

7.0 ECOLOGICAL RESOURCES (INCLUDING ARBORICULTURE): SUPPLEMENTARY CHAPTER

7.1 INTRODUCTION

7.1.1 This supplementary Chapter provides a response to the additional information that has been requested by Blaby District Council and comprises the following:-

- Results of wolver survey for Pond 11;
- Results of emergence bat surveys for Warren Farm and Warren Cottages;
- Detailed information on the condition of grassland TN2;
- Clarification of which ponds are retained and which are lost to development;
- Clarification of length of new hedgerow to be planted in compensation for loss of hedgerow and clarification of area the new woodland would occupy.

7.1.2 The following further information, in support of the above, is provided at Appendix 7:-

- Phase 1 Habitat Survey (Appendix 7A, Figure 7.2A);
- Updated Wolver Report, including survey results for Pond 11 (Appendix 7B);
- Updated Bat Report, including emergence survey results for Warren Farm and Warren Cottages (Appendix 7C);
- Phase 1 habitat survey target notes (including TN5 and TN6) and species lists (Appendix 7D);

7.1.3 Revised proposals for the site now include the retention of Enderby Park in agricultural use; effects of this change, and other design changes have also been reassessed here.

7.1.4 Refer to Chapter 3: Planning Policy for a more detailed summary of the current local planning policy position in relation to ecology and biodiversity.

7.2 FURTHER RESULTS AND ASSESSMENT OF EFFECTS

Water Vole (refer to Appendix 7B)

7.2.1 The submitted ES states that water vole are present in Pond 15 and along a short section of Lubbesthorpe Brook, near to this pond. There was inconclusive evidence that water vole could be present at P11.

7.2.2 An updated water vole survey was therefore conducted on Pond 11 in June 2011 to ascertain the presence or otherwise of this species at this location. During the survey, access was gained to all banks and to the central island within the pond. Habitats at the pond remained suitable for water vole, although some degradation had occurred as a result of wildfowl. No evidence indicating the presence of water vole was recorded in any location, including potential burrows, above ground nests, feeding remains or latrines.

7.2.3 Given the limited evidence recorded in 2008, with no other supporting evidence indicating water vole activity and the continued lack of evidence during surveys subsequently, it is considered that this species is not present at waterbody P11 and that wolver do not present

a constraint to development at or near this pond at this time and there will be no adverse effects of the Project on this species at P11. As a result of this survey confirming the absence of water voles, this pond is not considered to be of more than local value.

- 7.2.4 It is recommended that P11 is re-surveyed at the appropriate phase of development to confirm the absence of water vole activity at this later time.

Bats (refer to Appendix 7C)

- 7.2.5 Appendix 7C replaces Appendix 7F of the submitted ES. This includes corrections relating to typographical errors between text and drawings with regards to numbers of roosts and to the naming of farm complexes. These changes do not affect the text of the submitted ES Chapter 7: Ecological Resources. Appendix 7C now also provides the results of the outstanding surveys on Warren Farm and Warren Cottages/Keepers Lodge, which were completed in 2011. A summary of these results of these is provided below.

Warren Farm

- 7.2.6 Three nocturnal surveys were completed at Warren Farm during the active bat season in 2011 (14th July 2011; 21st July 2011 and 8th September 2011). During this time no bats were identified roosting within any of the buildings surveyed at Warren Farm. Small numbers of foraging and commuting common pipistrelle bats were recorded on all occasions in and around the farm complex, with brown long-eared, a *myotis* species and noctule bats also recorded, but in lesser numbers. Internal surveys undertaken in 2010 found no evidence of roosting bats. The main building is expected to be retained; however any loss or refurbishment of any buildings at Warren Farm would have a negligible effect on the local bat population. Habitats surrounding the farm will be also retained and all effects and mitigation remain as identified within the submitted ES Chapter 7: Ecological Resources.

