Ditton Strategic Rail Freight Park
Supporting Environmental Information

Ecology Assessment

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1.0 INTRODUCTION

AMEC Earth and Environmental UK Ltd was commissioned by Halton Borough Council, to carry out an ecological survey and assessment of a 53ha area of land at Ditton Strategic Rail Freight Park, Cheshire. (SP 480 845). The site is currently used as a combination of arable farmland for cultivation of barley and cereals as well as providing amenity grassland for neighbouring houses. An ecological survey was requested prior to potential future development of the area. The ecological survey took the form of Phase I habitat walkover assessment and was carried out in order to identify key habitats as well as the existing and potential habitat for animal species such as bats and birds. A preliminary ecological impact assessment has also been carried out for the proposed landscaping scheme for the Park.

This report is in three main parts. The first section describes the framework for ecological legislation in the UK whilst the second part describes the results of the ecological walkover survey. The third part of the report provides a preliminary assessment of likely ecological impacts as a result of Phases 1 and 2 of the proposed scheme.

2.0 ASSESSMENT METHODOLOGY

2.1 Introduction to the Field Ecological Survey Work

Phase 1 Habitat Survey Methodology

A Phase 1 Habitat ecological survey of the site took place on 28th June 2005. The survey took the form of an extended Phase I Habitat Survey, using the methodology of the JNCC (1993). The work included identification of all key habitats on site to produce a Phase I Habitat Map, production of vegetation species lists and an assessment of habitat value for protected species such as birds and bats. All plant species names are given according to Stace (1999).

2.2 Legislative Framework for Ecology in the UK

The proposed ecological works are designed to assess the status of habitats and species covered by European and British legislation and by both UK and local Cheshire and Halton Biodiversity Action Plans. There are three types of relevant protection:

1. Statutory instruments;
2. Statutory and non statutory designated sites;
3. UK Biodiversity Action Plan and Cheshire Biodiversity Action Plan

2.2.1 Statutory Instruments

EU directives adopted by the UK as Acts of Parliament and National Policy include:

- Wildlife and Countryside Act 1981 (as amended). Protected species are those listed in Schedules 1 (Protected birds), 5 (Protected animals) and 8 (Protected plants) of this Act.

  Schedule 1 of WCA 1981 (as amended) lists all birds for which it is illegal to disturb or destroy either the birds or the nests, except by licence for English Nature. The WCA 1981 (as amended) also makes it illegal to disturb the nests of most British birds during the breeding season (described as early April to late August).

  Schedule 5 of the WCA 1981 (as amended) lists all animals which are protected. The degree of protection varies. All reptiles are protected. Common reptiles are protected from unlawful killing; protection measures do not require a licence. Rare reptiles require a protection and conservation scheme for which EN grants special licences. Great crested newt requires a protection and conservation scheme for which EN grants special licences. All bats are protected, requiring protection and conservation for which EN grants special licences. Water voles receive no protection for the animal itself, but the habitat is protected.

  Schedule 8 of the WCA 1981 (as amended) lists plants which are protected. There is also a list of plants which it is an offence to introduce into the wild.

- EU Directive on the Conservation of Natural Habitats and Wild Flora and Fauna (The Habitats Directive) (Directive 92/43/EC).
- EU Directive on the Conservation of Wild Birds (The Birds Directive) (Directive 79/409/EC).
- Protection of Badgers Act (1992). Any development which involves destroying an active sett or handling animals requires a licence from English Nature.

2.2.2 Statutorily Designated Sites

There are five types of statutorily designated sites which provide protection for both habitats and associated protected species. These are National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSIs), both designated under the Wildlife and Countryside Act (1981 as amended), plus Special Areas of Conservation (SACs), designated under the EC Habitats Directive, Special Protection Areas (SPAs), designated under the EC Wild Birds Directive and Ramsar Sites, which are listed under the Convention on Wetlands of International Importance, of which the UK is a signatory. All terrestrial Ramsar sites, National Nature Reserves, Special Protection Areas and Special Areas of Conservation are also SSSIs under National Legislation.

There are no statutorily designated sites within the proposed development area.

2.2.3 Non-Statutorily Designated Sites

There are many types of protected areas which are not afforded statutory protection but which nevertheless have been designated for their national, regional or local value. These include: Local Nature Reserves (LNRs), designated and managed by local authorities, National Trust reserves, other NGO reserves, such as those belonging to or managed by County Wildlife Trusts, RSPB, John Muir Trust, Plantlife, Woodland Trust, etc, and other Wildlife Sites, including various types of sites designated by local authorities, such as Biological Heritage Sites (BHSs) and Sites of Biological Importance (SBIs). In Cheshire, non-statutory designated sites are Sites of Biological Importance (SBI'S).

There are no designated sites within the proposed site area. The nearest designated site is a Local Nature Reserve at Pickering's Pasture located within a kilometre to the south east of the proposed site. Previously, a coastal salt marsh used for grazing by cattle and wading birds in the 1950's, Pickering's Pasture has now been transformed into a wildflower meadow. The site was used as an industrial waste tip up until the land was reclaimed by Halton Borough Council between 1982 and 1986. Pickering's Pasture is now an excellent location for wildlife, designated as a Local Nature Reserve and holds the Green Flag Award.

2.2.4 UK Biodiversity Action Plan and Cheshire Biodiversity Action Plan

The UK Biodiversity Action Plan (UKBAP), published in 1994, provides action plans for over 200 priority species and 30 key habitats. Counties have now prepared their own Local Biodiversity Action Plans. These LBAPs identify species and habitats of regional importance.

The Cheshire BAP currently identifies several habitats and species requiring protection in the county. Cheshire Habitat BAPs are in place for the following habitat which may be found on or adjacent to the site in Ditton:

- Ponds
- Roadside verges
- Unimproved grassland
- Cereal field margins
- Species rich hedgerows

The following Cheshire BAP species may also be present on and around the site:

- Great crested newt
- Skylark
- Tree sparrow
- Barn owl
- Lapwing
- Song thrush
- Bats
- Bluebell

In addition to these species, "*Farmland seed eating birds*" are also included under the Cheshire BAP. In this category are included the following bird species: tree sparrow, grey partridge, linnet, yellow hammer, reed bunting, corn bunting, house sparrow, starling, bullfinch.

In February 2003, Halton Borough Council published its own Biodiversity Action Plan which contained actions plans for two habitats and seven species. Species identified for special action plans in Halton includes the great crested newt (*Triturus cristatus*) and the skylark (*Alauda arvensis).* Halton's BAP specifically picks out two other habitats which are considered to be of importance in the Borough:

- Wildlife Corridors
- Action Areas for People and Nature

In the case of wildlife corridors, it is considered that it is particularly important to maintain urban green space within Halton to provide linkages between wildlife sites and to support wildlife populations which might otherwise become isolated. In its Action Areas for People and Nature, Halton recognizes the importance of providing green space for people in the Borough and encouraging access to wildlife areas for schools and communities.

The field ecological survey reported here was designed specifically to look for and assess the site for the above protected habitats and species which are considered to be of importance in Halton Borough.

