

SALDEN CHASE
OUTLINE PLANNING APPLICATION

Chapter 7: Ecology

7.0 ECOLOGY

7.1. Introduction

Background

7.1.1. The Salden Chase Consortium originally commissioned Aspect Ecology in April 2006 to undertake an ecological assessment of an area of land, the Environmental Impact Assessment Study Area (known as Salden Chase), situated to the south west of Milton Keynes in the Aylesbury Vale District of Buckinghamshire (see Figure 7.1 - 1110/ECO1). Previous ecological survey work was undertaken for the western part of the Environmental Impact Assessment Study Area, around Bletchley Leys Farm, during 2004.

7.1.2. More recently during 2008 Aspect Ecology carried out a suite of ecological survey work in order to update the survey work undertaken within the original 2004 survey area while, a number of additional areas of land which have been more recently included within to from the Environmental Impact Assessment Study Area.

Site Characteristics

7.1.3. The Environmental Impact Assessment Study Area is located approximately 5km south west of Milton Keynes centre, adjacent to the main A421, Standing Way and to the north of the existing settlement of Newton Longville.

7.1.4. The northern Environmental Impact Assessment Study Area boundary is formed by land associated with and including the A421 Standing Way between Bottledump roundabout and Tattenhoe roundabout to the east, and Thrift Wood and Broadway Wood to the west. Immediately east of the Environmental Impact Assessment Study Area lies the existing residential development of Far Bletchley. The southern Environmental Impact Assessment Study Area boundary is marked by a disused railway line, beyond which are agricultural fields. The western Environmental Impact

Assessment Study Area boundary is marked by field boundaries to the east of Chase Farm and Lower Salden Farm. To the west of the Environmental Impact Assessment Study Area, lies further agricultural land, dominated largely by arable fields, while to the north beyond the A421 Standing Way lies development and amenity and open space.

- 7.1.5. The Environmental Impact Assessment Study Area itself comprises largely of arable and semi-improved grassland agricultural fields, with a number of hedgerows and trees. Other habitats present include buildings, hardstanding, ponds, watercourses, ditches and scrub. In addition, the opportunity was taken to survey a small area of land situated outside of the Environmental Impact Assessment Study Area, within the disused railway corridor between the southern Environmental Impact Assessment Study Area boundary and the disused railway line itself, which is currently under the ownership of Network Rail. This area comprises largely of unimproved grassland with occasional scattered scrub to the east while to the west the disused railway corridor is colonised by scrub and young to semi-mature trees.

Proposals

- 7.1.6. The proposals for the Environmental Impact Assessment Study Area are for a mixed-use sustainable urban extension for up to 5,311 mixed tenure homes (C3) to the south west of Milton Keynes, with the following: an employment area of 7.4ha, a neighbourhood centre of 5.25ha, two local centres and a small mixed use centre on a total of 1.78ha, provision of 19ha of land to provide education facilities, ground remodelling, 94.41ha of multi functional green infrastructure, associated highway infrastructure and public transport infrastructure.

Ecological Assessment

- 7.1.7. This document assesses the ecological interest of the Environmental Impact Assessment Study Area as a whole. The importance of the habitats present is

evaluated and where appropriate, reference is also made to both the National and Local Biodiversity Action Plans.

Survey and Assessment Methodology

7.2.1 The methodology utilised for the survey work can be split into 3 areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

Desk Study

7.2.2 In order to compile background information on the Environmental Impact Assessment Study Area and its immediate surroundings the following organisations were contacted:

- Buckinghamshire and Milton Keynes Environmental Records Centre;
- North Bucks Bat Group;
- Badger Recorder for the Milton Keynes area;
- Buckinghamshire Bird Recorder; and
- The Environment Agency

7.2.3 Responses have been received from all of the sources contacted, and this information is reproduced in Appendices 7.1 to 7.5, and where appropriate on Figure 7.2 -1110/ECO2.

7.2.4 Two further sources of local information were also consulted in order to assess the value of species found at the site at the local and county context, namely 'The Buckinghamshire Bird Report 2006' and 'The Buckinghamshire Bird Report 2007' for bird species and 'A checklist of the Plants of Buckinghamshire (including Milton Keynes and Slough)' 2005 for vascular plants.

- 7.2.5 Further information on ecological designations from a wider search area was also obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database and from Natural England's 'Nature on the Map'. This information is reproduced at Appendix 7.6 and, where appropriate, on Figure 7.2 -1110/ECO2.
- 7.2.6 Records of any protected, rare or notable species within the local area were obtained from the National Biodiversity Network (NBN) database. This information is reproduced at Appendix 7.7.
- 7.2.7 Information was obtained from Aylesbury Vale District Council detailing two further non-statutory Local Wildlife Sites, Railway Bank by Salden Wood LWS and Railway Siding east of Salden Wood LWS. This information is reproduced at Appendix 7.8.

Habitat Survey Methodology

- 7.2.8 The Environmental Impact Assessment Study Area was surveyed based around extended Phase 1 survey methodology, as recommended by Natural England. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.
- 7.2.9 Using the above method, the Environmental Impact Assessment Study Area was classified into areas of similar botanical community types with a representative sample of those species present at the time of the survey being described. It is upon this that the ecological assessment is based.
- 7.2.10 All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of year since different species are apparent during different seasons. Nonetheless, it is considered that the timing of the surveys and the vegetation present allowed an accurate evaluation of the intrinsic

interest of the habitats present to be made across the Environmental Impact Assessment Study Area.

7.2.11 Initial survey work was carried out within central parts of the Environmental Impact Assessment Study Area during February 2004 and eastern and southern parts of the Environmental Impact Assessment Study Area between May and July 2006 to ascertain the general ecological value of the land and to identify the main habitats and associated plant species, with notes on animal species using the Environmental Impact Assessment Study Area.

7.2.12 Following the addition of further land parcels to the west, survey work was conducted in these areas during 2007, 2008 and 2009 while update survey work, including updates to the Phase I and Phase II protected species surveys were also undertaken over numerous visits during March – June 2007, March – October 2008 and February and June 2009.

7.2.13 In addition, all the hedgerows within the Environmental Impact Assessment Study Area were examined for their potential to meet the Hedgerows Regulations 1997. Three levels of classification were used and hedgerows placed into categories termed “Likely”, “Possible” or “Unlikely” to meet the Regulations as assessed under the Wildlife part of the Wildlife and Landscape Criteria of the Regulations. No assessment of the Landscape or Archaeology and Historic Criteria is undertaken within this ecological report. Descriptions of each hedgerow and its potential to meet the criteria are included at Appendix 7.9 while this information is summarised in Figure 7.4 -1110/ECO4, which shows the distributions of the hedgerows on site which fall under the regulations.

Faunal Surveys

7.2.14 General faunal activity, such as birds or mammals observed visually or by call during the course of the surveys was recorded. Specific attention was paid to any potential use of the Environmental Impact Assessment Study Area by protected, rare, notable or Biodiversity Action Plan (BAP) species with a particular emphasis on hedgerows and other areas of suitable habitat.

7.2.15 In addition to general observations of faunal activity, specific surveys have also been undertaken at the Environmental Impact Assessment Study Area in respect of Badger *Meles meles*, bats, Otter *Lutra lutra*, Water Vole *Arvicola terrestris*, breeding birds, amphibians and reptiles. Specific observational notes were also taken in regard to Brown Hare *Lepus europaeus*.

Badger

7.2.16 Specific surveys were undertaken to search for evidence of Badger setts during February 2004 and between May and July 2006. In addition, Badger surveys were also undertaken in October 2008 with targeted checks in June 2009.

7.2.17 The surveys comprised two main elements. Firstly searching thoroughly for evidence of Badger setts and secondly for other signs of activity. Badger setts were recorded according to criteria, which takes into account Badger behaviour and ecology. The size, status and level of activity of each sett can be assessed by counting the number of entrance holes. The type of each sett can be classified as according to the criteria at Appendix 7.10.

7.2.18 For any setts that were encountered each sett entrance was noted and plotted even if the entrance appeared disused. The following information was recorded:

- the number and location of well used or very active entrances; these are clear from any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently;
- the number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance; and
- the number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be and the remains of the spoil heap.

7.2.19 Secondly, Badger activity, such as well-worn paths and run-throughs, snagged hair, footprints, latrines and foraging signs was recorded, so as to build up a picture of the use of the Environmental Impact Assessment Study Area by Badgers.

Bats

7.2.20 The buildings present at the Environmental Impact Assessment Study Area were appraised for their potential to support roosting bats.

7.2.21 Exterior checks of all buildings were undertaken in order to search for signs of any use by bats. Survey work took account of the structure and construction type of the building and the construction materials used, and their general suitability to potentially

support roosting bats. External survey work assessed the condition of the building and roof, with particular attention being paid to cracks or gaps in the external facia or masonry, slipped tiles or gaps within the roofing material which could offer potential access for bats, and any evidence of scratch marks or staining below any holes within the exterior of the building. Binoculars were used to more closely inspect any inaccessible areas.

7.2.22 Where access was available, all buildings identified as having potential to support roosting bats were subsequently subject to internal and external surveys using ladders, torches and binoculars where necessary. Evidence of the presence of bats was searched for with particular attention paid to loft voids and gaps between rafters and beams. Specific searches were made for bat droppings that can indicate present or past use and extent of use and other signs to indicate the possible presence of bats e.g. presence of stained areas, or the number and extent of any cobwebs.

7.2.23 In addition to the building inspections, dusk/emergence and dawn/re-entry surveys were undertaken by suitably experienced ecologists, led by a licensed bat worker (Licence number 20083786) in order to record any bats leaving / re-entering Weasel's Lodge, concentrating on buildings B10 and B13.

7.2.24 Heterodyne (Batbox Duet) bat detectors were used to assist with species identification.

7.2.25 The dusk/emergence survey was undertaken on the night of 30th September 2009, commencing 0.5 hour before sunset and lasted until approximately 1.5 hours after sunset. The dawn survey was conducted the following morning on the 1st October 2009 and commenced approximately 1.5 hours before sunrise and terminated at 0.25 hours after sunrise.

7.2.26 The mature trees within the Environmental Impact Assessment Study Area were appraised for their likely potential to support bat roosts between January – September 2008. Visual searches were undertaken, with the use of binoculars where necessary, in order to identify the presence of features that could potentially support roosting bats.

7.2.27 For a tree to be classed as having some potential for roosting bats it would normally support one or more of the following characteristics:

- obvious holes, e.g. rot holes and old woodpecker holes;
- dark staining on the tree below a hole;
- tiny scratch marks around a hole from bats' claws;
- cavities, splits and/or loose bark from broken or fallen branches, lightning strikes etc.; and
- very dense covering of mature ivy over trunk.

7.2.28 Accordingly the trees within the Environmental Impact Assessment Study Area were investigated in regard to these features. In this respect, trees were individually numbered and its species, age, features of value to roosting bats, and bat potential examined. Trees were recorded as young, semi-mature or mature in nature. An assessment was arrived at dependent on each tree species, as species mature at different rates, e.g. Holly is slow growing in nature whereas many conifers grow and mature at a rapid rate. In terms of bat potential, trees were ranked as:

- Low potential: features supported are relatively sub-optimal providing only a low likelihood that bats may utilise them.

- Moderate potential: features supported show characteristics which may be of some value to bats and hence possess a moderate likelihood that bats may utilise them.
- High potential: features supported show characteristics which may be of high value to bats and hence possess a high likelihood that bats may utilise them.

7.2.29 Trees identified to offer potential to support roosting bats are shown at Figure 7.5 - 1110/ECO5 with the detail of each tree shown at Appendix 7.11.

7.2.30 In addition, a sample of trees identified to offer high potential to support roosting bats were subject to specific emergence and re-entry survey work conducted at dusk/night time or dawn between August and September 2008. This work was undertaken by surveyors using Bat Box Duet or Bat Box III bat detectors. This survey method aimed to identify any roosting bats emerging from potential roost sites.

7.2.31 General attention was also paid to any foraging bats observed during the dusk/night survey work.

Otter

7.2.32 Specific surveys for Otter were undertaken over a number of visits in October 2008. This involved careful searching along the banks of the watercourses across the Environmental Impact Assessment Study Area looking for any signs of the presence of Otter, including spraints (faeces), footprints or other signs such as holts (place of shelter).

7.2.33 The purpose of these surveys was to determine the presence/absence and, where necessary, the distribution and abundance of Otters within the Environmental Impact

Assessment Study Area. An assessment of the suitability of the watercourses to support Otter was also undertaken.

Water Vole

7.2.34 The watercourses at the Environmental Impact Assessment Study Area were surveyed in October 2008 with the aim of identifying any evidence for the presence/absence of Water Voles within the riparian corridors. The watercourses were surveyed using the standard methodology outlined in the Water Vole Conservation Handbook (1999) and were searched for the presence of signs such as feeding stations, latrines, faeces and burrows as well as looking for sightings of the animals themselves. This involved careful searching along the banks of the watercourses.

7.2.35 The surveys aimed to identify the location, distribution and abundance of any Water Vole activity within the riparian corridors.

Brown Hare

7.2.36 Specific notes were kept of all sightings of Brown Hare recorded across the site during the survey work undertaken. This included dates of sightings, distribution and behaviour.

Breeding Birds

7.2.37 The use of the majority of the Environmental Impact Assessment Study Area by breeding birds was assessed over 3 surveys, in April, May and June 2008. The land

parcel associated with the A421, which lies adjacent to the north of the Environmental Impact Assessment Study Area was not surveyed as it was not included within the Environmental Impact Assessment Study Area at the time of survey. Birds present within the Environmental Impact Assessment Study Area were recorded using a method modified from the British Trust for Ornithology's (BTO's) Breeding Bird Survey.

7.2.38 This involved walking a route over the Environmental Impact Assessment Study Area and recording all registrations of birds either seen or heard. The sightings or 'registrations' were recorded on a plan using standard BTO codes for each bird species and appropriate abbreviations.

7.2.39 This survey methodology has the advantage over other survey methodologies of mapping each registration to a specific point within the Environmental Impact Assessment Study Area and this therefore illustrates those areas containing the highest density and diversity of bird species.