Warren Cottages/Keepers Lodge

- 7.2.7 Internal surveys of buildings at Warren Cottages and Keepers Lodge recorded no evidence of bat roosts. A total of three nocturnal surveys was completed for Warren Cottages and A further three for Keepers Lodge over four survey occasions during the active bat season in 2011 (30th June 2011; 7th July 2011; 18th August 2011 and 9th September 2011). Small numbers of common pipistrelle were recorded foraging and commuting in and around the buildings, with a soprano pipistrelle, brown long eared bat and a noctule also recorded foraging and commuting. During these surveys one common pipistrelle bat was recorded entering building B6f on one occasion only (9th September). No other roosts were recorded on any other survey occasion or in any other building at Warren Cottages/Keepers Lodge.
- 7.2.8 The single common pipistrelle recorded roosting in B6f is consistent with an occasionally used non-breeding roost, used by a small number of bats. Effects of refurbishment or future loss of this building are considered to be low and would not affect the conservation status of the local bat population. A Natural England licence will be required for building loss or any refurbishment works affecting the building B6f. Nearby habitats will be retained and enhanced and effects and mitigation remain as identified within the submitted ES Chapter 7: Ecological Resources.
- 7.2.9 As the small roost at B6f was recorded during the last survey only, it is recommended that stationary (anabat) data be collected for this roost during 2012/2013 to provide additional

information for licencing purposes. In the event that no works have commenced on any of the buildings at either Warren Farm or Warren Cottages/Keepers Lodge by 2012/2013 further surveys will be required at the appropriate phase to ensure that bats have not colonised in the interim period.

- 7.2.10 All other effects and mitigation measures remain as indicated in the submitted ES Chapter 7: Ecological Resources and within the replacement bat survey contained at Appendix 7C. Table 7a below summarises all building roosts confirmed during the bat surveys in both 2010 and 2011.

Table 7a: Summary of all Building Roosts

Farm Name	Building reference	Roost evidence	Roost status
Hopyard Farm	2e	Nocturnal – entry (roost)	Small occasional Brown Long-eared roost
New House Farm	4b	Nocturnal – entry (roost)	Small occasional Brown Long-eared roost
New House Farm	4h	Visual – droppings Nocturnal – entry (roost)	Small occasional Brown Long-eared and common pipistrelle roost
Old Warren Farm	5a	Visual – droppings Anabat recordings	Small long term brown long-eared roost
Warren Cottages/Keepers Lodge	6f	Nocturnal – entry (roost)	Very occasional small non-breeding pipistrelle roost

Grassland Condition at TN2

- 7.2.11 The grassland at TN2 is one of the parish level SINC sites adjacent to the Lubbesthorpe Brook and is described under the “semi-improved neutral grasslands” within the submitted ES Chapter 7: Ecological Resources. The species list is also presented at Appendix 7D of the submitted ES. A typographical error on the submitted Figure 7.2 Phase 1 Habitat Plan indicates it as being “I” (Improved grassland) rather than “SI” (Semi-improved). This has been corrected on the revised Figure 7.2A included at Appendix 7A.
- 7.2.12 This field is designated as a Parish Level SINC, which describes it as “mown grassland”. This grassland has been re-assessed under 2008 Leicestershire LWS selection criteria. The primary criteria state that to qualify, mesotrophic (neutral) grasslands must be at least 2500m² (0.25ha) or 200 linear metres, with at least 7 species occasionally occurring from List F (or 10 species in total) of the criteria guidelines. To qualify, wet grasslands must be seasonally flooded and at least 2500m² with at least 6 species from Lists F and G of the selection criteria

lists. Mixed grasslands must contain at least 10 species from the four combined lists. Secondary criteria state that the grassland must be 2500m² and support at least 8 species from the combined four lists. Table 7b below provides the species list for TN2 cross referenced with the LWS criterion lists.

Table 7b: TN2 Species List Compared Against LWS Grassland Selection Criteria Lists