2.3 Introduction to Assessment of Ecological Impacts

The final section of this report provides a preliminary assessment of likely ecological impacts of the construction phase of the proposed scheme, based on Landscape Masterplan drawing No D1058.01.001 Rev C. Since this ecological assessment is based on a simple Phase 1 Habitat survey, it has not been possible to assess the significance of likely impact relating to individual protected species since this would require carrying out more detailed protected species surveys. Accordingly, the ecological impact assessment and mitigation proposals in this report are descriptive and preliminary.

Each anticipated ecological impact is identified and described. The following descriptions are made:

- Type of impact: negative or positive; direct or indirect
- Temporal scale: short, medium or long term (permanent)
- Spatial scale: local or widespread

A preliminary assessment is made of the value of the ecological resource. Ecological value is based on national, regional or local rarity of species and habitats, the uniqueness and intactness of habitats and their current condition. This evaluation is preliminary since sufficient information is not yet available on the presence or absence of certain protected species to complete this element of the impact assessment.

A preliminary assessment is made of the likelihood of occurrence of each potential impact. As for the assessment of ecological value, it is not possible to complete this element of the impact assessment without further information on the presence or protected species.

In conclusion, this ecological impact assessment is considered to be preliminary and provides descriptions of likely impacts with associated proposed mitigation but does not provide significance rating for impacts nor does it assess residual impacts.

3.0 ECOLOGICAL BASELINE

3.1 General Site Description

The site at Ditton is largely arable land with smaller areas of amenity and semi improved/unimproved grassland. The fields are bordered by both species-poor intact and defunct and gappy hedgerows, most of them composed of hawthorn (*Crataegus monogyna)* and, less frequently, elder (*Sambucus nigra*). The site at Ditton is also bordered by small areas of semi natural and recently planted deciduous woodland, which may act as refuges for wildlife, particularly breeding birds.

The Phase I Habitat Map is included as Figure 1, with target notes and the plant species list provided as Appendix A and B respectively. A brief list of birds observed on site is also provided in Appendix B. Photographs can be found in Appendix C.

3.2 Results of the Phase I Habitat Survey

Seven main types of habitat were identified on the site according to the JNCC (1993) guidelines:

1) Woodland
- Semi-native deciduous woodland
- Individual trees

2) Grassland
- Amenity grassland
- Semi improved neutral grassland
- Semi improved poor grassland
- Improved grassland (permanent pasture)

3) Standing water
- Ponds

4) Hedgerows and Boundaries
- Species poor intact hedgerow and trees
- Species poor defunct hedgerow

5) Tall ruderals

6) Scrub

7) Arable land-

In addition to the above seven habitat types, bare ground, buildings and spoil areas were also identified and target noted. Each of the following habitats will be considered in more detail below.

3.2.1 Semi Natural Deciduous Woodland

Small areas of semi natural deciduous woodland are present at four different locations on site with a total area of only 0.48ha. A small strip of tall, approximately 15m high, hybrid black poplar (*Populus x canadensis*) dominated the woodland which borders the Ditton Railway line at T3. The woodland has clearly been planted, possibly to act as a buffer zone against the nearby railway line and is estimated to be 15-20 years old. Three smaller patches of woodland are present at T30. This area of woodland is also approximately 15 to 20 years old and has been clearly planted with a variety of native British trees and shrubs. Silver birch (*Betula pendula*) hornbeam (*Carpinus betulus*) pedunculate oak (*Quercus robur*), hawthorn, sycamore (*Acer pseudoplatanus*) and alder (*Alnus glutinosa*). The understorey contained bramble (*Rubus fruticosa*) goat willow (*Salix caprea*). Soft rush (*Juncus effusus*) and greater willow herb (*Epilobium hirsutum*) are also present in the understorey.

3.2.2 Individual Trees

Two trees (oak and ash at T29) are located within an area of amenity grassland. The area of amenity grassland and seeded wildflower meadow is surrounded by a row of semi mature lime trees (*Tilia cordata*).

3.2.3 Arable Land

The majority of land on site is arable land, which contributes 45.31ha (85.5%) of the total area of the site. Much of the site is currently under cultivation or has been recently cultivated. The

field at T15 is a crop of mature barley (Photograph 5, Appendix C). The fields at T13 and T23 have both been recently ploughed and are predominantly bare earth (Photograph 6, Appendix C) with scattered occasional scentless mayweed (*Tripleurospermum inodoruum*), prickly sow thistle (*Sonchus asper)*, spear and creeping Thistle (*Cirsium vulgare* and *Cirsium arvense* respectively). The area at T24 may be abandoned grassland, which is dominated by Yorkshire fog (*Holcus lanatus*) and false oat grass (*Arrhenatherum elatius*), whilst the area at T25 represents an abandoned oat field, currently with a mature oat crop and accompanied by scentless mayweed, prickly sow thistle and ox-eye daisy (*Leucanthemum vulgare*).

3.2.4 Ponds

Two extant ponds and one extinct pond are present within the site boundary. The pond found at T10 is a small fishing pond owned by Halton Angling Club. The water is moderately turbid with a slight oily film present on the surface of the water. Yellow fringed water lily (*Nymphoides peltatus*) covers approximately 50% of the pond surface (Photograph 2, Appendix C). Bulrush (*Typha latifolia)*, lesser bulrush (*Typha angustifolia*), yellow flag (*Iris pseudacorus)* and fool's watercress (*Apium nodiflorum)* were also present along the pond margins. Liaison with the pond owner indicated the presence of smooth newts in the pond, despite the presence of an active fish population.

The second pond (T18) is approximately 5m by 10m in size. It is very turbid and sediment laden agricultural pond which is surrounded by false oat grass, common nettle (*Urtica dioica*), couch grass (*Elytrigia repens*) and cleavers (*Galium aparine*) (Photograph 3, Appendix C).

The abandoned oats field at T25, contains an overgrown pond (T27). The pond is now completely dry and overgrown with terrestrial vegetation (Photograph 4, Appendix C). The pond area is dominated by false oat grass, common nettle, common orache (*Atriplex patula*) bindweed (Calystegia sepium), couch grass and common mallow (*Malva sylvestris*).

3.2.5 Amenity Grassland

Amenity grassland is present in two locations on site with a total area of 4.1ha. A moderately sized area of mown amenity grassland is present at T8 (just outside the site boundary to the east) and includes the frequent Yorkshire fog, ribwort plantain (*Plantago lanceolata*), white clover (*Trifolium repens*) and common daisy (*Bellis perennis*). A further area of amenity grassland exists surrounding a line of lime trees at T1 and a larger area surrounds T29 and T4, at which there are two small 5-a-side size football goals approximately 50m apart.

3.2.6 Semi Improved Poor Grassland and Semi Improved Neutral Grassland.

A number of different kinds of neutral grassland are present on site. For description purposes, these have been divided into two types: (a) semi-improved neutral grassland (where wildflower seeding has significantly raised the number of plant species present and current mowing

regimes are designed to enhance biodiversity) and (b) semi-improved poor grassland where former agricultural land has been abandoned and a community of tall, rank, species-poor grassland has developed.