7.2.40 The results of this survey work are set out at Figure 7.6 -1110/ECO6 and the detail reproduced at Appendix 7.12.

Amphibians

7.2.41 Three of the ponds within the Environmental Impact Assessment Study Area (P1-P3), along with a further offsite pond (P6), located adjacent to the Environmental Impact Assessment Study Area boundary, were surveyed for amphibians over 4 visits during June 2006 (see Figure 7-1110/ ECO3). These were undertaken during suitable weather conditions using three survey methods per visit (torch survey, bottle-trapping and netting) in accordance with the 'Great Crested Newt Mitigation Guidelines' (English Nature [now Natural England], 2001) to determine the presence or absence of Great Crested Newts.

7.2.42 Ponds P4, P5 and P7 (see Figure 7-1110/ ECO3 and Figure 7.7-1110/ECO7) were surveyed for amphibians between March and June 2007 to determine the presence or absence of Great Crested Newts.

7.2.43 Ponds P8, P9, and P10 (see Figure 7.3 -1110/ ECO3 and Figure 7.7 - 1110/ECO7) were surveyed for amphibians during May, June and July 2008 to determine the presence or absence of Great Crested Newts.

7.2.44 In addition, a further pond was present in the Environmental Impact Assessment Study Area in 2008 which has since been removed. This was surveyed for amphibians during May and June 2008 to determine the presence or absence of Great Crested Newts. This pond is shown as former pond FP1 on Figure 7.7 - 1110/ECO7.

7.2.45 The locations of the ponds surveyed and the results of the survey work undertaken are shown at Figure 7.7 -1110/ECO7 and the results detailed at Appendix 7.13.

7.2.46 Suitable survey weather conditions are deemed to be those nights when the night-time air temperature is more than 5°C, with little or no wind, and no rain. All surveys were conducted during such conditions.

7.2.47 Torch surveys involved the use of high-powered torches to count the number of each amphibian species present. As recommended by Natural England the entire margin of each pond was walked once, slowly checking for Great Crested Newts.

7.2.48 Bottle-trapping involved setting traps made from 2-litre plastic bottles around the pond margins, and leaving the traps set overnight before checking them the following morning. A density of one trap per two metres of shoreline was utilised, where possible, as recommended by Natural England.

7.2.49 In theory, netting involves sampling for a period dictated by the size of the waterbody, and Natural England recommends 15 minutes of search time for every 50 metres of shoreline. In practice, where undertaken, the search time significantly exceeded this value.

7.2.50 The land surrounding the ponds was assessed in terms of habitat quality and ability to support Great Crested Newts.

7.2.51 Where applicable, terrestrial habitats were also searched for Great Crested Newts. This involved searching under logs, rocks and rubbish, which are favoured hiding places.

Reptiles

7.2.52 Specific surveys were undertaken to establish the presence/absence of reptile species at the Environmental Impact Assessment Study Area in September and October 2008 in order to determine the presence or absence of reptiles across the Environmental Impact Assessment Study Area.

7.2.53 A total of 205 individual 50cm x 50cm sheets of thick roofing felt were placed within suitable grassland areas across the Environmental Impact Assessment Study Area during the survey work (see Figure 7.8 -1110/ECO8) to act as artificial refugia. The refugia provide shelter and heat up quicker than the surroundings in the morning and can remain warmer than the surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask under and raise their body temperature which allows them to forage earlier and later in the day. The refugia were checked at appropriate times of the day (morning and evening) over 7 visits during suitable weather conditions to confirm the presence or absence of reptiles.

7.2.54 In addition, reptiles were also actively searched for in suitable locations throughout the site. Likely reptile refuges such as logs, sheets of metal and other rubbish were searched under. In addition, conversations with local residents sought to determine the anecdotal presence of reptiles within the Environmental Impact Assessment Study Area.

7.2.55 The survey work was conducted during suitable weather conditions with temperatures during the survey visits ranging between 13 °C and 20 °C, in clam weather with wind speeds of between 1 and 3 on the Beaufort Scale and on sunny days with cloud cover ranging between 0% for two of the days to 40% with one survey visit recording 60% cloud cover.

Habitats and Ecological Features

Habitat Survey

7.3.1 The Environmental Impact Assessment Study Area was subject to ecological survey work over a considerable number of visits between February 2004 and October 2009. The vegetation present enabled the habitat types to be satisfactorily identified, and allowed an accurate assessment of the ecological interest of the habitats present to be undertaken.

7.3.2 The following main habitat/vegetation types and features were identified within the Environmental Impact Assessment Study Area:

- arable fields;
- semi-improved grassland;
- improved grassland;
- hedgerows;

- ponds;
- watercourses and ditches;
- buildings, hardstanding and associated features;
- trees;
- scattered scrub;
- scattered scrub;
- recolonising ground; and
- ruderal vegetation.

7.3.3 In addition, the following offsite habitats/features were identified adjacent to the Environmental Impact Assessment Study Area boundary:

- unimproved grassland;
- ponds;
- watercourse;
- ditches;
- scattered scrub;
- woodland
- woodland / maturing amenity planting; and
- buildings, hardstanding and associated features.

7.3.4 The locations of these habitat types are shown on Figure 7.3 -1110/ECO3.

7.3.5 The Environmental Impact Assessment Study Area is predominantly comprised of arable fields and grazed grassland bounded by hedgerows with a number of

associated standard trees. Other habitats are also present, as shown on Figure 7.3 - 1110/ECO3 including ponds, watercourses and ditches, buildings, trees, woodland and scattered scrub.

- 7.3.6 The habitats present are described below, based on the survey work undertaken with an account of the representative plant species present.

Habitats within the Environmental Impact Assessment Study Area

Arable Fields

- 7.3.7 Much of the Environmental Impact Assessment Study Area is dominated by arable fields, which, during the survey work undertaken between 2006 and 2008 were seen to be under active cultivation with the dominant crops present including of Broad Beans, Rape and cereals (see Photograph 7.1). These fields appear to be intensively farmed, with very few arable weeds / herbs present, apart from occasional Cut-leaved Crane's-bill *Geranium dissectum*, Chickweed *Stellaria media*, Nipplewort *Lapsana communis*, Red Dead-nettle *Lamium purpureum*, Shepherd's Purse *Capsella bursa-pastoris*, Prickly Sow-thistle *Sonchus asper*, Dove's-foot Crane's-bill *Geranium molle*, Common Mallow *Malva sylvestris*, Scentless Mayweed *Tripleurospermum inodorum*, Scarlet Pimpernel *Anagalis arvensis* and Knotgrass *Polygonum aviculare* which survive at the field margins. Towards the north of the Environmental Impact Assessment Study Area, the arable areas are divided into relatively smaller fields separated by hedgerows (see below), while further south, the fields are generally substantially larger and more open.

Semi-improved Grassland

- 7.3.8 A number of semi-improved rank grassland fields are also present at the Environmental Impact Assessment Study Area, as shown on Figure 7.3 -1110/ECO3 (see Photograph 7.2). These areas are largely comprised of a rank sward,

dominated by species such as Perennial Rye-grass *Lolium perenne*, Meadow Foxtail *Alopecurus pratensis*, Cock's-foot *Dactylis glomerata*, Yorkshire Fog *Holcus lanatus* and Fescues *Festuca* spp.

7.3.9 The semi-improved grassland areas in the north and east of the Environmental Impact Assessment Study Area were recorded to be largely very herb-poor in nature during the 2006 and update work in 2008, with only very occasional herbs present in the form of Common Field Speedwell *Veronica persica*, Fat Hen *Chenopodium album* and Charlock *Sinapis arvensis*. Similarly, the semi-improved grassland fields in the western part of the Environmental Impact Assessment Study Area (see Figure 7.3 - 1110/ECO3), surveyed during 2004, were recorded to support only a limited number of common species, with extensive Perennial Rye-grass present indicating that the fields have received herbicide applications in the past. Herb species within these fields are few in number and were recorded to comprise of common species such as White Clover *Trifolium repens*, Creeping Buttercup *Ranunculus repens*, Creeping Thistle *Cirsium arvense* and Dandelion *Taraxacum officinale*. A number of ruderal species were also recorded around the margins of these fields, including Spear Thistle *Cirsium vulgare* and Broad-leaved Dock *Rumex obtusifolius*.

7.3.10 By contrast, the small triangular field in the extreme north east of the Environmental Impact Assessment Study Area in which Building B3 is located contains a relatively more abundant herb content, including Creeping Cinquefoil *Potentilla reptans*, Hogweed *Heracleum sphondylium*, Meadow Vetchling *Lathyrus pratensis*, Meadow Crane's-bill *Geranium pratense*, Common Mouse-ear *Cerastium fontanum*, Common Vetch *Vicia sativa*, Bird's-foot Trefoil *Lotus corniculatus*, Common Sorrel *Rumex acetosa*, Curled Dock *Rumex crispus* and Herb Robert *Geranium robertianum* while occasional Lady's Bedstraw *Galium verum* is also present.

7.3.11 In addition, three semi-improved grassland fields in the centre of the Environmental Impact Assessment Study Area, adjacent to Weasel's Lane were recorded to support

a number of additional species in 2006 and 2008. A variety of grasses were recorded within these fields during the survey work, including Cock's-foot, Yorkshire Fog, Perennial Rye-grass and Crested Dog's-tail *Cynosaurus cristatus*. Herbs are abundant in these areas and include Black Medick *Medicago lupulina*, Creeping Buttercup *Ranunculus repens*, Musk Mallow *Malva moschata*, Daisy *Bellis perennis*, Dandelion *Taraxacum officinale* agg., Cow Parsley *Anthriscus sylvestris*, Hogweed, Common Mouse-ear, Red Clover *Trifolium repens*, Weld *Reseda luteola*, Broad-leaved Dock *Rumex obtusifolius*, Common Vetch, Common Field Speedwell, Ground-ivy *Glechoma hederacea*, Creeping Thistle *Cirsium arvense* and Stinging Nettle *Urtica dioica*.

7.3.12 A small number of the grassland fields within the centre and south-west of the Environmental Impact Assessment Study Area were recorded to show visible evidence of ancient ridge and furrow management, see Figure 7.3 -1110/ECO3 and Photograph 7.3. This feature can represent a relic of ancient land management techniques and is often indicative of mature undisturbed grassland. Nonetheless, the survey work undertaken within these areas to date has not recorded any elevated species richness associated with the ridge and furrow or identified the presence of any protected, rare or notable species within the grassland, which appears to be largely comprised of common species.

7.3.13 Small areas of mown grassland are present within the Environmental Impact Assessment Study Area, particularly in association with private access ways at the south of Weasels Lane and road verges, along with a small number of lawn areas associated with existing residential properties.

Improved Grassland

7.3.14 A small number of improved grassland fields were recorded within the western part of the Environmental Impact Assessment Study Area during the 2004 survey work. These fields are dominated almost exclusively by Perennial Rye-grass, with good

quantities of White Clover present. Few herbs were recorded, save for occasional Spear Thistle and Broad-leaved Dock around the margins, indicating that these fields have likely received regular applications of herbicide. At the time of the 2004 surveys, these fields were grazed by domestic sheep and horses.

7.3.15 The update survey work undertaken during 2008 also recorded pasture grazed by domestic livestock, including Horses, Cattle and Sheep (see Photograph 7.4). The species composition of the grassland remained largely similar to that recorded in 2004, although larger areas of ruderal species including Spear Thistle, Broad-leaved Dock and Stinging Nettle were recorded.

Hedgerows

7.3.16 A number of hedgerows are present within the Environmental Impact Assessment Study Area, largely associated with the field boundaries, as shown on Figure 7.3 - 1110/ECO3 and 7.3 -1110/ECO4. Hedgerows surveyed within site are numbered H1 – H119 on Figures 7,3 -1110/ECO4. The hedgerows are described individually at Appendix 7.9.

7.3.17 The hedgerows are largely well maintained, at a height of around 2 metres, although a small number of less regularly or intensively managed hedgerows were recorded in the western part of the Environmental Impact Assessment Study Area measuring up to 10 metres in height, while some are managed and flailed regularly so are limited in height. In contrast, a small number of hedgerows located within the larger arable fields in the south of the Environmental Impact Assessment Study Area appear unhealthy and gappy in nature with a number of areas marked only by ditches which represent the lines of former hedgerows.

7.3.18 The majority of hedgerows within the Environmental Impact Assessment Study Area are dominated by Hawthorn, with other species present including Blackthorn *Prunus spinosa*, Hazel *Corylus avellana*, Elm *Ulmus procera*, Field Maple *Acer campestre*,

Dog Rose *Rosa canina*, Elder *Sambucus nigra* and occasional Guelder Rose *Viburnum opulus*, Dogwood *Cornus sanguinea*, Wild Privet *Ligustrum vulgare*, White Bryony *Bryonia dioica* and Black Bryony *Tamus communis*, although in general individual hedgerows were largely recorded to support a limited diversity of woody species.

7.3.19 A number of standard trees are present within the hedgerows, predominantly comprised of semi-mature to mature Ash *Fraxinus excelsior*, but also including Poplar *Populus* spp., Oak *Quercus robur*, Horse Chestnut *Aesculus hippocastanum* and Willow *Salix* spp. Dead trees are also present in a number of hedgerows, the majority of which are comprised of English Elm that have a limited life span as a result of the prevalent Dutch Elm disease. Some of the dead trees and the crowns of some old Oak standards provide a valuable dead wood resource.

7.3.20 Other species recorded within the hedgerows include Ivy *Hedera helix* and Bramble *Rubus fruticosus* agg.. Ground flora associated with the hedgerows is typically species-poor and is often comprised of common species such as Cow Parsley *Anthriscus sylvestris*, Cleavers *Galium aparine*, Cock's-foot, Hogweed *Heracleum sphondylium*, Tufted Hair-grass *Deschampsia cespitosa* with occasional Cuckoo-pint *Arum maculatum* present in small numbers of hedgerows.

7.3.21 The flora adjacent to the hedgerows comprises largely of rank grassland and ruderal vegetation, dominated by species such as Cow Parsley, Ground Ivy, Great Willowherb *Epilobium hirsutum*, Spear Thistle *Cirsium vulgare* and Cock's-foot.