<i>Latin</i>	English	List F	List G	List H	List J
<i>Agrostis capillaris</i>	Common bent	X	X	√	X
<i>Alopecurus pratensis</i>	Meadow foxtail	X	X	X	X
<i>Arrhenatherum elatius</i>	False oat-grass	X	X	X	X
<i>Bellis perennis</i>	Common daisy	X	X	X	X
<i>Capsella bursa-pastoris</i>	Shepherd's purse	X	X	X	X
<i>Cardamine pratensis</i>	Lady's smock	X	√	X	X
<i>Cerastium fontanum</i>	Common mouse-ear	X	X	X	X
<i>Cirsium arvensis</i>	Creeping thistle	X	X	X	X
<i>Cirsium vulgare</i>	Spear thistle	X	X	X	X
<i>Cynosaurus cristatus</i>	Crested dog's tail	X	X	X	X
<i>Deschampsia caespitosa</i>	Tufted hair-grass	X	X	X	X
<i>Epilobium montanum</i>	Broad leaved willowherb	X	X	X	X
<i>Equisetum arvensis</i>	Field horsetail	X	X	X	X
<i>Filipendula ulmaria</i>	Meadowsweet	√	X	X	X
<i>Holcus lanatus</i>	Yorkshire fog	X	X	X	X
<i>Juncus effusus</i>	Soft rush	X	√	X	X
<i>Lolium perenne</i>	Perennial rye-grass	X	X	X	X
<i>Phleum bertolonii</i>	Dwarf timothy	X	X	X	X
<i>Phleum pratensis</i>	Timothy	X	X	X	X
<i>Plantago major</i>	Greater plantain	X	X	X	X
<i>Poa annua</i>	Annual meadow-grass	X	X	X	X
<i>Poa trivialis</i>	Rough meadow-grass	X	X	X	X
<i>Pulicaria dysenterica</i>	Fleabane	X	√	X	X
<i>Ranunculus bulbosus</i>	Bulbous buttercup	√	X	X	X
<i>Ranunculus repens</i>	Creeping buttercup	X	X	X	X
<i>Rumex acetosa</i>	Common sorrel	√	X	X	X

<i>Latin</i>	English	List F	List G	List H	List J
<i>Rumex crispus</i>	Curled dock	X	X	X	X
<i>Sanguisorba minor ssp minor</i>	Salad burnet	X	X	X	√
<i>Sanguisorba officinalis</i>	Great burnet	√	X	X	X
<i>Taraxacum officinalis</i>	A dandelion	X	X	X	X
<i>Trifolium repens</i>	White clover	X	X	X	X
<i>Urtica dioica</i>	Common nettle	X	X	X	X
Total number of species from list		4	3	1	1
Combined species total of lists F & G		7			
Combined species total of lists F, G, H, J		9			

7.2.13 The grassland at TN2 does not support sufficient species to meet the selection criteria for mesotrophic grasslands (List F), acid (List H) or calcareous (List J) grasslands, nor does it meet the criteria for mixed grasslands. However, as 7 species from the Lists F and G were recorded in total it is therefore considered likely that the field compartment at TN2 supports the requisite number of species for a wet grassland LWS. The field at TN2 is 1.53 ha and is of sufficient size to qualify it as a wet grassland LWS. Although it is not confirmed that it is seasonally flooded, it is probable that there is some periodic flooding of marginal areas adjacent to the brook. This grassland also meets the secondary criteria in that it is of sufficient size and supports at 9 species from all four lists.

7.2.14 This grassland, together with the adjoining SINC compartments, will be incorporated into the open space proposals and managed as wet grassland, with positive benefits as indicated within the submitted ES Chapter 7: Ecological Resources. Where possible, allowing for sufficient acoustic mitigation for the M69, woodlands have been decreased to minimise potential encroachment into this grassland. As mitigation for any loss, further wet grassland meadows within Brook Park will provide similar grasslands, and will include the requisite species from the LWS criterion lists F and G within their species mix. There are considered to be overall positive effects on grasslands, including wet grasslands at a local level, possibly district level at least as a result of the Project, given the retention and management of the better quality grasslands and the provision of large areas of new grassland, including neutral meadows, wet grassland and tussocky grassland.

Pond Retention and Loss

7.2.15 Table 7c below provides clarification on ponds to be retained within the scheme and those which will be lost. It is confirmed that only 3 ponds will now be lost, none of which are assessed as being of more than site level value. The effect of their loss is considered to be negligible, with new ponds and wetland areas as well as enhancement of retained ponds across the Project area still leading to beneficial effects at a local level as a minimum.