Semi Improved Neutral Grassland

Semi improved neutral grassland is present in five different locations on site with a total area of 2.14 ha. Grasslands at T2, T3, T4 and T9 are areas of semi improved, neutral grassland which have been seeded with a wildflower seed mixture. The objective of this seeding has been to produce areas of biodiverse wildflower meadow. However, given the young age and current relatively poor species diversity at present, these areas have been classed as semi improved neutral grassland. Species present at T2 include the Yorkshire fog and false oat grass, common knapweed (*Centaurea nigra*) and chicory (*Cichorium intybus*). T4 is very similar to T2 and contains many of the same species, see target note T4 for details. A strip of semi improved neutral grassland at T3, bordering the deciduous woodland area alongside the Ditton Railway Line, is marshy and includes several species typical of marshy grassland. Species observed include soft rush and greater willowherb. Tracks and lying up areas were visible through the long grass situated under the trees, left by a medium to large sized mammal, possibly a fox. This area of semi improved neutral grassland underlying the hybrid black poplar trees could present good habitat for common breeding birds and small mammals, providing both cover and foraging grounds. The area of grassland at T9 contains a higher diversity of species including coltsfoot (*Tussilago farfara*), birdsfoot trefoil (*Lotus corniculatus*), kidney vetch (*Anthyllis vulnereria*) and salad burnett (*Sanguisorba minor*), a full species list for T9 can be found in Appendix A.

Semi Improved Poor Grassland

At T16 there is an area of semi improved poor grassland, probably developed from abandoned arable land. It is species poor containing false oat grass, Yorkshire fog, creeping thistle (*Cirsium arvense*), cocksfoot (*Dactylis glomerata*) and mugwort (*Artemisia vulgaris*).

3.2.7 Improved Grassland (Permanent Pasture)

There are five areas of improved pasture present on site, four of which are heavily grazed. The field at T37 is currently being used as a horse field and is currently the most grazed site of improved pasture. The western portion of the field has been very heavily puddled by trampling during past wet soil conditions, resulting in a densely rutted micro-topography of the soil surface which has now become re-vegetated with grass. Species present at the site were creeping thistle, broad leaved dock, white clover, bracken, tormentil and spear thistle.

At T38, adjacent to the horse field, the sward was ungrazed at the time of the survey. Species present included: perennial ryegrass, cocksfoot, Yorkshire fog, spear thistle, *Agrostis sp* and Timothy (*Phleum pratense*). The permanent pasture at T39 is more heavily grazed, with patches of bare, eroded soil showing both grazing and trampling pressure by sheep. Species present

were perennial ryegrass, cocksfoot, Yorkshire fog, spear thistle and nettle. Target areas 41 and 42 are both heavily grazed areas of improved pasture. At T41 perennial ryegrass, cocksfoot, Yorkshire fog and spear thistle are present. T42 borders a fence line beyond which there is a steep bank which leads onto the road leading to the industrial estate. At T42 species present were white clover, nettle, perennial rye grass, scentless mayweed, curled dock and creeping thistle (Photograph 7, Appendix C). There are small patches of bare earth around gate where cattle trampling has resulted in puddling and soil erosion. Beyond the fenceline, the bank side vegetation is dominated by ash, hybrid black poplar, pedunculate oak, beech, Yorkshire fog, greater willow herb and spear thistle. The scrub woodland vegetation provides excellent refuge habitat for common breeding birds.

3.2.8 Hedgerows and Boundaries

The majority of hedgerows found at the site are species poor, hawthorn dominated hedges with few gaps. The entire length of hedgerow present on site is approximately 2070m. A defunct, 3m tall, species poor hedgerow dominated by is present at T6. Field maple (*Acer campestre*) is present along the length of the hedgerow which also contains hybrid black poplar and an understorey of oilseed rape, cleavers and false oat grass. The hedgerow at T7, which divides domestic housing from semi improved grassland, is dominated by hawthorn and elder whilst bramble, common nettle *(Urtica dioica*) and false oat grass are frequent in the understorey. The short stretch of overgrown hedgerow at T12 is approximately 4m tall and dominated by hybrid black poplar, hawthorn and elder. A 2-2.5m tall, species poor hedgerow at T14 is dominated by hawthorn and occasional elder and separates two cereal fields. There is also a short stretch of gappy hawthorn hedge situated at T28, approximately 40m long and up to 2.5m tall. A defunct 2m tall band of elder hedgerow (T17) separates farm buildings from a field of mature barley.

Although species poor, the hawthorn and elder hedges which dissect the site provide good refuge habitat for birds and small mammals. They are green wildlife corridors between small areas of woodland, areas of rank grassland and bramble scrub to the south and the railway embankment to the north.

3.2.9 Scrub (bramble)

Bramble scrub can be found at a number of areas on site. It is particularly dense and overgrown at T33 where the understorey of the hedgerow is dominated by bramble and common nettle. These areas again provide valuable refuge habitat for small mammals.

3.2.10 Tall Ruderals

At T22, a mounded area of bulldozed agricultural wastes and soil (0.35ha) has now been invaded by tall ruderal vegetation, dominated by nettle, common orache, spear thistle, couch grass, common mallow and broadleaved dock (*Rumex obtusifolius*).

3.2.11 Bare Ground

There is a small area of bare ground (0.32ha) present at T5 .

3.2.12 Buildings

A series of single-storey, corrugated roofed agricultural out-buildings are present at T19. A large number of swallows were seen flying in the area. It is possible that the swallows are nesting in these buildings as there are definite entry points into the roof space of the farm buildings.

3.2.13 Spoil

T20 lies just outside the designated survey area, close to farm buildings and contains an area of fly tipped rubble.

3.3 Suitability of Habitats for Protected Species

3.3.1 Birds

The numerous stretches of hedgerow and patches of semi natural deciduous woodland may provide excellent foraging habitat for a range of bird species such as wren (*Troglodytes troglodytes*), chaffinch (*Fringilla coelebs*) and blue tit (*Parus caerulus*). The Amber listed swallow was present on site and is possibly nesting in the area. The Red Listed skylark was also heard on site. The open ploughed cereal fields on the site and neighbouring the site, as well as sparse weed areas are likely important as nesting areas for skylark. A local farmer has also indicated the presence of a barn owl (Amber Listed) in addition to a pair of buzzards in the area but neither were seen at the time of the survey.

3.3.2 Bats

Although no bat surveys were carried out in the area, the abandoned buildings and areas of semi native deciduous woodland on site could provide suitable habitat for bat roosts. Hedgerows on site would provide forage lines across fields and between woodland blocks. The farm ponds and associated hedgerows would also provide good forage areas for bats.

3.3.3 Badger

There was no evidence of badger activity on site and the small, patchy areas of woodland present on site are unlikely to provide suitable habitat for badgers. Tracks and lying up areas along the railway bank in the north east of the site were thought to be due to a fox.