Ponds

7.3.22 A total of 9 ponds (labelled P1 to P10 on Figure 7.3 -1110/ECO3) were recorded within the Environmental Impact Assessment Study Area or adjacent to the Environmental Impact Assessment Study Area. Ponds P1 – P4, P7, P8 and P10 are situated within the Environmental Impact Assessment Study Area and described

below. Ponds P5, P6 and P9 are situated off-site and are described later in this section.

7.3.23 P1, initially surveyed in 2006 and re-surveyed in 2008, is situated within a shallow depression in the north east of the Environmental Impact Assessment Study Area, in the corner of an arable field, surrounded by scrub and trees in the form of Hawthorn, Privet, Willows and Field Maple that overshadow the pond. A small area of rank grassland surrounds much of the pond and, at the time of surveys, extended into the water, suggesting the water level was abnormally high due to recent heavy rain. Grass species include Tufted Hair-grass *Deschampsia cespitosa* and Cock's-foot, with few herbs present due to the overshadowing trees and shrubs. The pond itself contains abundant Blanketweed, particularly around the southern margin. A considerable amount of rubbish was also recorded within and around the pond.

7.3.24 P2 initially surveyed in 2006 and re-surveyed in 2008 is a shallow pond, which lies at the bottom of a deep depression within a field margin, adjacent to the northern Environmental Impact Assessment Study Area boundary. The pond contained water at the time of survey, but appears to be seasonal in nature and is likely to remain dry for much of the year. The steep banks support dense scrub, in the form of Hawthorn and Ash, which overshadow the pond, beneath which the vegetation is largely restricted to occasional Stinging Nettles and Bittersweet *Solanum dulcamara*.

7.3.25 P3, situated close to The Leys, at the centre of the Environmental Impact Assessment Study Area was initially surveyed in 2006 and re-surveyed in 2008, is a small pond within a field boundary, which contained relatively little water at the time of survey. Beneath a canopy of Poplar *Populus* spp., the pond is heavily overshadowed by scrub, in the form of Crack Willow *Salix fragilis* and Hawthorn, which is encroaching into the pond. Vegetation within the pond itself is limited to encroaching grasses and a small amount of Floating Sweet-grass *Glyceria fluitans* present.

7.3.26 **P4** was initially surveyed in 2006 and was re-surveyed in 2008 and is located to the east of WC3 between two hedgerows (see Figure 7.3 -1110/ECO3). It is one of the larger ponds on the Environmental Impact Assessment Study Area and measures approximately 20 metres by 8 metres in size, with a depth of 1-2 metres. The pond sits between two fields, both of which are horse grazed and this has resulted in heavy poaching of the banks, which are moderate to steep in profile. The pond is devoid of any aquatic vegetation. Occasional scrub and trees are present around the edge of the pond and include Hawthorn, Willow, Ash and Bramble, although the pond is largely unshaded by any of the vegetation. It is fed by a wet ditch, which enters the pond from the east.

7.3.27 Pond **P5** is described below in the off-site section.

7.3.28 **P6** is described below in the off site section.

7.3.29 **P7** was initially surveyed in 2004, with updates in 2007 and is located close to watercourse WC3. The pond measures approximately 3 metres by 3 metres in size and was dry at the time of the 2004 survey work, although later surveys found it is wet over the autumn / winter spring months. Nonetheless, a number of water-loving species were recorded within the pond, including Floating Sweet-grass *Glyceria fluitans*, Greater Reedmace *Typha latifolia* and Reed Canary-grass *Phalaris arundinacea*. Blackthorn, Hawthorn and Bramble scrub associated with the stream corridor, border the pond in part, although it is largely unshaded in nature.

7.3.30 **P8** is a small field pond, surveyed in 2008. It is situated within a low lying area in the corner of a horse grazed field located in the south west of the Environmental Impact Assessment Study Area, adjacent to the entrance track to Lower Salden Farm. At the time of survey the pond was seen to be around 6 metres by 6 metres in size, but largely dries out during drier weather, albeit the ground remains damp year round.

The presence of a small amount of aquatic vegetation was recorded, including Blanket Weed *Oedogonium* sp and Watercress *Rorippa nasturtium-aquaticum*.

7.3.31 Pond **P9** is described below in the off-site section.

7.3.32 **P10** is located adjacent to the western Environmental Impact Assessment Study Area boundary, to the north of Lower Salden Farm. Pond P10 is situated adjacent to a field boundary within a horse grazed field. The pond was surveyed in 2008 and measures approximately 30 metres by 20 metres in size and held a good quantity of water at the time of survey, which although fluctuates, remains through much of the year. No aquatic vegetation was visible at the time of survey although the banks of the pond are well vegetated by semi-mature Willows which largely over-shade the pond itself.

7.3.33 **Former Ponds** A former man made ornamental pond was present within the south of the Environmental Impact Assessment Study Area in 2008, which has subsequently been backfilled by the previous owners of Weasel Lodge in the summer of 2009. The former pond **FP1** was large in nature, approximately 50 metres by 30 metres in area and better described as a small semi ornamental lake, situated within a depression in a semi-improved horse grazed field close to the southern Environmental Impact Assessment Study Area boundary. FP1 was surveyed in 2008 and at the time of survey was noted to support little in the way of aquatic or emergent vegetation save for small localised patches of Hornwort and Starwort. At the time of survey a canoe was noted on the shore of FP1.

Watercourses and Ditches

7.3.34 Three watercourses are present at the Environmental Impact Assessment Study Area, labelled WC1 to WC3 on Figure 7.3 -1110/ECO3.

7.3.35 WC1, located in the north of the Environmental Impact Assessment Study Area, is a small watercourse, situated within a distinct channel approximately 0.5 metres wide set within approximately 0.5 to 1 metre high earth banks. A moderate flow of water is present within the watercourse over much of the year save for mid-summer. Vegetation present includes good stands of Great Willowherb which somewhat choke the channel in places while Creeping Buttercup *Ranunculus repens* along with a number of arable weeds such as Groundsel *Senecio vulgaris* and Common Field Speedwell are located on its banks. Part of the watercourse flows adjacent to a hedgerow, which is dominated by Hawthorn, while a line of semi-mature Willows is located alongside part of the watercourse towards the north.

7.3.36 WC2 supports a continuous, shallow flow of water, over a channel contained within relatively tall banks, associated with an adjacent hedgerow (see Photograph 7.5). The banks are somewhat overshadowed by the adjacent hedgerow, although support some vegetation, largely dominated by grasses, particularly Barren Brome *Anisantha sterilis* and Cock's-foot, with Ground-ivy *Glechoma hederacea*, Cow Parsley and Cuckoo Pint. The watercourse appears to arise within the Environmental Impact Assessment Study Area and flows off-site to the south, via a culverted section beneath the embankment of the disused railway.

7.3.37 WC3 bisects the extreme western part of the Environmental Impact Assessment Study Area from south to north. It is approximately 1-2 metres wide and supports a moderate flow year round within steep incised banks which vary in height. It is overshadowed by mature Ash, Oak and Willow, which line both sides of the watercourse through its length. The water flows over a stony substrate with silty margins and mud banks present in the slacks where water has deposited material during high flow. Typical bankside species include Ivy, Docks, Ferns, Nettles and occasional Water Figwort *Scrophularia auriculata*. The dense shading of the scrub and steep banks have resulted in the stream being devoid of any aquatic or true emergent vegetation.

7.3.38 In addition, a damp ditch marks part of the western boundary to the Environmental Impact Assessment Study Area, adjacent to Thrift Wood. A number of damp-loving species were recorded within this ditch during the 2004 survey work, including Remote Sedge *Carex remota*, Pendulous Sedge *Carex pendula*, Hard Rush *Juncus inflexus* and Soft Rush *Juncus effusus*.

7.3.39 A number of other ditches are present across the Environmental Impact Assessment Study Area. Ditches located within the agricultural land to the south of the A421 are largely dry in nature and represent drainage channels that support water only temporarily following heavy rains. The majority of these ditches are heavily shaded by hedgerows which are typically located adjacent to and as such are generally either devoid of vegetation or dominated by grasses and tall ruderal vegetation.

Buildings, Hardstanding and Associated Features

7.3.40 A number of building groups are present at the Environmental Impact Assessment Study Area, labelled **B1** to **B9** on Figure 7.3 -1110/ECO3.

7.3.41 **B1**, situated off Whadden Road, which runs through the centre of Environmental Impact Assessment Study Area, is a large, single barn of a metal frame construction, with blockwork to approximately 3 metres, above which sit corrugated asbestos walls and a single-pitched roof (see Photograph 7.6). A number of skylights are also present within the roof and a large sliding corrugated metal door is present at the south western end of the building. Associated with the south west of the building is an area of hardstanding, which forms the access to the building from Whaddon Road.

7.3.42 **B2** is a timber framed, single storey, open-sided barn with a sloping roof of corrugated metal, which does not appear to be in regular use.

- 7.3.43 **B3** comprises a series of single storey disused barns, of varying construction types, although these are mostly open-sided, with walls of corrugated metal or brick and roofs of corrugated metal.
- 7.3.44 **B4** is a large, modern barn of a metal frame construction, supporting corrugated metal walls, with a partially domed roof, also of corrugated metal (see Photograph 7.7). The building is associated with a small area of hardstanding, which forms the access from Whaddon Road.
- 7.3.45 **B5** and **B6**, located in the west of the Environmental Impact Assessment Study Area are barn and stable buildings of part metal and part wooden frame construction with pitched corrugated metal roofing.
- 7.3.46 **B7** is a large single storey building of metal construction supporting a corrugated metal roof. The roof contains 6 skylights and a number of internal lights are also present within the roof, along with external spotlights. The building is open sided to the north, such that it is airy and light in nature. The building is located within the Pearce Recycling Centre and at the time of survey was used for storing machinery, vehicles and shredded paper.
- 7.3.47 **B8** is a large single storey building of metal construction which supports a vaulted metal roof, which is in effect a curved continuation of the walls. The building is located within the Pearce Recycling Centre and houses the paper shredding machinery. In addition a lean-to is situated to the rear, south of the building. The lean-to is constructed from metal upright beams which support former railway sleepers which form the walls and support a corrugated metal roof.
- 7.3.48 **B9** is a series of single storey porta-cabin style buildings, which, at the time of survey, were in use as the Environmental Impact Assessment Study Area offices for the

Pearce Recycling Centre. The porta-cabins are set above the ground, with wooden boarding reaching from the base of the buildings to the ground. A water tank or similar was recorded on the roof of one of the porta-cabins. In addition, a small single storey wooden shed with a sloping felt covered roof was present at the southern end of the porta-cabins.

7.3.49 **B10** Weasels Lodge, is a two storey house, of brick construction with gable end walls meeting directly with the roof without the presence of soffits. The building supports a clay tiled pitched roof with clay ridge tiles and lead flashing present in the roof valleys. The main part of the building is oblong in shape and runs approximately west - east, although a number single storey additions are present to the north and south. A number of dormer windows are present along the northern and southern elevations, with wooden cladding covering the sides of the dormer windows.

7.3.50 **B11** is a small wooden garden shed which supports a slightly pitched roof of wood and felt construction. A double door is present at the western end and windows are present along the southern side.

7.3.51 **B12** is a small L-shaped stable block split into 4 stable compartments and is located to the north-east of building B10. The building is of a wooden construction and supports corrugated coralline roof. Gaps were noted beneath the coralline ridges and the tops of the walls.

7.3.52 **B13** is a tall single storey L-shaped building of brick construction which supports a pitched clay tiled roof. The building is of similar construction to Building B10, Weasels Lodge and is situated to the east of Weasels Lodge. At the time of survey the building was in use for storage of garden machinery, equipment, as a garage and for general storage. Internally the majority of the building is open to the roof and was split into 4 sections, two former stables to the north, a garage to the south and a

central section which was partially split into two layers by a wooden rafters and boards forming a ceiling/floor.

7.3.53 A small number of auxiliary sub-station type buildings are present in the form of small single storey buildings of brick or corrugated metal construction supporting flat roofs within the north of the Environmental Impact Assessment Study Area, which at the time of survey appear to be used for utilities and function as electricity sub-stations or similar. In addition, a radio mast and transmitter were present within the north-east of the Environmental Impact Assessment Study Area, in a corner of the Pearce Recycling Centre.

7.3.54 A number of the above buildings are associated with areas of hardstanding and recolonising ground, in particular buildings B7-B9 which comprise the Pearce Recycling Centre.

7.3.55 Areas of rank grassland are associated with Whaddon Road in the form of grass verges, dominated by coarse grasses such as Cock's-foot and Yorkshire Fog, along with a number of herb species such as Cow Parsley, Dandelion, Broad-leaved Dock, Stinging Nettle and Hogweed.

7.3.56 Weasel's Lane is a narrow trackway, bounded by well-structured hedgerows, along which a Bridleway runs, part of the Sustrans Route 51 runs and it additionally incorporates a section of the Milton Keynes Boundary Walk (see Photograph 7.8). Areas of rank grassland are associated with Weasel's Lane in the form of grass verges, dominated by coarse grasses such as Cock's-foot and Yorkshire Fog, along with a number of herb species such as Cow Parsley, Dandelion, Broad-leaved Dock, Stinging Nettle and Hogweed. In addition, hedgerows bound both sides of Weasel's Lane along with a number of semi-mature to mature standard trees including semi-mature to mature Ash, Elm, Field Maple, Oak, and occasional Aspen.

7.3.57 A further area of amenity planting is present in the form of the curtilages of building B10 Weasel's Lodge. The curtilages comprise areas of gravelled and tarmaced hardstanding, stables and outbuildings as described above, close mown amenity grassland, areas of amenity planting beds and a number of trees. The close mown amenity grassland is dominated by fine grass species including *Fescue* and *Poa* spp., along with herb species including Clover, Dandelion, Greater Plantain, Thistle, Selfheal, Daisy, Spear Thistle, Ribwort Plantain, Red Clover and Creeping Buttercup some of which are locally dominant forming patches within the grassland. Species present within the amenity planting beds include Pampass grass *Cortaderia selloana*, and a number of tree and shrub species including Eucalyptus *Eucalyptus* sp., Cherry, Conifers, Goat Willow, Crack Willow, Montbretia *Crocsmia* sp., Hawthorn, *Prunus* spp. Cotoneaster, Laurel, Firethorn *Pyracantha*, Elder, Hebe, *Berberis* and *Viburnum* while a small children's play house was also present within the north-western corner of the amenity planting.

