ha will become low intensity grazing pasture.	Negligible
Hedgerows (local ecological value)	Loss of 130 m of hedge	Loss of hedge lengths will be mitigated by providing new species rich hedgerow planting within the sit totalling 355m in length. Existing hedges retained within the site would receive management to improve their nature conservation value.	Beneficial within the context of the site
Mature Trees (local ecological value)	Five mature hedgerow trees would be lost	Losses would be mitigated through provision of the new hedgerow planting which will also include standard trees.	Temporary adverse within the context of the site. Losses would be mitigated i.e. become negligible within 30 - 40 years.
Ditches (ecological value within the context of the site)	Approximately 40m of ditch would be culverted	Loss would be mitigated through better management of retained ditches within the site	Negligible



Habitats on Adjacent Land			
Consisting of species poor semi-improved grassland, hedges with mature trees and ponds. and	No adverse impacts are predicted	None Proposed	Negligible
Protected Species			
Badger (negligible ecological value)	Reduction in available foraging habitat. No badger setts would be affected by the proposed development	Habitat improvements within the site would compensate for any habitat losses. The conservation status of badgers would not be affected.	Negligible
Bats	Minor reduction in foraging habitat consisting of the loss of approximately 130m of hedge. No potential roost sites are affected.	Creation of new hedges and management of retained hedges within the site would compensate any losses. New roosting opportunities within new housing and bat boxes on mature trees would increase roosting opportunities	Beneficial within the context of the site
Birds (local ecological value).	Loss of breeding habitat (130m of hedge); potential disturbance to nesting if site is cleared during the breeding season.	Retention and management of hedgerows and trees. Creation of new habitats including scattered trees, gardens, SUDS, will improve foraging opportunities.	Positive within the context of the site
GCN and other amphibians (local ecological value).	If present, potential loss of terrestrial habitat approximately 1.17 ha of intermediate and 2.42 ha of distant habitat	Creation of 2 new ponds. Creation of 0.6 ha of immediate and 2.2 ha of intermediate habitat terrestrial habitat of high quality.	Positive within the context of the site



Section 7: Summary and Conclusions

- 7.1. For the reasons stated in the previous Section (5 - para 5.5) development proposals are not likely to result in any adverse impacts to statutory or non- statutory nature conservation designations.
- 7.2. Some loss of habitat in connection with any proposed residential development is inevitable but could be largely confined to poor semi-improved grassland of negligible ecological value. Species-rich hedges, trees and ponds are the most valuable resources and would be largely retained within green infrastructure with protective buffers to avoid degradation. Any losses would be kept to a minimum, with compensation through replacement planting.
- 7.3. In terms of protected species surveys have determined that:
- Ponds present on land within 250m of the site could support populations of GCN. If present GCN may occur within suitable terrestrial habitat within the site;
 - Mature trees within the site may have the potential to support bat roosts, and other habitat features including hedges and woodland edges may provide feeding and commuting habitat for bats; and
 - Hedges are also likely to provide habitat for nesting birds, in particular woodland passerines. These may include priority bird species such as dunnock and song thrush.
- 7.4. It is considered that the above species can be accommodated by the implementation of mitigation outlined in Section 5. Given the land available there can be confidence that any impacts to protected species (namely GCNs, bats and breeding birds) can be accommodated within the proposed development. Where necessary, detailed mitigation proposals will be informed by further surveys currently underway and can be controlled by planning conditions.
- 7.5. Recommendations made in connection with tree and hedgerow planting and pond creation will contribute to local BAP targets.
- 7.6. In conclusion, whilst some detailed surveys have yet to be completed, given the land available for ecology mitigation there can be confidence that development of the site can be in conformity with relevant planning policy that seeks to protect and enhance ecological resources.



Section 8: Barratt Homes Biodiversity Action Plan for Proposed Bowland Meadows Residential Development

Habitats

- 8.1. New species-rich hedgerow planting within the site totalling 355m in length will be provided. The proposed location for new hedges is shown on The Landscape Strategy Plan (2001/P23) and seeks to augment retained habitats and enhance connectivity between similar habitats present on adjacent land.
- 8.2. In addition to hedgerow planting, retained hedges within the site will receive management to improve their condition consisting of gapping up of defunct sections and laying where appropriate to improve hedge thickness, fruiting, flowering and longevity.
- 8.3. Where hedgerows are associated with ditches these will also be managed to increase their wildlife value. Operations would include dredging of blocked sections and selected tree felling to encourage marginal vegetation and potentially the installation of dams with overflows to increase water depth where appropriate.
- 8.4. In addition to hedge planting, the Landscape Strategy (see plan 2001/P23) seeks to increase the ecological value of the site through:
 - The provision of additional wildlife ponds;
 - Creation of rough margins to fields;
 - The establishment of low intensity grazing regimes aimed at improving the floral diversity of existing grass sward; and
 - Bird and bat boxes will be erected on mature trees where appropriate.
- 8.5. A Sustainable Urban Drainage System (SUDS) will also be incorporated within the site's green infrastructure. As well as reducing flood and pollution risks, ecological elements will include a mixture of open water and reed margins which will have additional benefits for wildlife such as invertebrates, amphibians and birds.
- 8.6. More generally in relation to pollution risk, construction activities will adhere to the Environment Agency's Pollution Prevention Guidelines (PP5 and PPG6).