3.3.4 Great Crested Newt

The pond at T18 is an agricultural pond with poor, turbid water quality, steep banks with no emergent vegetation. It is unlikely to provide suitable habitat for great crested newts. The fishing pond at T10 has relatively clear water conditions with both marginal emergent vegetation such as bulrushes and yellow flag, as well as a high surface cover of floating water lilies. The emergent vegetation could provide potential egg laying sites for great crested newt. The presence of an active fish population does not preclude the presence of newts in this pond and hence a great crested newt survey should be carried out to determine presence or absence. The great crested newt survey should take place during the breeding season (March- June), theoretically therefore no heavy works should take place before the first opportunity for a great crested newt survey to take place (March 2006). The presence of potentially suitable GCN habitat advises a cautious approach until survey work has been completed since for great crested newts both the animal and its habitat are protected by law and any damage to either could lead to prosecution.

3.4 Summary of Ecological Value at Ditton Strategic Rail Freight Park

While seven main types of habitats were found on the site at Ditton, by far the largest area of the site is arable land. There are five large arable fields which either currently are growing barley or oats, or have been recently ploughed and are now bare with scattered weeds. The arable land is by far the main land use on site, covering approximately 85% of the area of the site. A range of different kinds of grasslands make up the second largest area of land use on site (6.2% of the site). These grasslands are: semi improved neutral grassland, semi improved species poor grassland, improved grassland (permanent pasture) and amenity grassland.

There are four small areas of semi natural deciduous woodland in the north east of the site, making up only 0.9% of the total area of the site. All four areas have clearly been planted in the past as amenity woodland or as a buffer along the southern boundary of the railway line.

There are three existing small ponds on and around the site, one of which now completely dried up and overgrown with terrestrial vegetation. Of the other two ponds, one is in poor condition with turbid and muddy water. The Halton Angling Club pond is in good condition with emergent marginal vegetation and water lilies. Despite the presence of fish, there is some potential for this pond to support great crested newts. Thus, a great crested newt survey is recommended for the fishing pond at T10.

Entrance to buildings, outhouses and barns was not part of the present survey. Thus, further specific surveys for swallows and barn owl are recommended since these species may be nesting in (a) the agricultural outhouses at T19 and (b) Linner Farm respectively.

In summary, the main elements of ecological value on and around the site are as follows:

- Small areas of semi-natural, semi-mature, deciduous woodland in the north east of the site. These provide habitat for common breeding birds with excellent refuge habitat whilst providing limited breeding and foraging habitat.
- Halton Fishing Pond which, with its good water quality, emergent vegetation and suitable surrounding terrestrial vegetation, could provide breeding habitat for great crested newt. Ponds in Cheshire are one of the land uses that habitat action plans have been produced and hence ponds should be conserved and enhanced wherever possible.
- Although species poor, all hedges across the site provide green corridors for wildlife and should be retained wherever possible.
- The open arable/cereal fields on the site provide potentially good habitat for skylark.
- The area of corrugated-roofed farm buildings to the south of the site (T19), which may be providing nesting sites for the Amber listed swallow. A specialist survey should be carried out to determine if this is the case.
- There is potential for bats to be present in farm buildings and outhouses which are proposed to be demolished
- There is potential for barn owl to be present in farm buildings and outhouses which are proposed to be demolished
- Areas of tall ruderal and bramble scrub may provide excellent refuge and forage habitat for small mammals such as field vole (*Microtus agrestis*) and field mouse (*Apodemus sylvaticus*)

3.5 Conclusions on Ecological Value

In summary, none of the habitats on site are uncommon within the United Kingdom.

Ponds are present on site which are listed in the Cheshire BAP habitat and can therefore be considered of local/regional importance.

Great crested newts may be present in one of the ponds on site. They are listed in both the Cheshire BAP and Halton BAP and can therefore be considered of high local/regional importance and national importance, protected by schedule 5 of the 1981 Wildlife and Countryside Act (as amended), a great crested newt survey should be carried out to determine presence or absence.

The skylark, which is a Red listed species, is also included in the Halton BAP and can therefore be considered of high local/regional importance.

The semi natural woodlands to the east of the site have ecological value on a local scale; the woodland habitats have the potential to provide excellent refuge habitat for common birds such as the chaffinch, blue tit and wren.

Additionally the Halton BAP promotes the creation or maintenance of wildlife corridors. All hedgerows on site provide valuable linkages, across agricultural land, between areas of scrub and rank grassland in the south of the site and the railway line to the north. These may be used by birds and bats for foraging and possibly also by small and large mammals such as fox as routes across the agricultural land. If newts are present in the fishing pond, hedges provide connectivity between the breeding pond habitat and the newt's terrestrial and hibernation habitat.

The Halton BAP also promotes the provision of access to natural areas for local people. The open grassland area with woodland patches in the north east of the site close to residential areas currently provides amenity and semi-natural open space for the local community. The mown grassland in these locations permits leisure activities such as football. During the survey, several local people have voiced their concerns about the lack of access to "green areas" and consider these open grassland and woodland habitats on site of particular importance.

4.0 POTENTIAL IMPACTS

Nine potential ecological impacts have been identified during the construction phase of the scheme. These are listed below.

- Demolition of existing farm buildings and outhouses could damage habitat for protected species and could kill bats, barn owls and swallows
- Disturbance to habitat for skylark due to ground clearance and soil winning associated with the landscaping works
- Loss of existing small areas of wildflower meadow in the north east and east of the site due to land take. This will be more than balanced by the proposed large increase in area of new wildflower meadow as part of the landscape masterplan for the development
- Disturbance to breeding birds in the small areas of woodland in the north east and east of the site due to excavation and ground remediation works.
- Loss of small areas of hedgerow in the east and north west of the site due to land take
- Loss of a small farm pond as a result of land modification, woodland and meadow planting as part of the proposed landscape masterplan
- Potential damage to two small ponds as a result of heavy plant movements and construction activities associated with site clearance, laydown of materials, earthworks, etc.
- Proposed very large increase in pond and wetland habitat and associated improved biodiversity, created as new balancing ponds and swales/ditches for the development
- Proposed very large increase in area of woodland as part of the landscape masterplan for the development

Each of these potential impacts is describes briefly below.

Demolition of existing farm buildings and outhouses could damage habitat for protected species and could kill bats, barn owls and swallows

There is potential for existing farm buildings and outhouses to provide roosting habitat and possibly hibernation habitat for bats. No internal inspection of buildings has yet been carried out. If buildings are demolished, there is the potential for bats and bat roosts to be damaged and destroyed. Since all bats and their roosts are protected by law, this is a direct and negative impact. If bat roosts are present, they will be permanently lost from the site since buildings will not be replaced. There is the potential for farm buildings and outhouses to be used by barn owl and swallow as nesting habitat. If any of the buildings are being used for nesting by either barn owls or swallows then the loss of these buildings could be a significant loss of potential breeding and nesting locations for these species.