Trees

7.3.58 A number of semi-mature and mature trees are present at the Environmental Impact Assessment Study Area, predominantly associated with the hedgerows along the field boundaries. The trees are of varying ages, ranging from mature to semi-mature and young specimens and are largely dominated by Ash, however a number of other species are also present, including Oak, Willow, Field Maple, Poplar, Cherry *Prunus* spp. and Horse Chestnut.

7.3.59 The majority of the trees present with the Environmental Impact Assessment Study Area are associated with watercourse WC3, forming a linear feature with the watercourse. These specimens are predominantly Oak and Ash along with abundant Willows.

7.3.60 The individual trees predominantly comprise established hedgerow specimens located within field boundary hedges marking the boundaries of different ownerships.

The most common species, Ash, considerably outnumbered the other most frequently recorded species.

7.3.61 There is a greater frequency of occurrence of individual trees of size and significance associated with watercourse WC3, the hedgerow H76, H94, H102 and H103 to the south of the A421 and further hedgerows in the vicinity of Buildings B2 and B3. The majority of the remaining trees are associated with hedgerows located in the north east and south west of the Environmental Impact Assessment Study Area, with relatively fewer trees situated in the south and centre of the Environmental Impact Assessment Study Area. This is likely due to the differences in the general field pattern between the more arable southern area of the Environmental Impact Assessment Study Area and the grazed areas in the north and west.

Scattered Scrub

7.3.62 A number of areas of scattered scrub are present within the Environmental Impact Assessment Study Area, situated along the boundary with the disused railway corridor at the south west of the Environmental Impact Assessment Study Area. Where scrub is present it is dominated by Hawthorn and Blackthorn, with occasional Elder, Dog Rose and Bramble with abundant Goat Willow where it is present around the ponds.

Recolonising Ground

7.3.63 A number of small areas of recolonising ground are present within the Environmental Impact Assessment Study Area. These appear largely to have developed over small mounds of deposited earth and are predominantly located immediately adjacent to watercourse WC3 and Pond P4. Species present in these areas include Perennial Rye Grass, Evening Primrose *Oenothera biennis*, Great Mullein *Verbascum thapsus*, Broad-leaved Dock, Cleavers and Stinging Nettle.

Ruderal Vegetation

7.3.64 Occasional, small areas of ruderal vegetation are present within the Environmental Impact Assessment Study Area and comprise of species including Burdock *Arctium* spp., Ragwort, Common Nettle and Bramble.

Habitats outside the Environmental Impact Assessment Study Area

Unimproved Grassland

7.3.65 An area of unimproved grassland is present offsite, adjacent to the southern Environmental Impact Assessment Study Area boundary, and has developed over an area of former siding within the disused railway corridor (see Figure 7.3 -1110/ECO3 and Photograph 7.9). Grass species present in this area include Yorkshire Fog, False Oat-grass, Rough Meadow-grass *Poa trivialis* and Red Fescue *Festuca rubra*. Herbs are abundant and include Wild Carrot *Daucus carota*, Burnett-saxifrage *Pimpinella saxifrage*, indicating a calcareous influence, while locally abundant Sheep's Sorrel *Rumex acetosella* also indicative of acid influences. Other species present include frequent Yarrow *Achillea millefolium*, Common Toadflax *Linaria vulgaris*, Common Mouse-ear, Dove's-foot Cranesbill, Lady's Bedstraw, Bird's-foot Trefoil, Bladder Campion *Silene vulgaris*, Field Scabious *Knautia arvensis*, Perforate St John's-wort *Hypericum perforatum*, Ribwort Plantain *Plantago lanceolata*, Wall Speedwell *Veronica arvensis*, White Campion *Silene alba*, Great Mullein *Verbascum Thapsus*, Creeping Thistle, Creeping Cinquefoil, Field Wood-rush *Luzula campestris* and Fox-and-cubs *Pilosella aurantiaca*.

7.3.66 A number of plants of the locally notable species Woolly Thistle *Cirsium eriophorum* were also recorded within the unimproved grassland during the survey work undertaken.

7.3.67 In addition, parts of the grassland are encroached by tall ruderal and scattered scrub in the form of Rosebay Willowherb *Chamerion angustifolium*, Hawthorn, Bramble and Dog Rose.

Ponds

7.3.68 Three offsite ponds, labelled **P5**, **P6** and **P9** on Figure 7.3 -1110/ECO3 were also surveyed during the work undertaken.

7.3.69 **P5** initially surveyed in 2006 with update work undertaken in 2008, is located within the offsite area surrounding Leys Ground Farm and Bletchley Leys Farm. The pond is man-made in nature, with a butyl liner present while planting comprises of non-native species. It is approximately 7 metres by 5 metres in size and appears to maintain a constant depth of water year round which is largely covered with algae.

7.3.70 **P6**, located to the north of the Environmental Impact Assessment Study Area and situated to the south of Bottle Dump Roundabout on the A421, was surveyed during 2006 and 2009. It is a moderate size and approximately 1 metre in depth, situated within an area of landscape planting associated with the adjacent Redway. The pond itself is open in nature, with occasional young Willow present and good stands of Yellow Flag-iris *Iris pseudacorus*. Other marginal plants include Water Mint *Mentha aquatica*, Brooklime *Veronica beccabunga* and Great Willowherb, while areas of rank grassland surround the pond, which supports species such as Cowslip *Primula veris*, Common Vetch, Meadow Buttercup *Ranunculus acris*, Cow Parsley, Hogweed and Creeping Cinquefoil.

7.3.71 **P9**, surveyed in 2008 is a small field pond located within very shallow banks in a low lying area in a horse grazed field situated off-site to the south-west. During the spring months the pond holds water over an area approximately 12 metres by 14 metres, although the water level seasonally drops. Little true aquatic vegetation is present

with the pond largely choked with grass. A small area of scrub in the form of Hawthorn is present at the margin of the pond.

Watercourse

7.3.72 Watercourse, **WC4** is present off-site to the south of the Environmental Impact Assessment Study Area, located adjacent to the off-site former railway corridor. The channel of the watercourse is set within deep banks around 1m in width and is surrounded by scrub dominated by Willows along with a small number of trees including Ash, young Oak and Willow.

Ditches

7.3.73 A number of small ditches, approximately 1m in depth and 1m in width were recorded within the woodland/maturing amenity planting to the north of the Environmental Impact Assessment Study Area, located adjacent to the A421, which, at the time of survey were recorded to support a flow of water due to recent rainfall.

Scattered Scrub

7.3.74 A number of areas of scattered scrub are present outside the Environmental Impact Assessment Study Area, most notably associated with the pond located to the south of the A421. Occasional scattered scrub is also present within the unimproved grassland area and is comprised of a variety of common species including Blackthorn, Hawthorn, Dog Rose, Bramble and Willows.

7.3.75 Towards the western end of the former railway line, the grassland becomes dominated by colonising scattered scrub along with young and semi-mature trees (see Photograph 7.10).

Woodland

- 7.3.76 An area of woodland is located offsite adjacent to the western Environmental Impact Assessment Study Area boundary in the form of Thrift Wood and Broadway Wood. These woods are comprised largely of ancient replanted woodland dominated by large coniferous plantations that have replaced the original broad-leaved woodland in the main. Nonetheless, they do support a number of ancient woodland indicator species including Bluebell *Hyacinthoides non-scripta* and Primrose *Primula vulgaris*.
- 7.3.77 The plantations are largely formed by Spruce *Picea* sp. and Pine *Pinus* sp. with frequent Silver Birch *Betula pendula* also present. Occasional stands of mature Oak with some Ash are scattered within the area of woodland close to the Environmental Impact Assessment Study Area. The margins of the woodland are marked by a band of dense scrub, which grades into a partial understorey further into the woodland. Species present within the scrub and understorey include Hazel *Corylus avellana*, Blackthorn, Hawthorn, Elder *Sambucus nigra*, English Elm, Field Maple, Dog Rose and Bramble.
- 7.3.78 The ground flora present includes Wood False-brome *Brachypodium sylvaticum*, Pendulous Sedge, Yorkshire Fog, Stinging Nettle, Ground-ivy, Tufted Hair-grass, Lords and Ladies, Common Chickweed, Wood Sedge *Carex sylvatica*, Greater Stitchwort *Stellaria holostea* and Wood Small Reed *Calamagrostis epigeios*.
- 7.3.79 Further areas of woodland are present within the vicinity of the Environmental Impact Assessment Study Area boundary including Salden Wood which lies to the south of the southern Environmental Impact Assessment Study Area boundary, beyond the former railway corridor (see Figure 7.2 -1110/ECO2).

Woodland / Maturing Amenity Planting

- 7.3.80 A number of areas of Woodland and Maturing Amenity planting are associated with the A421 forming a wooded belt along the road. The wooded belt comprises in places of semi-mature trees which most likely were planted as part of the landscaping for the A421, while other areas of maturing amenity planting are dominated by densely planted immature and semi-mature trees. Species present include Horse Chestnut, Alder, Oak, Scots Pine, Field Maple, Alder, Ash and Poplar.
- 7.3.81 The understorey of the wooded belt is largely shaded by the dense planting of the maturing trees and the closed canopy of the more mature trees, although some areas of scrub are present where the canopy is more open in nature. Species present include locally abundant Bramble, occasional Hawthorn, Elder, Rose spp. Holly, Dogwood and Privet with small areas of Yew *Taxus baccata* and Cherry Laurel *Prunus laurocerasus* also present.
- 7.3.82 Limited ground flora was recorded within the wooded belt and maturing amenity planting due to shading, such that a true ground flora was largely absent with only Ivy and leaf litter dominating, along with Common Sorrel and Cuckoo Pint. The undulating nature of the ground within the woodland and maturing amenity planting gave rise to a number of small (3m by 3m), shallow (up to 5cm deep) pools at the time of survey. However, given the preceding weather conditions, namely snow and rain, it is considered that in drier weather these undulations would be dry. In addition, a number of small ditches, approximately 1m in depth and 1m in width were recorded within the woodland/maturing amenity planting, which, at the time of survey were recorded to support a flow of water due to recent rainfall.

Buildings, Hardstanding and Associated Features

- 7.3.83 A number of residential buildings, agricultural buildings, areas of hardstanding and a pond (P5; see section 7.3.73.) are associated with Leys Ground Farm, Bletchley Leys

Farm and New Leys, which are located offsite within small areas of land surrounded by and situated within the Environmental Impact Assessment Study Area boundary. The residential buildings are typically of a brick construction with pitched roofs supporting tiles, while the agricultural buildings comprise a mixture of barns, and storage sheds. These are of a variety of construction types, including blockwork, metal and wood, with largely pitched, corrugated iron roof coverings.

7.3.84 In addition, further areas of hardstanding are present outside the Environmental Impact Assessment Study Area, in the form of the A421 dual carriage way and associated roundabouts and pavements, Whaddon Road, part of which runs north-west to south-east through the centre of the Environmental Impact Assessment Study Area, Weasel's Lane (informally surfaced), which runs north-east to south-west through the Environmental Impact Assessment Study Area, and a trackway running south of the A421.

7.3.85 Areas of amenity planting are also associated with areas of hardstanding, predominantly the A421 Standing Way. The majority of the amenity planting is comprised of low level scrub planting forming effective and for the most part continuous barriers where present along the A421. Species present within the amenity planting include *Cotoneaster* spp., Dogwood, Wayfaring Tree *Viburnum lantana*, Yew, Ash, Snowberry *Symphoricarpos albus* and Buddleia.

Botanical Background Records

7.3.86 No specific records of any protected, rare or notable plant species were returned from within the Environmental Impact Assessment Study Area during the background data searches (see Appendices 7.1 and 7.6). Records were returned from Buckinghamshire and Milton Keynes Environmental Records Centre for the locally uncommon species Woolly Thistle *Cirsium eriophorum* and the Local BAP species Cowslip *Primula vulgaris*, located adjacent to the southern Environmental Impact

Assessment Study Area boundary within the former railway sidings, and the locally uncommon Crosswort *Cruciata laevipes* located within Salden Wood which lies to the south of the Environmental Impact Assessment Study Area.

7.3.87 Information received from the Buckinghamshire and Milton Keynes Environmental Records Centre from within the 3km by 3km search area around the Environmental Impact Assessment Study Area also includes a number of further records of species within the search area surrounding the Environmental Impact Assessment Study Area (see Appendix 7.1). Of the recorded species within the search area Fritillary *Fritillaria melegaris* is Nationally scarce and Red Data Book (RDB) – Rare and Purple Water Flag *Iris versicolor* is RDB Rare although these are not located within or adjacent to the Environmental Impact Assessment Study Area and there are no further known records of plant species listed in either the Schedule 8 of the Wildlife and Countryside Act (1981) Schedule 8 or the RDB within the search area surrounding the Environmental Impact Assessment Study Area (see Appendix 7.1). The local BAP species Cowslip *Primula veris* was also recorded within the 3km by 3km search area surrounding the Environmental Impact Assessment Study Area.

7.3.88 Meadow Crane's Bill was recorded within the extreme north east of the Environmental Impact Assessment Study Area, in a small triangular field as described above at Section 7.3.10. The publication 'A checklist of the Plants of Buckinghamshire' (2005) describes Meadow Crane's Bill as uncommon and occurring on roadsides and old meadows. In addition, a record of Meadow Crane's Bill, a local BAP species was included within the datasearch for the Environmental Impact Assessment Study Area with the record located to the north of the Environmental Impact Assessment Study Area in the vicinity of Bottle Dump Roundabout on the A421.

7.3.89 In addition, a number of records of locally uncommon plant species were returned from the datasearch from within the 3km by 3km search area including Narrow Water Plantain *Alisma laneolatum*, Woolly Thistle *Cirsium eriophorum*, Dropwort *Fillipendula vulgaris*, Stinking Iris *Iris foetidissima*, Green-Winged Orchid *Orchis morio* (also a Local BAP species), Yellow-Juiced Poppy *Papaver dubium lecoqii*, Sessile Oak *Quercus petraea* and Marsh Ragwort *Senecio aquaticus*.