7.2.16 Redesign has enabled the retention of one additional pond. Pond 4, previously to be lost within the submitted ES, will now be retained within the secondary school grounds. This pond supports broadleaved pond weed, which qualifies it as a Local Wildlife Site under the Leicestershire LWS selection guidance. The pond also supports round leaved water-crow-foot, a local Red Data Book species. It is advised that the pond be appropriately managed as a wildlife pond and educational resource for the school, to maintain its biodiversity value in the future.

Table 7c: Summary of Pond Retention and Loss

Pond	Description	Value	Retained or lost
P1	Small, steep sided pond at corner of grazed field. Highly eutrophic and stagnant. Surrounded by bramble. No emergent or marginal vegetation with exception of common duckweed.	Negligible	Retained
P2	Small field pond near edge of arable field, with some overshading. Limited emergent vegetation and ephemeral in nature. Stagnant and with some nutrient enrichment. Supported very small population of smooth newts.	Site	Lost
P3	Nearby P2, smaller overshadowed stagnant field pond at base of hedgerow. Ephemeral and without vegetation.	Negligible	Lost
P4	Situated within an arable field and with no shading from surrounding vegetation and poorly connected to other habitats. Small pond with standing water and marshy grassland berm surrounding. Well established with around 50% of the open water supporting vegetation including round-leaved water crowfoot <i>Ranunculus omiophyllus</i> , jointed rush <i>Juncus articulatus</i> and common reedmace <i>Typha latifolia</i> . Ephemeral with open water areas decreasing over summer. Supported a medium population of smooth newts and some pond invertebrates and water fowl.	Local	Now retained
P5	Very small and located at woodland edge resulting in overshading, Un-vegetated, stagnant and ephemeral.	Negligible	Retained
P6	Located at hedgerow base and heavily overshadowed. Un-vegetated, stagnant and ephemeral.	Negligible	Lost
P7	Situated at woodland edge, heavily overshadowed. Un-vegetated, stagnant and ephemeral.	Negligible	Retained
P8	Located at hedgerow base and heavily overshadowed. Un-vegetated, stagnant and ephemeral. Supported very small population of smooth newts.	Site	Retained

Pond	Description	Value	Retained or lost
P9	Very small highly ephemeral pond. Un-vegetated, stagnant.	Negligible	Retained
P10	Medium sized field pond within scrub area and largely overshadowed. Poor water quality and no aquatic vegetation. Very small population of smooth newts.	Site	Retained
P11	Medium permanent field pond located on edge of arable field with vegetated island. Small amounts of emergent/marginal vegetation. Shallow banks to east, otherwise steep and densely vegetated by bramble scrub and ruderals. Small population of smooth newts.	Local	Retained
P12	Large artificial pond within former Enderby Park. Little aquatic vegetation and partially shaded from the surrounding vegetation located within arable field. Possibly supports fish. Very small population of smooth newts. Water-fowl.	Site	Retained
P13	Medium sized field pond in grazed field at edge of woodland. Steep sided and no vegetation. Not over shaded. Medium population of smooth newts.	Site	Retained
P14	Medium sized pond located at woodland edge and partially overshadowed. No vegetation. Some evidence of eutrophication. Steep sided.	Negligible	Retained
P15	Largest pond on site. Situated within a wooded area fenced-off from the surrounding field. Partially overshadowed at margins from surrounding scrub/woodland vegetation. Mix of steep and shallow margins. Large fish recorded and waterfowl. Supports a small population of water vole.	County	Retained
P16	Small field pond at edge of woodland. Overshaded. Limited vegetation. Ephemeral. Very small population of smooth newts.	Site	Retained
P17	Small field overshadowed field pond. No vegetation.	Negligible	Retained
P18	Small ephemeral field pond. Dry at time of all surveys.	Negligible	Retained
P19	Small ephemeral field pond. Dry at time of all surveys.	Negligible	Retained

Hedgerows

7.2.17 Following design changes since submission it is now anticipated that only around 8 hedgerows will be totally or partially lost representing approximately 1.75km in length. These are a result of slight changes in the design of the employment area and also in the location of the secondary school and nearby district centre. None of these are Important under the