Disturbance to habitat for skylark due to ground clearance associated with the landscaping works

The open cereal fields which make up the main land use of the current site support skylark which is a Red Listed bird species in the UK. Being Red Listed means that skylark is globally threatened with a historical population decline in UK during 1800-1995, a rapid (> or =50%) decline in its UK breeding population over last 25 years and a rapid (> or =50%) contraction of its UK breeding range over last 25 years. The ground preparation works proposed for the landscaping scheme will win soil from the seasonally ploughed fields. These activities have the potential to disturb and damage skylark habitat. This impact is negative, potentially contributing to the national loss of suitable habitat for this species. The activities themselves have the potential to damage skylark directly if carried out during the bird breeding season (March to July).

Loss of existing wildflower meadow in the north east and east of the site due to land take and planting large areas of new wildflower meadow.

Small areas of wildflower meadow in the north east of the site will be lost due to earthworks associated with ground remediation activities. This loss will be more than compensated for by large new wildflower meadow plantings which are proposed around the east, south and west of the new development. This overall impact is likely to be positive and direct.

Disturbance to breeding birds in the small areas of woodland in the north east and east of the site due to excavation and ground remediation works.

Although the small areas of mixed woodland in the north east of the site, particularly that along the railway embankment, will not be removed during the landscaping scheme, there will be the potential for noisy heavy plant activities associated with excavation and ground remediation

activities to disturb any birds which are breeding in these woodlands if activities take place during March to July. These areas of woodland are small and only semi-mature; providing only poor breeding habitat for common breeding birds such as tits, blackbird, wren, etc. However, all breeding birds are protected under the Wildlife and Countryside Act (1981) (as amended) and disturbance of this type would be a negative but localized impact of short duration.

Loss of small areas of hedgerow in the east and north west of the site due to land take

Although three long lengths of mature hedgerow will be retained in the eastern part of the site, three stretches of field boundary hedgerow (amounting to approximately 690m) will be lost due to land take for the development. These hedges are primarily mono-specific hawthorn and have relatively little ecological value. Nevertheless they provide refuge habitat for a range of common farmland birds, small mammals and invertebrates. This impact will be direct, negative and localised. The effect will be permanent.

Loss of a small farm pond as a result of land modification, woodland and meadow planting as part of the proposed landscape masterplan

A small pond in the middle of the existing arable land will be infilled as a result of the land take for the development. Although this pond was overgrown and apparently dry at the time of the ecological survey in summer 2005, there is good potential for this pond to be ephemeral and wet in the winter and spring. If the pond is wet in spring it is possible that it could be used as a great crested newt (GCN) breeding pond. Thus, there is the potential loss of a GCN breeding pond. This potential impact is direct, negative and permanent.

Potential damage to two small ponds as a result of heavy plant movements and construction activities associated with site clearance, laydown of materials, earthworks, etc.

While the earthworks and other construction and landscaping activities are taking place, there is the potential for two small ponds to be damaged through activities and effects such as: trafficking with heavy plant (eg the banks damaged), runoff of surface waters laden with sediments, damage to marginal, floating and submerged macrophytes, laydown of materials or excavated soil within the ponds, deposits of waste construction materials and litter within the ponds. Any of these types of effects would damage the value of the pond habitat and its current freshwater species. The pond which Halton Angling Club uses for fishing has the potential to be a great crested newt breeding pond. If this is the case, damage to the pond would contravene the provisions of Schedule 5 of the Wildlife and Countryside Act 1981 which makes it a criminal offence to damage the GCN pond habitat or to destroy the animals themselves. This impact is potentially negative and localized. The impact could be either permanent or temporary depending of the degree of damage. The impact could be of major significance if a breeding GCN population is found to be present.

Potential very large increase in pond and wetland habitat and associated improved biodiversity, created as new balancing ponds and swales/ditches for the development

Four new balancing ponds and two new stretches of drainage swales and ditches are proposed for the new development. Three of these new balancing ponds are very large compared to the existing ponds. The very significant increase in open freshwater and wetland habitat will be a very large positive impact, potentially increasing the extent of bank side, emergent, floating and submerged freshwater macrophytes and hence the extent of habitat for freshwater invertebrates and other fauna, particularly amphibians and fish. The much larger water bodies have the potential to provide foraging habitat for all types of birds, particularly waterfowl. The water margins could also provide much increased foraging habitat for bats. Overall the impact of greatly increasing the freshwater and wetland habitats on site will be beneficial and will provide a significant enhancement of freshwater ecological biodiversity and potentially ornithological interest on site. A comprehensive suite of native emergent wetland plant species will be included in the pond-side and wetland planting to provide a structured wetland habitat for amphibians and other fauna.

It is important to note that the existing pond used by Halton Angling Club will be retained. If this pond is used as a breeding habitat for great crested newt then, since smaller ponds tend to be more successful than larger ponds for GCN breeding, the retention of this pond with careful enhancement will be a medium term beneficial impact.

5.0 MITIGATION

Of the nine identified ecological impacts, seven are considered to have a negative impact and potentially require mitigation. Proposed mitigation measures for these seven impacts are described briefly below.

Demolition of existing farm buildings and outhouses could damage habitat for protected species and could kill bats, barn owls and swallows

Prior to the demolition of existing farm buildings and outhouses, a series of protected species surveys will be carried out. These will involve external and internal inspections of all buildings for evidence of past/current use by protected species as well as assessments of the suitability of the buildings to provide roosting habitat for bats and nesting habitat for barn owl and swallow. These surveys should be carried out during the bird breeding season (between mid March and late July). If any protected species are found to be present, the following mitigation measures will apply. If there are roosting bats present, a licensed bat handler will be in attendance during demolition activities to rescue and relocate bats appropriately. Demolition works will be carried out manually until any animals have been fully retrieved and removed from the building.

If any barn owls or swallows are found to be present, no demolition works will take place until after the breeding season (after August) so that there would be no potential to disturb or damage breeding birds while at the nest or while young are fledging. All breeding birds are

protected under the Wildlife and Countryside Act 1981 (as amended) and they should not be disturbed and their nests should not be damaged while they are nesting and rearing young.

Disturbance to habitat for skylark due to ground clearance associated with the landscaping works

Since ground preparation works proposed for the landscaping scheme to win soil from the seasonally ploughed fields is likely to be carried out by heavy plant generating noise, there is potential to disturb skylark. Since breeding birds are protected under the Wildlife and Countryside Act (1981) (as amended), noisy and disturbing activities should not take place during the months of March to July. If these activities must unavoidably go ahead at this time, a ground survey for skylark nests and breeding birds should take place prior to the start of these activities. If nests are found, activities should be suspended until the young have fledged and left the nest. Alternatively, all soil winning operations on the areas of ploughed former cereal fields should be completed before the skylark breeding season (ie before mid March).

Loss of existing wildflower meadow in the north east and east of the site due to land take and planting large areas of new wildflower meadow.

The proposed extensive planting of wildflower meadow in several areas around the site (see Drawing No D1058.01.001 Rev C) more than compensates for the loss of small areas of existing wildflower meadow in the east of the site. Wildflower meadows are an extremely important resource for enhancing the populations and biodiversity of invertebrates. In turn, enhanced populations of invertebrates have the potential to support improved populations of birds and possibly also bats. The wildflower meadows will be managed sensitively to ensure that the re-seeding of plant species is optimized and the biodiversity of the meadows sustained in the long term.