7.3.90 A number of non-specific records of BAP species were obtained from within the 10km by 10km search area surrounding and including the Environmental Impact Assessment Study Area from the NBN Gateway including Annual Knawel *Scleranthus annuus subsp. annuus*, Corn Buttercup *Ranunculus arvensis*, Cornflower *Centaurea cyanus*, Grass-wrack Pondweed *Potamogeton compressus*, Rampion Bellflower *Campanula rapunculus*, Shepherd's-needle *Scandix pecten-veneris* and Tubular Water-dropwort *Oenanthe fistulosa* (see Appendix 7.6). None of these species were recorded during the survey work undertaken at the Environmental Impact Assessment Study Area.

7.3.91 Three of these species, Corn Buttercup, Cornflower and Shepherd's-needle are declining weed species of arable farmland. Potentially suitable habitat for these species is present throughout the Environmental Impact Assessment Study Area in terms of the arable farmland. However, the arable land is intensively used with little headland or set-aside and with few weed species present which indicates regular herbicide applications may take place, as such vastly reducing the likely presence of these species. One species, Annual Knawel is rare and found in dry open sandy habitats and, as this habitat is not present within the Environmental Impact Assessment Study Area, is unlikely to be present. Small amounts of aquatic habitat is present for Grass-wrack Pondweed in terms of the ponds, watercourses and damp ditches however only limited aquatic or emergent species were recorded during the survey work and no BAP species were recorded. Small amounts of potentially suitable habitat are present for the rare Rampion Bellflower, in the form of the

hedgerow bases, associated embankments and rough grassy fields, although the intensive agricultural use of the fields reduces the likelihood of this species being present. No specific records of these, or other species returned from the data searches were located within the Environmental Impact Assessment Study Area, whilst none of these species was recorded from within the Environmental Impact Assessment Study Area during the survey work undertaken.

Faunal Use of the Environmental Impact Assessment Study Area

7.4.1 During the survey general observations were made of any faunal use of the Environmental Impact Assessment Study Area with specific attention paid to the potential presence of protected, notable or BAP species such as bats and reptiles. In addition, specific survey work was undertaken for Badger, bats, Water Vole, Otter, breeding birds, amphibians and reptiles.

Mammals

Badger

7.4.2 **S1**, a single, possible former Badger sett, is located within a narrow verge along Weasel's Lane, close to a sharp bend in the trackway as shown on Figure 7.3 - 1110/ECO3. During survey work undertaken in 2006 it comprised a single entrance, which appears to have been initially created by Badgers due to its characteristic shape. However, the entrance appeared inactive at the time of survey, but remained open, with a small number of young seedlings having germinated within the entrance, suggesting that it has not been in use for some time. No further evidence of Badger activity in the form of hairs, dung or foraging scrapes was recorded in the vicinity of S1, further indicating that it has not been in use by Badgers recently.

- 7.4.3 During survey work undertaken in 2008 sett S1 was found to have fallen into further disuse with no evidence of Badger activity recorded.
- 7.4.4 **S2**, a single active Badger sett was recorded offsite, associated with a large spoil heap and a strong pathway, situated beneath scrub at the edge of the area of unimproved grassland, adjacent to the southern site boundary, within the disused railway corridor during the survey work undertaken in 2006 (see Figure 7.3-1110/ECO3). A number of Badger hairs were recorded at the entrance to the sett during the survey work undertaken confirming the presence of Badgers in 2006.
- 7.4.5 During update survey work undertaken in 2008, the sett was also recorded to be in active use with a clear entrance and spoil heap present.
- 7.4.6 **S3** is a single inactive Badger sett, located at the south-western corner of the Environmental Impact Assessment Study Area recorded during survey work undertaken in 2008. The sett comprises a single entrance which was clear and well worn while a Badger latrine was also recorded in close proximity to the sett.
- 7.4.7 **S4** is a single entrance sett situated on the bank of a small ditch adjacent to the trackway located to the south of the A421. At the time of survey the sett was recorded to be in use by Rabbits due to the presence of Rabbit droppings and a spoil heap was present.
- 7.4.8 Evidence of further Badger activity within the Environmental Impact Assessment Study Area was recorded during the survey work undertaken in 2006 in the form of a Badger latrine, associated with a prominent pathway within the north of the Environmental Impact Assessment Study Area see Figure 7.3-1110/ECO3, which appeared to lead off-site to a underpass beneath the A421 which Badgers appear to be using. A number of Badger pathways and push-throughs were recorded throughout the Environmental Impact Assessment Study Area, however, the nature of

the habitats within the Environmental Impact Assessment Study Area is such that pathways are not always readily recorded. In addition, a Badger was seen during evening survey undertaken at the Environmental Impact Assessment Study Area in 2008. The Badger was recorded in the vicinity of Weasels Lane in the centre of the Environmental Impact Assessment Study Area. Therefore it appears that Badger activity occurs across the Environmental Impact Assessment Study Area, with likely pathways linking off-site areas of suitable habitats and conversely linking off-site setts to foraging resources within the Environmental Impact Assessment Study Area.

Background Records

- 7.4.9 No specific records of Badgers within or adjacent to the Environmental Impact Assessment Study Area were returned from the data search exercise.
- 7.4.10 A conversation with the Badger recorder for the area in 2006 noted that there are a number of long disused setts located within a number of 1km by 1km grid squares surrounding the Environmental Impact Assessment Study Area, although regular monitoring had not recorded any as active (see Appendix 7.2). More recent records obtained in 2008 returned a number of records of Badger the closest of which is located approximately 150m from the Environmental Impact Assessment Study Area (see Appendix 7.2).
- 7.4.11 In addition, a number of records of Badger were returned from the datasearch from within the wider search area surrounding the Environmental Impact Assessment Study Area, the closest of which is from within a 1km by 1km grid square located approximately 1.0km north of the Environmental Impact Assessment Study Area (see Figure 7.2-1110/ECO2). In addition, a non-specific record from within the 10km by 10km search area including and surrounding the Environmental Impact Assessment Study Area was also returned from the datasearch, dated to 1969 (see Appendix 7.7).

Bats Roosts

- 7.4.12 The majority of the buildings at the Environmental Impact Assessment Study Area are agricultural barns, of construction types rarely favoured by roosting bats and offering generally few opportunities for this group.
- 7.4.13 Although these buildings are of a construction type which offers potentially suitable features to support roosting bats, no evidence for the presence of any roosting bats was recorded from any of the buildings within the Environmental Impact Assessment Study Area during the survey work undertaken.
- 7.4.14 Weasels Lodge, B10 and an associated barn B13, located within the south of the Environmental Impact Assessment Study Area, are of construction types which offer potential to support roosting bats.
- 7.4.15 Survey work undertaken on Weasel's Lodge, B10 recorded a number of features which potentially could offer opportunities for roosting bats including externally, slipped or lifted roof tiles, and internally a loft void containing features such as wooden beams. Accordingly further internal and emergence survey work was undertaken.
- 7.4.16 The loft void is T-shaped, is of queen post construction with wooden beams and rafters and is approximately 3-4m high at the apex and 4-5m wide, with the main section running west-east and is approximately 25m long. The western loft void is approximately 10m long. The brick gable ends walls are in moderate condition, with some gaps in the brick work and mortar present. The roof comprises wooden beams, with fibre glass insulation, bitumen lining and likely wooden batons to which the external lay tiles are attached. Two chimney breasts and a water tank are present within the loft, along with a small number of electric strip lights. The loft was seen to be in good condition, and is likely to be used occasionally for storage of materials.

The loft was well insulated with fibre-glass and pebble insulation and was dry and warm at the time of survey, with no draughts present or gaps visible to the outside. Cobwebs were recorded, particularly along the ridge board. A small number of scattered droppings were recorded which appeared most likely to have been left by Long Eared *Plecotus* species, with a maximum of 5 droppings recorded. The droppings were not fresh and were seen to be relatively desiccated.

7.4.17 Building B13 is a brick built barn or stable block which supports a clay tiled roof. Internally the building is open, with no loft void and rises to approximately 5-6m in height at the apex. The roof was felt lined and externally a small number of tiles were lifted or dislodged. Potential evidence for the occasional presence of feeding bats was recorded within the building in the form of scattered remains of butterfly wings in one location in one of the northern stable compartments. However, no bat droppings were present, indicating only limited occasional use.

7.4.18 Survey work to record the presence of emerging and re-entering bats was conducted at Weasel's Lodge, concentrating on buildings B10 and B13. The survey work did not record any bats emerging from either of the buildings with only limited bat activity in the form of foraging and commuting Common Pipistrelle and a single possible Serotine briefly recorded during the dusk and dawn survey work undertaken.

7.4.19 No evidence for the presence of any roosting bats was recorded from any of the other buildings within the Environmental Impact Assessment Study Area during the survey work undertaken.

7.4.20 A number of the more mature trees, particularly associated with the Environmental Impact Assessment Study Area boundaries to the north, the watercourses and Weasel's Lane support features such as Woodpecker holes, splits, cracks, cavities, peeling bark or a thick layer of Ivy, offering some potential to support roosting bats.

Standard trees specifically noted to support such features are shown at Figure 7.5 - 1110/ECO5 and described at Appendix 7.11.

7.4.21 28 of the trees identified to offer medium - high potential to support roosting bats were subject to specific emergence survey work undertaken under suitable weather conditions during August and September 2008, the results of which are detailed at Appendix 7.11.

7.4.22 No emerging bats were recorded from any of the trees surveyed during any of the survey work undertaken.

Foraging

7.4.23 A number of habitats located throughout the Environmental Impact Assessment Study Area, particularly the trees, hedgerows and watercourses were recorded to offer suitable opportunities for foraging bats, forming linear corridors and tall vegetated areas that could act as navigational aids and foraging areas. In particular, Weasel's Lane, the trackway located along the northern site boundary and the trees along watercourse WC3 form linear features offering good potential flyways and foraging corridors for this group.

7.4.24 Fewer opportunities are afforded by the large open areas of arable land and grassland throughout the Environmental Impact Assessment Study Area, which lack navigational features, albeit these areas would still likely support a limited range of common invertebrate prey species.

7.4.25 Throughout the evening/night-time survey visits, a number of foraging bats were noted across the Environmental Impact Assessment Study Area, however activity generally appeared limited to the more common species, particularly Common Pipistrelle bats and activity was recorded to be low across large parts of the Environmental Impact Assessment Study Area in line with expectations given the lack

of navigational opportunities present. Details of foraging/commuting bats recorded during the evening/night-time survey work are set out within Appendix 7.11.

Background Records

- 7.4.26 No records of bats from within the Environmental Impact Assessment Study Area were returned from the data search exercise. A number of records were returned from within the 3km by 3km search area from the local Bat group including those of Pipistelle *Pipistrellus pipistrellus*, Soprano Pipistelle *Pipistrellus pygmaeus*, Brown Long-eared *Plecotus auritus*, Noctule *Nyctalus noctula* and Natterer's *Myotis nattereri* (see Appendix 7.3). The closest of these are located approximately 50 –150m from the Environmental Impact Assessment Study Area and comprise flying or feeding bats.
- 7.4.27 Further records of bats, comprising Pipistelle and Brown Long-eared bats were returned from the 3km by 3km search area around the Environmental Impact Assessment Study Area (see Appendix 7.1).
- 7.4.28 In addition, non-specific records were obtained for Pipistelle and Daubenton's bats from the NBN Gateway.

Otter

- 7.4.29 There are limited opportunities for Otter at the Environmental Impact Assessment Study Area, as the majority of the watercourses present are too small and seasonal to be of particular value to this species, other than as occasional movement corridors. Nevertheless, WC3 which runs along the north-west of the Environmental Impact Assessment Study Area offers some potential to act as a commuting corridor for Otter. However, no evidence for the presence of this species in the form of spraints, footprints or other signs was recorded at the site during the survey work undertaken in 2008.

Background Records

7.4.30 No records of Otter at the Environmental Impact Assessment Study Area or within a 3 by 3km search area around the Environmental Impact Assessment Study Area were returned from the data searches, or from within the 10km by 10km search area surrounding the Environmental Impact Assessment Study Area (see Appendices 7.1 and 7.7).

Water Vole

7.4.31 Three watercourses are present within the Environmental Impact Assessment Study Area, of which only one, WC3, offers any potential, albeit limited, to support Water Vole. The watercourses are generally small in nature and lack areas of open water with good stands of emergent vegetation required by Water Vole, such that opportunities are limited. In addition, considerable poaching evident by grazing livestock was recorded along the margins of watercourse WC3, whilst the adjacent trees cast considerable shade over the watercourse limiting the presence of suitable vegetation.

7.4.32 No evidence for the presence of Water Vole in terms of droppings, latrines, feeding remains, grazed lawns or burrows was recorded during the survey work undertaken in 2008. In any event, Water Voles are known to be largely absent from the Milton Keynes area due to the prevalence of American Mink *Mustela vison*.

Background Records

7.4.33 A single, non-specific record of Water Vole within a 1km by 1km grid square located approximately 4km from the Environmental Impact Assessment Study Area was recorded within data obtained from the NBN Gateway. This record is relatively old, dated to 1978 (see Appendix 7.7).

Brown Hare

7.4.34 Although no specific survey for Brown Hare was carried out, specific records of Brown Hare sightings were kept throughout the course of the general survey work. Despite the number of Environmental Impact Assessment Study Area visits undertaken, only a relatively small number of Hares were recorded in the grassland throughout the Environmental Impact Assessment Study Area. The locations of sightings are shown on Figure 7.3 -1110/ECO3.

7.4.35 In particular, Brown Hare was recorded running alongside a hedgerow within the grassland in the central part of the Environmental Impact Assessment Study Area during the 2004 survey work. In addition, Brown Hare was recorded on a number of visits during evening survey work undertaken at the Environmental Impact Assessment Study Area in 2008. The Brown Hares were recorded moving or feeding adjacent to hedgerows H55 and H53 within grassland fields within the centre and north of the Environmental Impact Assessment Study Area.