Hedgerow Regulations 1997, although six are of nature conservation priority under the Hedgerow Grading and Evaluation System (Clement and Tofts 1991), scoring grade 2. It is estimated that approximately 75 hedgerows would be breached to allow for new roads and pathways; for the purposes of this assessment breaches are assumed to be around 15 metres wide in each case to allow for the actual road/pathway and associated construction works. This equates to around 1.1km. In total therefore it is anticipated that approximately 2.85 km of existing hedgerow could be lost. This is considered to represent a worst case scenario, as the detailed designed will seek to minimise required breaches and hedgerow losses. This represents around 9.5% of the total resource. Overall, losses would not be expected to affect the functioning or quality of the existing network, with sufficient alternative linkages retained in close proximity to those lost and mitigation as detailed within the ES for road and pathway crossings, including the use of hopovers. The extent of hedgerow loss is indicated in Table 7d below.

Table 7d: Summary of Hedgerow Loss

Hedgerow	Total Loss	Partial loss	Breached	Extent (approx)
40, 41, 62a, 62b, 142, 141, 146	√			1.5km
145		√		250m
75 hedgerows (approximate)			√	Est. 1.1km
Total				2.85km

7.2.18 New hedgerow planting within parklands and green links is anticipated at being around 8.9 km. This will lead to an overall positive gain in the hedgerow resource on site with a net gain of approximately 6km. Hedgerow loss is not considered to be significant in the context of the overall retained resource and there will be at least minor positive beneficial effects at a local level as a result of new diverse hedgerow planting.

Woodlands

7.2.19 Woodland on site currently extends to around 10.6 ha, comprising a discrete number of woodland blocks. New woodland created on site will extend to approximately 400 ha, providing a major positive effect in the long term at a local, and possibly district level. The extent of new woodland is indicated in Table 7e below.

Table 7e: New Woodland Extents by Type

Woodland type	Extent (approx)
Broad leaved woodland	29.25 ha
Wet woodland / carr woodland and scrub	4.4 ha
Woodland edge	6.45 ha
Total	40.1 ha

Enderby Park pLWS

- 7.2.20 Enderby Park pLWS will now be retained in agricultural use, although both field compartments will comprise pasture. These do not significantly affect the overall level of effects identified within the submitted ES, given the relatively small scale of changes in the context of the wider Project design. However, the following changes are noted.
- 7.2.21 Agricultural land at Enderby Park pLWS will not be restored lowland neutral grassland. Lowland wood-pasture and parkland is an LBAP and UK habitat with the main interest of this habitat (the veteran and near veteran trees) retained. The park currently comprises an improved grazed pasture in the eastern part, with the western compartment comprising arable land, which will be converted to grazing pasture. The former park's avenue of trees will be reinstated and the area will be retained without public access, as it currently is. There are therefore expected to be no adverse effects as a result of the Project; the inclusion of further grazing pasture and additional tree planting will provide some biodiversity benefits, at a localised site level.

Veteran Trees

- 7.2.22 It is noted that two veteran trees (T141 and T126) within Enderby Park are categorised as Retention Category R Remove within the submitted Veteran Tree Report (ES Volume 2, Appendix 7K), due to their particular impaired condition and that their retention within open space is recommended. These trees would still be retained within open pasture land within these revised proposals.
- 7.2.23 Re-design of the district centre and secondary school now indicates that a number of other veteran/near veteran trees previously in potential conflict with detailed design (T39/c, T40/a and T75) are now located within wide green corridors, reducing potential conflicts at the detailed design stage and it is likely that they could be retained, monitored and managed appropriately. Detailed design will strive to retain as many of the veteran and near veteran trees as possible. Where they are retained, their continued monitoring and sensitive management will be required to help maintain this resource in the long term.

7.3 STATEMENT OF EFFECTS

- 7.3.1 The changes to the Project identified at Chapter 2: Development Proposals and shown on the revised Parameters Plans do not affect the conclusions reached in the Environmental Statement.
- 7.3.34 Overall, there will be positive benefits on the biodiversity of the area as a result of the Project, through the retention and enhancement and management of the vast majority of the ecological features of interest. These habitats and features will be linked and integrated into significant areas of new habitat which will be created and actively managed, much of which will contribute to UK and local biodiversity objectives and actions.