Disturbance to breeding birds in the small areas of woodland in the north east and east of the site due to excavation and ground remediation works.

Noisy heavy plant activities in close proximity to the semi-mature woodland along the railway edge could disturb breeding birds if carried out during the bird breeding season, For this reason, no activities should take place during March to July since all breeding birds are protected under the Wildlife and Countryside Act (1981) (as amended). If these activities unavoidably take place during the bird breeding season, there is a duty to survey the adjacent woodland for bird nests immediately prior to any disturbing acuities taking place. If any nesting birds are found, activities should be halted until the young have fledged and left the nest. Alternatively, noisy and potentially disturbing activities should be completed before the bird breeding season starts (around mid March).

The proposed extensive planting of new woodland in many areas around the site (see Drawing No D1058.01.001 Rev C) will provide important new refuge, forage and nesting habitat for common birds. The new areas of woodland will comprise mixed plantings of native species,

including oak, ash, birch, alder, field maple and crack willow. Understory shrubs will include the following native species: hazel, hawthorn, holly and guilder rose, the last three of which provide berries which will attract foraging birds.

Loss of small areas of hedgerow in the east and north west of the site due to land take

There is no direct mitigation for the loss of stretches of hawthorn hedges amounting to 690m in length. However, the very significant areas of woodland planting will provide edge habitats which are an important alternative refuge and possibly nesting habitat for common birds such as tits, finches, blackcap, wren, robin etc.

Loss of a small farm pond as a result of land modification, woodland and meadow planting as part of the proposed landscape masterplan

The proposed extensive balancing ponds and swale/ditch wetlands will more than compensate for the loss of a small farm pond which is currently mainly dry during summer months.

Potential damage to two small ponds as a result of heavy plant movements and construction activities associated with site clearance, laydown of materials, earthworks, etc.

All earthworks and construction activities will be governed by a programme of environmentally sound working practices. The following guidance to protect surface waters will be rigorously adhered to:

- Environment Agency Pollution Prevention Guidance Notes (PPG);
  - PPG 1 General guide to the prevention of water pollution;
  - PPG 2 Above Ground Oil Storage Tanks;
  - PPG 3 Use and design of oil separators in surface water drainage systems;
  - PPG 4 Disposal of sewage where no mains available;
  - PPG 5 Works in, near or liable to affect watercourses;
  - PPG 6 Working at construction and demolition sites;
  - PPG 7 Refuelling facilities;
  - PPG 8 Safe storage and disposal of used oils;
  - PPG 21 Pollution incident response planning;
- CIRIA Report C532: Control of Water Pollution from Construction Sites;
- CIRIA Report C502: Environmental Good Practice on Site;

- CIRIA R168, Culvert Design Guide;
- BS6031: 1981 Code of Practice for Earth Works;
- Good Practice Guide for Handling Soils (MAFF 2000);
- Local and Regional Land Drainage Byelaws; and
- Forest and Water Guidelines 2003.

In addition to the guidance described above there is a range of environmental legislation relevant to the life-cycle of any large development. Key legislative drivers relating to the protection of the water environment include the following:

- Control of Pollution Act 1974;
- EC Dangerous Substances Directive (76/464/EEC);
- EC Fisheries Directive (78/659/EEC);
- Environment Protection Act 1990;
- Land Drainage Act 1991;
- Environment Act 1995;
- Groundwater Regulations 1998;
- UK Water Quality (Water Supply) Regulations 2000; and
- Water Framework Directive (2000/60/EC).

Proposed protection measures during the construction phase will include the following key measures which are designed to protect water bodies from damage:

- Buffer zones, 20m, wide will be designated around all existing ponds and will be fenced off during the construction phase to ensure that banks and bank side vegetation is not damaged by heavy plant and vehicles. These buffer zones will also protect the ponds from deposits of waste materials or laydown of materials. The retention and protection of existing back-side vegetation will help to prevent discharge of any surface runoff, particularly that which is sediment-laden.
- No wastes will be permitted within buffer zones and no construction materials will be laid down and stored within buffer zones.
- No access will be permitted to the bank of existing ponds during the construction phase.
- Abstraction water for construction use will not be permitted nor will discharges of waters from any construction activity.

- All fuel storage and re-fuelling operations will take place in a designated area with hardstanding and bunding to ensure that any leaks or spillages are contained

The pond which Halton Angling Club uses for fishing has the potential to be a great crested newt breeding pond. A full great crested newt survey will be carried out between March and June 2006. Four repeat surveys between mid March and mid May will determine whether GCN are breeding in the pond. If so, two further repeat surveys between mid May and mid June will determine the population size and this will inform a full GCN mitigation scheme if required. If GCN are discovered in the pond, discussions and liaison with English Nature will assist in designing the most appropriate mitigation since the creation of the much more extensive areas of balancing ponds and wetland habitats are likely to be extremely beneficial for newts and amphibians of all kinds. If GCN are found to be present, mitigation measures will include protection and enhancement of both freshwater and terrestrial habitats for GCN, including provision of suitable hibernacula.

6.0 SUMMARY AND CONCLUSIONS

This ecological assessment has carried out an extended Phase 1 habitat survey of the proposed site of a new development at Ditton, Cheshire. The main land use in the area is arable farming, with extensive areas of open ploughed fields during winter and spring periods. Surrounding land includes small areas of amenity grassland and wildflower meadow, with very small strips of fringing semi-mature deciduous woodland and approximately 1km of mature hawthorn hedges bordering agricultural fields.

There is potential for farm buildings and outhouses to support roosts for bats and to provide nesting habitat for barn owl and swallow. Skylark was seen in the area and is thought to be breeding on site. There are three small ponds on site; one of which is used by Halton Angling Club as a fishing pond. Despite this, it is thought that this pond may support great crested newt. The pond currently contains a range of emergent, floating and submerged freshwater macrophytes.

Evaluation of the ecological interests on site has indicated that the main habitats and species of value are the ponds which may support a breeding population of great crested newt, certain farm buildings which may support bat roosts and breeding habitat for barn owl and swallow, open bare fields which are good habitat for skylark, the hedgerows and woodland edges which provide refuge and nesting habitat for common birds and the small areas of wildflower meadow which encourage terrestrial invertebrates and hence have the potential to supply forage for a range of birds and possibly bats.

The findings of the assessment indicate that there are likely to be nine types of ecological impacts. Of these, seven are negative. Mitigation for these impacts has been proposed and include: internal surveys of farm buildings for bats, barn owl and swallow prior to the start of any demolition works, so that suitable protective measures for any identified fauna can be put in place; avoidance of heavy plant and noisy activities during the bird breeding season of March to

July; the creation of extensive new areas of woodland, wildflower meadow and open freshwater within four new balancing ponds and associated swale and ditch wetlands; and the protection of two existing ponds and their associated freshwater ecology through the implementation of a suite of environmentally sound working practices and the designation and fencing off of buffer zones around the ponds. There is the potential that great crested newts use three ponds on site for breeding. A full suite of great crested newt surveys is proposed for these ponds during March to May 2006, with a further suite of surveys in May to June if GCN are discovered. If a breeding population of GCN is found on site, discussions with English Nature will assist in designing a robust mitigation package for GCN protection, together with enhancement of both freshwater and terrestrial GCN habitats.