Background Records

7.4.36 Two non-specific records of Brown Hare were obtained from the NBN Gateway. One record was non-specific to the 10km by 10km search area including and surrounding the Environmental Impact Assessment Study Area, whilst the other record was from within a 1km by 1km grid square located approximately 2.5km from the Environmental Impact Assessment Study Area. However both records are relatively historical, dated 1965 and 1964 respectively (see Appendix 7.7).

Rabbit

7.4.37 Rabbits were seen to be common and were noted to be using much of the Environmental Impact Assessment Study Area, particularly within the livestock grazed fields and along field margins.

Fox

7.4.38 Fox was sighted in a number of locations and it appears that this species makes good use of the Environmental Impact Assessment Study Area. Up to three Foxes were recorded during the evening survey work at the Environmental Impact Assessment Study Area undertaken in 2008. In addition, 2 dead Foxes were recorded within Woodland / Maturing Amenity Planting south of the A421 during survey work undertaken in 2009.

Deer

7.4.39 Roe Deer *Capreolus capreolus* was recorded at the Environmental Impact Assessment Study Area during the survey work, while Muntjac *Muntiacus reevesi* prints were also noted.

Small Mammals

7.4.40 Short-tailed Field Vole *Microtus agrestis* and Common Shrew *Sorex araneus* were recorded at the Environmental Impact Assessment Study Area and it is likely that a number of other common small mammal species are present within the Environmental Impact Assessment Study Area.

Birds

7.4.41 The Environmental Impact Assessment Study Area offers opportunities for breeding birds, in terms of the hedgerows, trees and scattered scrub present, with fewer opportunities afforded by the open grassland while the large, open arable fields that dominate much of the eastern part of the Environmental Impact Assessment Study Area provide relatively few opportunities for the majority of birds.

7.4.42 Birds recorded at the Environmental Impact Assessment Study Area during the survey work undertaken in 2006 include Carrion Crow *Corvus corone*, Jackdaw *Corvus monedula*, Magpie *Pica pica*, Blackbird *Turdus merula*, Swallow *Hirundo rustica*, Green Woodpecker *Picus viridis*, Great-spotted Woodpecker *Dendrocopos major*, Yellowhammer *Emberiza citrinella*, Bullfinch, Chaffinch *Fringilla coelebs*, Great Tit *Parus major*, Blue-tit *Parus caeruleus*, Pheasant *Phasianus colchicus*, Woodpigeon *Columba palumbus*, Skylark *Alauda arvensis*, Whitethroat *Sylvia communis*, House Sparrow *Passer domesticus*, Robin *Erithacus rubecula*, Linnet *Carduelis cannabina* and Wren *Troglodytes troglodytes*.

7.4.43 Specific breeding bird survey work was undertaken at the Environmental Impact Assessment Study Area in 2008 with a total of 54 species recorded, consisting of approximately 33 species considered to be breeding or probably breeding within the Environmental Impact Assessment Study Area, and approximately eleven possibly breeding (i.e. habitat suitable to support the species is present). The remaining ten species were recorded flying over or foraging at the Environmental Impact Assessment Study Area, but presumed to be breeding elsewhere. A summary of observations for each species is included in the systematic species list at Appendix 7.12. The estimated distribution of the less common breeding species is shown at Figure 7.4 -1110/ECO4.

7.4.44 Overall, the Environmental Impact Assessment Study Area supports a relatively modest range of farmland birds, although there are reasonable populations of both Skylark *Alauda arvensis* and Yellowhammer across much of the area. Both of these species are RSPB Red-listed having undergone major declines in their UK populations. Much smaller numbers of Stock Dove *Columba oenas*, Song Thrush *Turdus philomelos*, Willow Warbler *Phylloscopus trochilus*, Linnet, Bullfinch *Pyrrhula pyrrhula* and Reed Bunting *Emberiza schoeniclus* are also present in the hedgerows/field margins, whilst Swallow *Hirundo rustica*, Starling *Sturnus vulgaris*

and House Sparrow are associated with farm buildings. All of these species are RSPB-listed declining farmland birds, although all remain common in both a national and local context. The record of a Curlew *Numenius arquata* flying over on 13th April 2008 would be very notable if breeding in Buckinghamshire. However, there were no subsequent records, and breeding within the Environmental Impact Assessment Study Area is considered unlikely and accordingly the record can be attributed to a migrant bird.

Background Records

7.4.45 A number of records of bird species from the 3km x 3km search area around the Environmental Impact Assessment Study Area were returned from the data searches; however no records of any Schedule 1 birds were included within the information returned (see Appendix 7.1). A number of records of species which are listed on National and Local Biodiversity Action Plans and the RSPB Red and Amber list were returned from within the datasearch including Skylark (National BAP and RSPB Red List), Meadow Pipit (RSPB Amber List), Linnet (National and Local BAP and RSPB Red List), Stock Dove (RSPB Amber List), Cuckoo (RSPB Red List), House Martin (Local BAP and RSPB Amber List), Yellowhammer (RSPB Red List), Reed Bunting (National and Local BAP and RSPB Amber List), Swallow (RSPB Amber List), Black-Headed Gull (RSPB Amber List), Marsh Tit (RSPB Red List), House Sparrow (Local BAP and RSPB Red List), Tree Sparrow (National and Local BAP and RSPB Red List), Willow Warbler (RSPB Amber List), Dunnock (RSPB Amber List), and Bullfinch (National BAP and RSPB Amber List).

7.4.46 In addition, a number of records were returned from the Buckinghamshire Bird Club including a species list for the "Salden Wood Railway Line" located adjacent to the southern Environmental Impact Assessment Study Area boundary. The species recorded largely reflect those recorded during the Breeding Bird survey conducted by Aspect Ecology with additional species including the Schedule 1 species and Local

BAP Fieldfare *Turdus pilaris* and the common species Jackdaw, the former of which is a wintering species while no breeding opportunities are available for the latter.

Amphibians

Aquatic Habitats

7.4.47 The Environmental Impact Assessment Study Area contains 7 ponds and 3 adjacent off-site ponds. 7 of these ponds offer potential breeding habitat for amphibian species, with a number of further waterbodies located within the vicinity of the Environmental Impact Assessment Study Area, which were visited during the course of the survey work. Of these, pond P5 is situated within a small area making up Leys Ground Farm and Bletchley Leys Farm, which is completely surrounded by the Environmental Impact Assessment Study Area and the other off-site pond, pond P9, is located close to the southern site boundary. Other ponds shown on the 1998 OS 1:25,000 scale map of the area, within the vicinity of the Environmental Impact Assessment Study Area include a number of further ponds situated off-site, to the north within Tattenhoe Park, to the east, to the south of the off-site railway line and near Thickthorn Farm, and west of the Environmental Impact Assessment Study Area to the west of Stearhill Farm.

7.4.48 In addition a further former ornamental pond FP1 was located within the Environmental Impact Assessment Study Area at the time of survey in 2008, but has since been removed by the former owner.

7.4.49 Specific survey work for the fully protected amphibian species Great Crested Newt was carried out on ponds P1 to P3 and pond P6 over 4 survey visits during early June 2006. No Great Crested Newts were recorded from any of ponds P1 to P3; indeed pond P3 had completely dried up by the time of the third survey visit. However, a population of Great Crested Newts was recorded from pond P6 during

the survey work. The detailed results of this survey work are set out at Appendix 7.13.

7.4.50 Ponds P4, P5 and P7 were surveyed between March and June 2007 with no Great Crested Newts recorded from these ponds. A number of Common Frogs *Rana temporaria* and spawn were recorded from pond P4. The detailed results of this survey work are set out at Appendix 7.13.

7.4.51 Specific survey work for Great Crested Newt was carried out on Ponds P8 and P10 within the Environmental Impact Assessment Study Area and the off-site P9 over 4 - 6 survey visits between May and early July 2008. No Great Crested Newts were recorded from Ponds P8 and P10 during the survey work undertaken. A single juvenile Great Crested Newt was recorded from the off-site pond P9. The detailed results of this survey work are set out at Appendix 7.13.

7.4.52 In addition, specific survey work for Great Crested Newt was carried out on the pond formerly located within the Environmental Impact Assessment Study Area, FP1 over 4 survey visits between May and June 2008. No Great Crested Newts were recorded from this pond, FP1 during the survey work undertaken.

Terrestrial Habitats

7.4.53 The Environmental Impact Assessment Study Area contains suitable terrestrial habitat for amphibians in the form of the unimproved and semi-improved rank grassland, hedgerows and scrub which are likely to be utilised by amphibians due to the proximity of ponds. Further potentially suitable terrestrial habitats outside the Environmental Impact Assessment Study Area include amenity planting/maturing woodland, woodland and areas of scattered scrub. In addition, the common amphibian species Common Frog and Common Toad *Bufo bufo* also utilise the site

Background Records

7.4.54 The desk study returned no records of the presence of amphibians from within or adjacent to the Environmental Impact Assessment Study Area. Two records of Great Crested Newt were returned from within the 3km by 3km search area around the Environmental Impact Assessment Study Area, the closest of which is situated approximately 400 metres north of the Environmental Impact Assessment Study Area (see Appendix 7.1).

7.4.55 A number of records were obtained from the NBN Gateway, although all specific records were located at a further distance from the Environmental Impact Assessment Study Area than those previously discussed. In addition, a number of non-specific records for the 10km by 10km grid square including and surrounding the Environmental Impact Assessment Study Area were included within data from the NBN (see Appendix 7.7).

Reptiles

7.4.56 The semi-improved rank grassland, hedgerows and scattered scrub at the Environmental Impact Assessment Study Area and off-site unimproved grassland provide adequate shelter, foraging and hibernation opportunities and a range of sunny and shady spots to potentially support common reptile species. Although the Milton Keynes area has very limited populations of reptile species, Grass Snake *Natrix natrix* can be relatively locally abundant and this species may particularly make use of areas around water.

7.4.57 Specific reptile surveys were undertaken across the Environmental Impact Assessment Study Area during 2008. A targeted survey was undertaken with survey equipment placed in areas of habitat considered to have higher potential to support

common reptiles. The results of these surveys are detailed at Appendix 7.14 and shown on Figure 7.5 -1110/ECO5.

7.4.58 The specific survey work undertaken in 2008 did not record the presence of reptiles from the survey areas across the Environmental Impact Assessment Study Area.

7.4.59 However, anecdotal, unconfirmed reports from a resident within the Environmental Impact Assessment Study Area suggest sightings of Adder *Vipera berus* in the south west of the Environmental Impact Assessment Study Area near to the discussed railway and Grass Snake under hay bales in a similar location. Grass Snakes were sighted not infrequently, but reported sightings of Adder were rare, only being reported once.

Background Records

7.4.60 No records of reptiles from within or adjacent to the Environmental Impact Assessment Study Area were returned from the data searches while the desk study returned no records of the presence of reptiles from the wider 3km by 3km search area around the Environmental Impact Assessment Study Area (see Appendix 7.1).

7.4.61 However, two records of Grass Snake were included within information obtained from the NBN Gateway including one record located approximately 1.8km from the Environmental Impact Assessment Study Area, and the other a non-specific record for the 10km by 10km grid square including and surrounding the Environmental Impact Assessment Study Area (see Appendix 7.7).

Invertebrates

7.4.62 The habitats at the Environmental Impact Assessment Study Area are expected to support a range of common invertebrates, although the intensive agricultural production they are under limits the diversity present greatly. Species recorded

during the survey work include Orange-tip *Anthocharis cardamines*, Large White *Pieris brassicae*, Peacock *Inachis io*, Brimstone *Gonepteryx rhamni*, Silver-Y *Autographa gamma*, Sawfly *Tenthredo* spp., Common Click Beetle *Athous haemorrhoidalis* and Soldier Beetle *Rhagionycha fulva*. However, there is no evidence to suggest that any more notable species are likely to be present.

Background Records

7.4.63 Information returned from the Buckinghamshire Bird Club included records of Butterflies from the "Salden Wood Site List". This site list included a record of the UK BAP species Wood White *Leptidea sinapsis* located adjacent to the Environmental Impact Assessment Study Area (see Appendix 7.4), with this species known to be present along parts of the disused railway corridor from which the UK BAP species Dingy Skipper and the Bucks and Milton Keynes BAP Key Associated Species Glow Worm have also been recorded. However, no habitat for these species is present within the Environmental Impact Assessment Study Area.

7.4.64 Survey work undertaken by members of Butterfly Conservation (Upper Thames Branch) along the off-site disused railway line located adjacent to the south of the site in summer 2009 recorded a number of butterfly and moth species (see Appendix 7.8). Their interim report dated December 2009 sets out the initial findings, which include the recorded presence of a number of UK BAP species Dingy Skipper *Erynnis tages*, Grizzled Skipper *Pyrgus malvae* and Wood White and local BAP species including Figure of Eight *Diloba caeruleocephala* macro-moth, Black Hairstreak *Satyrium pruni* (also a proposed Red Data Book Species), Green Hairstreak *Callophrys rubi* and Small Copper *Lycaena phlaeas*.

7.4.65 No further specific records of protected, rare or notable invertebrate species from within the 3km by 3km search area around the Environmental Impact Assessment Study Area were returned from the desk study exercise (see Appendix 7.1). Information from the wider 10km by 10km search area around the Environmental

Impact Assessment Study Area included a number of non-specific records of BAP Butterfly and Moth species (see Appendix 7.7).

Other Species

7.4.66 No evidence for the presence of any other protected, rare or notable species at the Environmental Impact Assessment Study Area was recorded from any of the survey work undertaken.

Ecological Evaluation

Principles of Ecological Evaluation

7.5.1 The evaluation of ecological features and resources should be based on sound professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this chapter is based on that described in 'Guidelines for Ecological Impact Assessment in the United Kingdom' published by the Institute of Ecology and Environmental Management (IEEM), 2006. In evaluating ecological features and resources the following key factors are taken into account:

Geographic Frame of Reference

7.5.2 The value of an ecological feature or resource is determined within a defined geographical context using the following frame of reference:

- international;
- national;
- regional;
- county (or Metropolitan);
- district (or Unitary Authority, City or Borough);
- local (or Parish); and
- at the site level only.

7.5.3 Within this frame of reference, certain sites may carry a statutory ecological designation, e.g. Special Area of Conservation (SAC) for internationally important sites or Site of Special Scientific Interest (SSSI) for sites of national importance.