While the above negative ecological impacts have been identified, the landscaping scheme will deliver a number of very significant positive ecological benefits. The extensive woodland planting schemes will change the general land cover of the area. These plantings will provide, in the medium to long term, important areas of refuge forage and breeding habitat for a range of common birds. The use of berried shrubs such as holly hawthorn and guilder rose in understorey plantings will encourage foraging birds. The extensive new areas of wildflower meadows has the potential to increase significantly the biodiversity and populations of terrestrial invertebrates, with resultant positive effects on populations common breeding birds and possibly also bats which forage on insects.

The inclusion of four large balancing ponds and associated swales and ditches in the landscaping scheme will greatly increase the extent of freshwater and wetland habitat. These will provide potentially much scope for enhancing biodiversity and numbers of freshwater invertebrates, amphibians and fish.

In conclusion, a number of protected species surveys are required to inform the final mitigation designs for the scheme. The results of which will inform the detailed design of mitigation measures. Overall the proposed landscape scheme will have a significant beneficial effect on local ecology through increasing the extent and range of woodland, wildflower meadow, freshwater and wetland habitats and associated species.

7.0 REFERENCES

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APPENDIX A
PHASE 1 HABITAT TARGET NOTES

APPENDIX 1 – TARGET NOTES (TG)

TG	Comment
T1	Semi improved seeded neutral grassland, row of semi mature lime along roadside
T2	Semi improved wildflower seeded neutral grassland
T3	Fenceline along railway. Damp, with soft rush (*Juncus effusus)* and greater willow herb (*Epilobium hirsutum)* present. Tracks into long grass and lying up area, possibly a fox lying up point. Habitat for common breeding birds and small mammals.
T4	Semi improved neutral, (wildflower seeded) grassland
T5	Bare ground (photo)
T6	Hedgerow gappy species poor, 3m tall- field maple(*Acer campestre*), false oat grass (*Arrhenatherum elatius*), cleavers (*Galium aparine*) cocksfoot (*Dactylis glomerata*), scentless mayweed (*Tripleurospermum inodorum*), hogweed (*Heracleum sphondylium*), common couch grass (Elytrigia repens), rosebay willow herb (*Chamerion angustifolium*). Herb Robert (*Geranium robertianum*)
T7	Hedgerow. hawthorn ,elder, bramble, nettle (*Urtica dioica*), hedge bindweed (*Calystegia sepium*), false oat grass
T8	Amenity Grass Area, ribwort plantain (*Plantago lanceolata*), white clover (*Trifolium repens*),common daisy (*Bellis perennis*), greater plantain (*Plantago major*), common rye grass (*Lolium perenne*), Yorkshire fog, creeping buttercup (*Ranunculus repens*).
T9	Semi improved wildflower seeded neutral grass land- cocksfoot, red fescue (Festuca rubra), Yorkshire fog, false oat grass, chickory (*Cichorium intybus*), common mallow (*Malva sylvestris*), silverweed (*Potentilla anserina*), birdsfoot trefoil (*Lotus corniculatus*), coltsfoot (*Tussilago farfara*), red clover (*Trifolium pratense*), ox-eye daisy, ribwort plantain, meadow buttercup, black medic (*Medicago lupulina*), curled dock (*Rumex crispus*), kidney vetch (*Anthyllis vulnereria*), mugwort (*Artemisia vulgaris*), salad burnett (*Sanguisorba minor*), smooth tare (*Vicia tetrasperma*). Hedge planting to the east- dog rose (*Rosa canina*), alder (*Alnus glutinosa*), pedunculate oak (*Quercus robur*), silver birch (*Betula pendula*), greater knapweed (*Centaurea scabiosa*)
T10	Halton Angling Club- yellow fringed lily, bulrush(*Typha latifolia)*, jointed rush (*Juncus articulatus*), yellow flag (Iris pseudacorus), fools watercress (*Apium nodiflorum)*. Water- Moderately turbid, slight oily film on surface. >> 50% surface covered in lily. Greater willow herb, water plantain, marsh horsetail (*Equisetum palustre*), alsike clover (*Trifolium hybridum*).
T11	Semi improved poor grassland. Dominated by false oat grass, rowan sapling (Sorbus aucuparia), bindweed, male fern (*Dryopterus filix mass*), horestail sp, ragwort (*Senecio jacobaea),* mugwort.

T12	Patch of hybrid black poplar, hawthorn and elder- 10X10m and up to 4m tall
T13	Agricultural Field- scentless mayweed, pephered 10m strip all round is bare earth, recently ploughed. Rest of field in invasive ruderal, field looks to have been oats in the recent past. Italian rye grass (*Lolium multiflorum*), knotgrass, creeping thistle (*Cirsium arvense*), prickly sow thistle (*Sonchus apser*), groundsel (senecio vulgaris), annual meadow grass (*poa annua*), common orache (*Atriplex patula*) red leg *(Polygonum pesicaria)*, hedge bindweed. Appears to be three strips of different past cultivation. From W to E: Recently ploughed field, former oats, permanent pasture?
T14	Hedgerow fairly intact with 2 or 3 gaps between fields. 2.5m tall with hawthorn and elder
T15	Mature barley
T16	Semi improved poor grassland. False oat grass, Yorkshire fog, creeping thistle, cocksfoot, mugwort.
T17	elder Hedge- 2m tall, gappy.
T18	Pond- Very turbid and sediment laden agricultural pond surrounded by false oat grass, nettle, couch grass and cleavers
T19	Corrugated rooftop buildings. swallows observed, possibly nesting, definitely entry points into the roof space available.
T20	Fly tipped rubble
T21	Hedge- hawthorn with elder, approximately 2.5m tall, flocks of sparrows present.
T22	Area of invasive ruderals, nettle, orache, cleavers, spear thistle (*Cirsium vulgare*), couch grass. mallow and broadleaved dock (*Rumex obtusifolius*).
T23	Bare ploughed field- scentless mayweed, prickly sow thistle, American willow herb (*Epilobium cilicatum*), broad leaved willow herb (*Epilbobium montanum*), spear thistle, broad leaved dock, orache and knotgrass.
T24	Abandoned grassland (Possibly Set Aside)- Yorkshire fog, Creeping thistle, false oat grass, ragwort, mugwort, hogweed, spear thistle, couch grass, broad leaved dock and hedge bindweed.
T25	Abandoned oat field- Species include oats(dominant) prickly sow thistle, scentless mayweed and ox-eye daisy.
T26	Track between two arable, cereal, fields. Poverty brome (*Bromus sterilis*), hairy brome (*Bromus ramosus*) cocksfoot, cow parsley (*Anthriscus sylvestris*), cleavers, white clover, dandelion (*Taraxacum* sp), nettle, Yorkshire fog, spear thistle, broadleaved dock and mugwort.
T27	Pond in oats field- Now dry and overgrown with terrestrial vegetation. false oat grass, nettle, bindweed, bittersweet, reed (*Phalaris s*p), couch grass, common orache and common mallow.
T28	Short stretch (40m) of hawthorn hedge to 2.5m tall with gaps.
T29	2 X Mature Trees- 1 Ash, 1 Sycamore
T30	Areas of semi mature trees and shrubs- pedunculate oak, field maple, dog rose,, hawthorn, hazel, ash, hornbeam(*Carpinus betulus*), bramble, damson, silver birch, alder and elder.
T31	Hybrid black poplar, goats willow. Underlay of nettle, greater willow herb, false oat grass and dog rose.

T32	Plant nursery with 3 poly tunnels, newly ploughed in stubble. Rough grass
T33	Hedgerow of elder, 3-4m tall with bramble, nettle, false oat grass, Yorkshire fog and greater willow herb.
T34	Hedgerow dominated with hawthorn also bramble and elder.
T35	Small area of hay meadow, adjacent to Havelock Cottages.
T36	Small area of Waste/abandoned ground, dominated by bramble plus cow parsley, Yorkshire fog, false oat grass, curled dock, nettle, elder to 3.5m tall, hawthorn to 3m tall. Magpies and swallows present in the area.
T37	Horse field. Very well grazed with creeping thistle, broadleaved dock, white clover, bracken (*Pteridium aquilinum*), tormentil (*Potentila erecta*), spear thistle and creeping buttercup.
T38	Permanent pasture, less well grazed than T37. Square shaped bunker feature in the centre of the field, raised 1.5m above surrounding topography. Common ryegrass, pyrennial ryegrass, cocksfoot, Yorkshire fog, spear thistle, *Agrostis sp*, Timothy (*Phleum pratense*).
T39	Permanent pasture, more recently grazed than T38. Species as for T38 (Common ryegrass, pyrennial ryegrass, cocksfoot, Yorkshire fog, spear thistle). More thistle, nettle also present.
T40	Gappy hawthorn hedge, 2.5m tall.
T41	Common ryegrass, pyrennial ryegrass, cocksfoot, Yorkshire fog, spear thistle.
T42	Grazed pasture. White clover, nettle, perennial ryegrass, scentless mayweed, curled dock and creeping thistle.

APPENDIX B
FLORA AND BIRD SPECIES LISTS
FOR DITTON STRATEGIC RAIL FREIGHT PARK

APPENDIX B

PLANT AND BIRD SPECIES LISTS FOR DITTON STRATEGIC RAIL FREIGHT PARK

Species List- Ditton Freight Park

Trees and Shrubs

Common name	**Latin name**
Alder	*Alnus glutinosa*
Black poplar hybrid	*Populus x canadensis*
Elder	*Sambucus nigra*
Field maple	*Acer campestre*
Hawthorn	*Crataegus monogyna*
Hornbeam	*Carpinus betulus*
Oak	*Quercus sp.*
Silver birch	*Betula pendula*
Sycamore	*Acer pseudoplanatus*

Grasses

Common name	**Latin name**
Annual meadow grass	*Poa annua*
Cocksfoot	*Dactylis glomerata*
Couch grass	*Elymus sp.*
False oat grass	*Arrhenatherum elatius*
Italian ryegrass	*Lolium multiforum*
Red fescue	*Festuca rubra*
Rough bent	*Agrostis canina*
Yorkshire fog	*Holcus lanatus*

Flowering Plants

Common name	**Latin name**
Alsike clover	*Trifolium hybridum*
American willow herb	*Epilobium cilicatum*
Annual meadow grass	*Poa annua*
Barley	*Hordeum sp.*
Birds foot trefoil	*Lotus corniculatus*
Black medic	*Medicago lupulina*
Bramble	*Rubus fruticosa*
Broad leaved dock	*Rumex obtusifolius*
Broad leaved willow herb	*Epilobium montanum*

Flowering Plants (cont.)

Common name	**Latin name**
Chicory	*Cichorium intybus*
Cleavers	*Galium aparine*
Coltsfoot	*Tussilago farfara*
Common knapweed	*Centaurea scabiosa*
Common mouse ear	*Cerastium fontanum*
Common nettle	*Urtica dioica*
Common orache	*Atriplex patula*
Common ragwort	*Senecio jacobaea*
Cow parsley	*Anthriscus sylvestris*
Cowslip	*Primula veris*
Creeping thistle	*Cirsium arvense*
Curled dock	*Rumex crispus*
Dandelion	*Taxicum offcianale*
Doves foot cranesbill	*Geranium molle*
Field vetch	*Vicia sepia*
Greater knapweed	*Centaurea scabiosa*
Greater willow herb	*Epilobium hirsutum*
Groundsel	*Senecio vulgaris*
Hogweed	*Heracleum sphondylium*
Kidney Vetch	*Anthyllis vulnereria*
Knotgrass	*Polygonum aviculare*
Lettuce	*Mycelis sp.*
Mallow	*Malva sylvestris*
Meadow buttercup	*Ranunculus acris*
Mugwort	*Artemesia vulgaris*
Ox- eye daisy	*Leucanthemum vulgare*
Red campion	*Silene dioica*
Red clover	*Trifolium pretense*
Redleg	*Polygonum pesicaria*
Ribwort plantain	*Plantago lanceolata*
Rough sow thistle	*Sonchus asper*
Salad burnett	*Sanguisorba minor*
Scentless mayweed	*Tripleurosernum inodorum*
Silverweed	*Potentila anserine*
Smooth sow thistle	*Sonchus arvensis*
Smooth tare	*Viscia hirsute*
Spear thistle	*Cirsium vulgare*
White clover	*Trifolium repens*
Yarrow	*Achillea millefolium*

Other lower plants

Common name	**Latin Name**
Greater bulrush	*Typha latifolia*
Horsetail	*Equisetum sp*
Jointed rush	*Junus articulatis*
Lesser bulrush	*2.3.1 Typha angustifolia*
Male fern	*Dryopteris filix mass*

Bird Species identified on site at the time of the walkover survey

Common name	**Latin Name**
Crow	*2.3.1.1.1.1 Corvus corone*
Magpie	*Pica pica*
Pigeon	*Columba palumbus*
Pied wagtail	*Motacilla alba*
Skylark	*Alauda arvensis*
Sparrow	*Passer domesticus*
Swallow	*Hirundo rustica*

APPENDIX C
PHOTOGRAPHIC APPENDIX

Photograph 1 at T2. Semi improved neutral grassland with semi mature woodland bordering the site boundary

Photograph 2. Fishing pond at T10 - Halton Angling Club. Note emergent bulrush and 50% cover of fringed water lily.

Photograph 3 at T10 - Agricultural pond with turbid and muddy water conditions.

Photograph 4. at T27 Dried-up pond now dominated by terrestrial vegetation

Photograph 5 at T15 Agricultural field of mature barley

Photograph 6 at T?13 Recently ploughed agricultural field

Photograph 7 at T 42. Heavily grazed area of improved pasture with patches of bare ground