7.5.4 Sites of more localised nature conservation importance do not receive statutory protection but may be designated by Local Planning Authorities or other bodies, e.g. Wildlife Trusts. Such non-statutory designations or “Local Sites”¹ include County Wildlife Sites (CWSs) and Sites of Nature Conservation Interest (SNCIs), for example.

Biodiversity Value

Habitats

7.5.5 In certain cases, the value of a habitat can be measured against known selection criteria, e.g. SAC selection criteria, “Guidelines for the selection of biological SSSIs” and the Hedgerows Regulations 1997. However, for the majority of commonly encountered sites, the most relevant habitat evaluation will be at a more localised level and based on relevant factors such as antiquity, size, species-diversity, potential, naturalness, rarity, fragility and typicalness (Ratcliffe, 1977). The ability to restore or re-create the habitat can also be an important consideration, for example in the case of ancient woodland.

7.5.6 Regard should also be given to habitats listed as priorities for conservation under the UK Biodiversity Action Plan (BAP) in accordance with Section 74 of the Countryside Rights of Way Act (2000) (CRoW), so called “Habitats of Principal Importance”, as the likely effect of a development on such habitats is a potential material consideration within the planning process. Certain habitats may also be listed within more regionally or locally specific BAPs, albeit the listing of a particular habitat under a BAP does not in itself imply any specific level of importance.

¹ DEFRA (2006) “*Local Sites – Guidance on their Identification, Selection and Management*”

Species

- 7.5.7 The assessment of the value of a species is based on factors including distribution, status, historical trends, population size and rarity. With respect to rarity, this can apply across the geographic frame of reference and particular regard is given to populations where the UK holds a large or significant proportion of the international population of a species.
- 7.5.8 For certain species groups, e.g. waterfowl, there are established criteria that can be used for defining nationally and internationally important populations.
- 7.5.9 Regard should also be given to species listed as priorities for conservation under the UK BAP in accordance with Section 74 of the CRoW Act 2000, so called "Species of Principal Importance". Certain species may also be listed within more regionally or locally specific BAPs, albeit as with habitats the listing of a particular species under a BAP does not in itself imply any specific level of importance.

Secondary or Supporting Value

- 7.5.10 Some habitats or features that are of no intrinsic biodiversity value may nonetheless perform an ecological function, e.g. as a buffer. In addition, certain features of the landscape which by virtue of their linear or continuous nature (e.g. rivers) or their function as "stepping stones" (e.g. small woods) may be of value for the migration, dispersal and genetic exchange of wild species.

Other Value

- 7.5.11 Other tertiary factors may also be relevant in evaluating the value of a particular ecological receptor including social and economic factors.

Principles of Ecological Assessment

7.5.12 Planning Policy Statement 9 (PPS9)² describes the Government's national policies on the protection of biodiversity [and geological] conservation through the planning system. PPS9 emphasises the need for planning authorities to ensure that the potential effects of planning decisions on biodiversity conservation are fully considered. A 5-point best practice approach^{3,4} to the assessment of such effects within the development control process is recommended:

1. **Information** – gathering a sufficient evidence base on which to make sound planning decisions;
2. **Avoidance** – adverse effects on habitats and species should be avoided where possible;
3. **Mitigation** – where it is unavoidable, mitigation measures should be employed to minimise adverse effects;
4. **Compensation** – where residual effects remain after mitigation it may be necessary to provide compensation to offset any harm; and
5. **New benefits** – many planning decisions present the opportunity to deliver enhancements for habitats or species.

7.5.13 The assessment of ecological effects set out within this chapter is based on the above five-point approach, where appropriate.

² ODPM (2005) "*Planning Policy Statement 9: Biodiversity and Geological Conservation*"

³ Royal Town Planning Institute (1999) "*Planning for Biodiversity – Good Practice Guide*"

⁴ ODPM (2006) "*Planning for Biodiversity and Geological Conservation – A Guide to Good Practice*"

Evaluation of Ecological Designations

- 7.5.14 Ecological designations within the vicinity of the Environmental Impact Assessment Study Area are described in section 3 of this report and are shown on Figure 7.2-1110/ECO2.
- 7.5.15 There are no statutory nature conservation designations within or adjacent to the Environmental Impact Assessment Study Area. The nearest such designation to the Environmental Impact Assessment Study Area is Howe Park Wood Site of Special Scientific Interest (SSSI), which is located approximately 1.2km north of the Environmental Impact Assessment Study Area. Howe Park Wood SSSI is well separated from the Environmental Impact Assessment Study Area by the A421 along with existing development and agricultural land.
- 7.5.16 A single non-statutory designation, Bridleway adjacent to Weasels Lodge BNS 83F06, is situated within the Environmental Impact Assessment Study Area, located in the south-west of the Environmental Impact Assessment Study Area on Weasels Lane. BNS 83F06 is comprised of a hardstanding trackway with associated hedgerows and trees for which it is designated.
- 7.5.17 Two further BNSs are located adjacent to the south-western Environmental Impact Assessment Study Area boundary. 'Scrub east of Salden Wood' (BNS 83F03) is located immediately beyond the disused railway on the southern site boundary. The BNS is described as being dense scrub dominated by Hawthorn, while to the west the habitat is more open with grassy species. 'Railway bank by Salden Wood (BNS 83A01) is a bank topped by a scrubby Hawthorn hedge mixed with mature Ash, with rank vegetation on the north facing bank. Badger is recorded to be present.
- 7.5.18 'Railway bank by Salden Wood' (BNS 83A01) along with a further area of unimproved grassland situated to the immediate south of the Environmental Impact Assessment

Study Area, were designated as Local Wildlife Sites in spring 2009. 'Railway bank by Salden Wood' LWS was designated for its mosaic of scrub and species rich calcareous grassland, with the majority of the floral interest of the Environmental Impact Assessment Study Area located on the northern, south-facing slope and stone chip scree, while the southern north-facing slope is almost entirely scrubbed over. 'Railway Sidings to the east of Salden Wood' LWS was designated for the complex mosaic of species rich grassland with calcareous influences, occasional tiny patches of grassland with acid influences, coarse grassland and developing scrub. The full qualifying criteria and detailed description of 'Railway bank by Salden Wood' LWS and 'Railway Sidings to the east of Salden Wood' LWS is included at Appendix 7.8.

7.5.19 In addition, two County Wildlife Sites (CWS) lie adjacent to the Environmental Impact Assessment Study Area. 'Broadway Wood and Thrift Wood' CWS lies adjacent to the north west while Salden Wood CWS is located to the south west of the Environmental Impact Assessment Study Area, south of the adjacent off-site former railway corridor. Broadway Wood and Thrift Wood CWS are a replanted mixed broadleaved and coniferous ancient woodland.

7.5.20 Salden Wood CWS is an ancient wood of wet Ash and Field Maple with a small number of Oak. Crosswort has been recorded within the wood, which is of particular interest as it is unusual in Buckinghamshire. In addition, a number of ancient woodland indicator species are present including Broad-leaved Helleborine *Epipactis helleborine*, Bluebell, Wood Sedge and Giant Fescue *Festuca gigantea*. A number of birds and butterflies have been recorded including Marsh Tit *Poecile palustris*, Coal Tit *Periparus ater*, Ringlet *Aphantopus hyperantus* and Gatekeeper *Pyronia tithonus*.

7.5.21 In addition, part of the Milton Keynes Wetland Corridor lies within the north of the Environmental Impact Assessment Study Area (see Figure 7.2 - 1110/ECO2), and in addition, the Environmental Impact Assessment Study Area also abuts a part of

Milton Keynes Woodland Corridor, both of which extend north from the Environmental Impact Assessment Study Area.

Habitats of Principal Importance

7.5.22 Section 41 of the NERC Act places duties on Government Ministers and Departments in respect of the conservation of biodiversity. The lists of the habitat types and species subject to this duty were originally published by DEFRA in 2002 and have been most recently updated in June 2007 and comprise the lists of species and habitats identified as Species of Principal Importance in England. This list largely reflects the species and habitats listed under the UK Biodiversity Action Plan.

7.5.23 A number of habitats listed as of Principal Importance under the UK BAP are present within the Environmental Impact Assessment Study Area including 'Hedgerows', 'Rivers' and 'Ponds'. In addition, these habitats are also listed in the Buckinghamshire and Milton Keynes BAP.

Habitat Evaluation

Habitats within the Environmental Impact Assessment Study Area

7.5.24 None of the plant species recorded within the Environmental Impact Assessment Study Area during any of the survey work undertaken are listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), nor do they receive any other form of statutory protection.

7.5.25 **Arable:** Large parts of the Environmental Impact Assessment Study Area are comprised of arable land, which is intensively managed and in use for agricultural crop production. These areas are mostly located in the east and south of the Environmental Impact Assessment Study Area.

7.5.26 Arable land is included on the list of priority habitats within the local BAP for Milton Keynes and Buckinghamshire, however, this reference refers mainly to the protection and benefit of rare arable weeds. The arable fields within the Environmental Impact Assessment Study Area have been farmed intensively, without the use of headlands, set side or other techniques and the weeds recorded from the survey work comprise entirely of common species.

7.5.27 Consequently, this habitat is considered to be of low value even at the local level.

7.5.28 **Grassland:** Grassland habitats also form considerable parts of the Environmental Impact Assessment Study Area, and are the dominant habitat type across the west and north of the Environmental Impact Assessment Study Area, although they are interspersed with arable habitats in the northern area of the Environmental Impact Assessment Study Area.

7.5.29 The grasslands are predominantly in use for livestock grazing being permanently grazed by horses, sheep or cattle in the centre and west of the Environmental Impact Assessment Study Area. This land use is reflected in their nature which is relatively uniform across the Environmental Impact Assessment Study Area with the grasslands typically comprised of a moderate range of mostly coarse grass species. The remaining grassland areas are likely to be used for silage production and are likely to receive herbicide and fertiliser inputs. All support few herb species (likely as a result of their intensive use) with those that are present being common in nature. Accordingly, the majority of the grassland habitats are of low local value.

7.5.30 The only areas of potentially raised interest are those supporting ridge and furrow, in the south and centre of the Environmental Impact Assessment Study Area, and the triangular field located in the north east of the Environmental Impact Assessment Study Area, which supports grassland of some interest.

- 7.5.31 The visible ridge and furrow may indicate stable long-term management, such that in certain circumstances it can indicate the presence of a more developed floral component. However, a closer examination of these areas finds that their intensive agricultural regime, particularly in the heavily horse grazed paddocks, has led to the development of a markedly poor herb content such that any former botanical interest in these areas appears to have been lost. Accordingly these areas are also of no more than low local value.
- 7.5.32 The triangular field of semi-improved grassland in the north east of the Environmental Impact Assessment Study Area was recorded to support a botanical assemblage of higher interest including the Local BAP species Meadow Crane's-bill and Lady's Bedstraw. This area of semi-improved grassland is of moderate value at the local level.
- 7.5.33 **Hedgerows:** A considerable number of hedgerows are present across the Environmental Impact Assessment Study Area, reflecting its agricultural nature. However, these are more frequent in the northern and western parts of the Environmental Impact Assessment Study Area where the field sizes are smaller. The land in the south and west of the Environmental Impact Assessment Study Area is relatively devoid of hedgerows due to the large field sizes due to arable land use.
- 7.5.34 The hedgerows enclose fields of varying sizes while the nature of the hedgerows themselves also varies as described under the 'habitats and ecological features' section above.
- 7.5.35 Overall, some 119 hedgerows are present within the Environmental Impact Assessment Study Area. Of these hedgerows:

- 40 are species poor and are unlikely to qualify as important under the 'Wildlife' criteria of the Hedgerows Regulations 1997;
- 22 are moderately species rich and may possibly qualify as important under the 'Wildlife' criteria of the Hedgerows Regulations 1997; and
- 57 are relatively species rich and are likely to qualify as important under the 'Wildlife' criteria of the Hedgerows Regulations 1997.

7.5.36 The locations of these hedgerows are illustrated at Figure 7-111/ECO4.

7.5.37 In addition, some 82 hedgerows may contain five or more woody species in an average 30m length and so would likely qualify as species-rich hedgerows within the Hedgerow Action Plan in the Buckinghamshire and Milton Keynes BAP.

7.5.38 The species rich hedgerows are in general distributed throughout the Environmental Impact Assessment Study Area. Species rich hedgerows were recorded across the majority of the Environmental Impact Assessment Study Area with particularly notable hedgerows recorded bordering Weasel's Lane.

7.5.39 More generally however, the hedgerows across the Environmental Impact Assessment Study Area form potential wildlife corridors. Therefore, hedgerows as a habitat are considered to be of moderate - high value at the local level.

7.5.40 **Ponds:** are included as a priority habitat under 'Open Standing Water' within the local BAP. Ponds are important habitats for a number of aquatic plants and fauna, much of which are restricted to this habitat. Their status as a local BAP habitat is as a result of a significant decline in the number of ponds over the last 25 years due to changes in agricultural practices and development.

- 7.5.41 10 ponds (P1 - P10) are located within or adjacent to the Environmental Impact Assessment Study Area. Of these ponds four (P1, P2, P3 and P9) are ephemeral waterbodies which hold little to no water year round and two (P7 and P8) are likely to remain only damp during the summer with little water. Accordingly, these ponds are of low - moderate ecological value even at the local level.
- 7.5.42 The remaining four ponds (P4, P5 and P10) are of varying sizes and quality, although all offer open water shaded to varying degrees by adjacent trees. Of these ponds, one is a garden pond, of limited ecological value, while two ponds support varying degrees of aquatic and emergent vegetation and all are of moderate – high ecological value.
- 7.5.43 Two off-site ponds offer potential breeding habitat for amphibians. These and a further pond are discussed in more detail in the faunal evaluation section below.
- 7.5.44 The former pond / small lake FP1 was well stocked with largely ornamental fish and was considered to be of moderate ecological value.
- 7.5.45 Overall, it is considered that the ponds are of moderate - high value at the local level.
- 7.5.46 **Watercourses and Ditches:** Watercourse WC3 carries a moderate flow of water year round. The steep banks support only a limited assemblage of vegetation and due to the overshadowed nature of the watercourse, no aquatic or emergent vegetation was recorded to be present. However, in conjunction with the mixture of mature, semi-mature trees, this feature forms a notable wildlife corridor across the north of the Environmental Impact Assessment Study Area and it is considered to be of moderate - high local value.

7.5.47 The remaining watercourses within the Environmental Impact Assessment Study Area are smaller and may not carry continuous flows of water. They also support very little in the way of aquatic or emergent vegetation and are somewhat overshadowed by adjacent hedgerows or choked by ruderal vegetation. Accordingly, they are of no more than low value at the local level.

7.5.48 **Buildings, Hardstanding and Associated Features:** The majority of the built form within the Environmental Impact Assessment Study Area is of limited ecological interest. However, a number of the buildings incorporate architectural and structural features which offer potential breeding habitat for a number of species of birds, although the potential for roosting habitat for bats is negligible in the majority of the buildings.

7.5.49 Building B10, Weasels Lodge and an associated building B13 offer the potential to support roosting bats. Further survey work recorded evidence for occasional use by bats, although no evidence was recorded to suggest that either building supports roosting bats.

7.5.50 The potential for the built form within the Environmental Impact Assessment Study Area to support bats or birds is discussed in more detail in the faunal evaluation section below.

7.5.51 The hardstanding pathways, roads and areas associated with the buildings including amenity gardens offer very little in the way of ecological value and accordingly are of low value at the Environmental Impact Assessment Study Area level.

7.5.52 **Trees:** A number of young, semi-mature and mature trees are present within the Environmental Impact Assessment Study Area, predominantly associated with the field boundary boundaries. These are in varying states of health. A number of semi-

mature to mature trees are present along the banks of watercourse WC3 forming a treed riparian corridor, which continues north and south along the length of the watercourse. Another distinctive treed corridor within the Environmental Impact Assessment Study Area is present in the form of Weasel's Lane, with adjacent woodland and wooded areas to the north and north west of the Environmental Impact Assessment Study Area.

7.5.53 A number of trees were recorded to contain features which are considered potentially suitable to support roosting bats, although this is discussed further at Section 7.5.84 – 7.5.85. In addition, the trees within the Environmental Impact Assessment Study Area are likely to provide potential breeding habitat for a number of species of birds, and provide foraging / commuting resources for bats, which is discussed further at Section 7.5.86 –7.5.87.

7.5.54 Overall individual mature trees are likely to be of moderate local value, while mature trees lines including those along watercourse WC3 and Weasel's Lane may be of high local value. Indeed, when considered as tree groups within a continuous habitat the importance of the treed corridors are elevated to that of high importance at the local level.

7.5.55 **Scattered Scrub:** A number of areas of scattered scrub are present within the Environmental Impact Assessment Study Area, most notably associated with the ponds and situated along the boundary with the disused railway corridor at the south west of the Environmental Impact Assessment Study Area.

7.5.56 The scrub is of minimal ecological interest, dominated by a few common species, which are common in the local area and is therefore considered to be of low value at the local/site level.

7.5.57 Recolonising Ground: Only limited areas of the Environmental Impact Assessment Study Area were recorded to comprise of recolonising ground. It is mostly found as an incidental habitat due to works in the vicinity of WC3 and Pond P4. This habitat is considered to be of low value at the local/site level.

7.5.58 Ruderal Vegetation: Only limited areas of the Environmental Impact Assessment Study Area were recorded to comprise of ruderal vegetation, predominantly located adjacent to roads. This habitat is considered to be of low value at the local/site level.

Habitats outside the Environmental Impact Assessment Study Area

7.5.59 Unimproved Grassland: An area of unimproved grassland which has developed on railway sidings to the south of the Environmental Impact Assessment Study Area supports a number of herb species forming a botanical assemblage of some interest. In addition the locally notable species Woolly Thistle was recorded within this habitat and accordingly the off-site unimproved grassland is considered to be of moderate-high value at the local/county level.

7.5.60 Ponds: Three ponds, P5, P6 and P9 are located off-site. Pond P5, is a garden pond which is of limited ecological value. Pond P6 supports varying degrees of aquatic and emergent vegetation and was recorded to support Great Crested Newt. Accordingly this pond is considered to be of moderate – high ecological value, although this is discussed further at Section 7.5.125 – 7.5.137. Pond P9, an ephemeral waterbody which only contains water during wetter seasons is situated to the west of the Environmental Impact Assessment Study Area within a horse grazed field, and is of limited ecological interest as it supports little true aquatic vegetation. However, pond P9 was recorded to support Great Crested Newt and accordingly is of higher value, although this is discussed further at Section 7.5.125 – 7.5.137.

7.5.61 **Watercourse WC4:** is present off-site to the south of the Environmental Impact Assessment Study Area, located adjacent to the off-site former railway corridor. The off-site watercourse is small and may not carry a continuous flow of water. It supports very little in the way of aquatic or emergent vegetation and is somewhat overshadowed by adjacent scrub and young trees. Accordingly, it is considered to be of no more than low value at the local level.

7.5.62 **Scattered Scrub:** Off-site scattered scrub is also present within the off-site unimproved grassland, with the scrub becoming more dominant towards the western end of this grassland area. The scrub is of minimal ecological interest, dominated by a few common species, which are common in the local area and is therefore considered to be of low value at the local level.

7.5.63 **Woodland:** An area of woodland, Thrift Wood and Broadway Wood, is located offsite adjacent to the western Environmental Impact Assessment Study Area boundary. Although it is comprised largely of ancient replanted woodland dominated by large coniferous plantations a number of ancient woodland indicator species including Bluebell and Primrose are recorded within the woodland. The woodland is designated as a non-statutory County Wildlife Site and accordingly the woodland is considered to be of moderate to high value at the county level.

7.5.64 In addition, the woodland offers opportunities for roosting and foraging bats, although this is discussed further at Section 7.5.86 – 7.5.87.

7.5.65 **Woodland / Maturing Amenity Planting:** Woodland / Maturing amenity planting is present adjacent to the A421. The Woodland / Maturing amenity planting is comprised of a limited diversity of common and amenity species and the relatively recently planted nature of the habitat is such that is lacking in structure and occurs in

only relatively small pockets of planting along the road. Accordingly, the Woodland / Maturing amenity planting is considered to be of low value at the local level.

7.5.66 Buildings, Hardstanding and Associated Features: A number of residential buildings, agricultural buildings and areas of hardstanding are present within small off-site areas of land surrounded by, situated within and adjacent to the Environmental Impact Assessment Study Area boundary. The Buildings, Hardstanding and Associated Features are of negligible ecological value. However, a number of the buildings incorporate architectural and structural features which offer potential habitat for a number of species of roosting bats and breeding birds.

Species of Principal Importance for Biodiversity

7.5.67 The NERC Act 2006 places duties on Government Ministers and Departments in respect of the conservation of biodiversity. A number of Species of Principal Importance in England (Section 41 of the NERC Act), also listed under the UK BAP, are present within the Environmental Impact Assessment Study Area including Brown Hare, Soprano Pipistrelle Bat, Adder, Grass Snake, Great Crested Newt and the bird species Skylark, Yellowhammer, House Sparrow, Cuckoo, Dunnock, Starling, Linnet, Bullfinch, Song Thrush and Reed Bunting.

Evaluation of Fauna within the Environmental Impact Assessment Study Area

Badger

Legislation

7.5.68 In the UK the relevant legislation pertaining to Badger is the Protection of Badgers Act 1992. The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain. It should be noted that the legislation is not intended to prevent properly authorised development. It is the duty of planning authorities to consider the conservation and welfare impacts of development upon Badger and

issue permissions accordingly. Planning authorities are, therefore, obliged to consult the appropriate Statutory Nature Conservation Organisation (SNCO) over any planning application that is likely to adversely affect Badger. The SNCO for England is Natural England.

7.5.69 Under the Protection of Badgers Act it is an offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat* a Badger, or attempt to do so;
- to intentionally or recklessly interfere with a sett[#] (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

(The intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting “cruel ill treatment” of a Badger.

A sett is defined as “*any structure or place which displays signs indicating current use by a Badger*”. Advice issued by Natural England (June 2009) is that a sett is protected as long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger.)

7.5.70 Licences can be obtained from the SNCO for development activities that would otherwise be unlawful under the legislation. Guidance on the types of activity that should be licensed is laid out in the publications “Badgers and Development” (English Nature, 2002) and “Badgers and Development: A Guide to Best Practice and Licensing. Interim Guidance Document” (Natural England, 2007). For example, excavation work or use of heavy machinery within 20m of any entrance to an active Badger sett may require a licence.

Evaluation

- 7.5.71 Sett S1 was formerly recorded as a single entrance former Badger Sett located adjacent to Weasel's Lane. Survey work undertaken in 2008 recorded that the former Badger sett had collapsed to such an extent that it was no longer present.
- 7.5.72 Sett **S2** is a single entrance sett, which is most likely an outlier sett, of limited importance to the Badgers, whose main territory is likely to be centred offsite. However, should work be required within 30m of the sett, it may be necessary to obtain a Natural England licence.
- 7.5.73 Sett **S3** is a single entrance outlier sett, of limited importance to the Badgers. Nonetheless, should work be required within 30m of the sett, it may be necessary to obtain a Natural England licence.
- 7.5.74 Sett **S4** was recorded in 2009 to be a single entrance Badger sett which appeared to be utilised by rabbits at the time of survey. Accordingly, this set appeared to be of limited importance to Badgers. A monitoring exercise would identify if this sett is in use or had come back into use by Badgers, and should this be the case, and should work be required within 30m of the sett, it may be necessary to obtain a Natural England licence.
- 7.5.75 In addition, a Badger was seen during evening survey work, and several Badger latrines and a number of pathways were recorded across the site. However, given the size of the Environmental Impact Assessment Study Area the recorded activity is relatively limited suggesting that the majority of the Environmental Impact Assessment Study Area is not regularly used by Badger, with the social groups main territory appearing to be centred offsite associated with a main sett most likely located to the south or west. Therefore, the main use of the Environmental Impact

Assessment Study Area is likely focussed on commuting and to a lesser extent foraging, in terms of the permanent grassland and seasonally, in terms of the arable.

7.5.76 Indeed, foraging habitat is present for Badgers across the Environmental Impact Assessment Study Area, although relatively little evidence of Badger foraging activity was recorded at the Environmental Impact Assessment Study Area during the survey work undertaken and as such, it appears that the Badgers make good use of foraging resources outside of the Environmental Impact Assessment Study Area.

7.5.77 Accordingly it is considered that the Environmental Impact Assessment Study Area is of low - moderate value at the local level for Badgers.

Bats

Legislation

7.5.78 All British bats are classed as European Protected Species and therefore receive protection under the Conservation (Natural Habitats &c.) Regulations 1994 (as amended), making it an offence *inter alia* to:

- deliberately kill, injure or capture a bat;
- deliberately disturb bats, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to rear or nurture their young, or their ability to hibernate or migrate, or which is likely to affect significantly their local distribution or abundance; and
- damage or destroy a breeding site or resting place of a bat.

7.5.79 In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- damage or destroy, or obstruct access to, any structure or place which any bat uses for shelter or protection; or

- disturb any bat while occupying a structure or place which it uses for that purpose.

7.5.80 If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard bats.

Evaluation

7.5.81 The majority of the buildings at the Environmental Impact Assessment Study Area are of construction types that offer few opportunities to support roosting bats, with no evidence for their presence recorded from the surveys.

7.5.82 Evidence for the occasional presence of bats was recorded from Building B10, Weasels Lodge and the associated building B13 in the form of a small number of scattered droppings from within Weasels Lodge and possible feeding remains from within building B13. The amount of evidence present in both cases is not indicative of roosting bats, but merely suggests the occasional presence of investigatory bats and a potential transitional feeding perch. In addition, the emergence / re-entry survey work conducted on buildings B10 and B13 did not record the presence of emerging or re-entering bats, further suggesting that the buildings are not used by roosting bats.

7.5.83 Accordingly, the majority of the buildings within the Environmental Impact Assessment Study Area are considered to be of negligible to low value to roosting bats, while buildings B10 and B13 are considered to be of low value to bats due to the limited evidence recorded within the buildings.

7.5.84 The semi-mature to mature trees within the Environmental Impact Assessment Study Area offers some opportunities for roosting bats. A number of the more mature trees located within the Environmental Impact Assessment Study Area have features such

as cracks, splits and/or woodpecker holes or thick coverings of Ivy that may offer some potential to support roosting bats. 60 trees were identified within the Environmental Impact Assessment Study Area to support 'high bat potential' and 'medium bat potential' namely those which supported features showing characteristics which may be of high or moderate value to bats and hence possess a high or moderate likelihood that bats may utilise them. 71 trees were identified within the Environmental Impact Assessment Study Area to support 'low bat potential' namely those which supported features which are relatively sub-optimal providing only a low likelihood that bats utilise them.

7.5.85 A sample of the trees identified to offer high and medium potential to support roosting bats were surveyed to give an indication of the frequency of tree roosts within the Environmental Impact Assessment Study Area during August and September 2008. No bats were recorded emerging from the trees during the specific survey work undertaken. This suggests that the trees surveyed within the Environmental Impact Assessment Study Area are unlikely to regularly support tree roosting bat species, although occasional use of trees within the Environmental Impact Assessment Study Area cannot be ruled out due to the transitory nature of tree roosting bat species.

7.5.86 In terms of foraging opportunities, much of the site comprises intensively farmed fields, which are open and lacking in navigational features, particularly in the south and east of the Environmental Impact Assessment Study Area and as such, these areas are unlikely to be favoured by foraging bats. However, the Environmental Impact Assessment Study Area offers some potential opportunities for bats, largely in the form of the trees, hedgerows and boundary features. Particular opportunities are represented by the double hedgerows and mature trees associated with Weasel's Lane, the tree and scrub cover associated with the trackway located to the south of the A421 and watercourse WC3, which provide a number of corridors and linear features across the Environmental Impact Assessment Study Area which form navigational features and which are used for foraging by bats. The semi-improved

grassland and hedgerows within the Environmental Impact Assessment Study Area also offer foraging opportunities in addition to navigational features. The former pond / small lake FP1 was recorded to on occasion support good numbers of foraging bats including 45kHz and 55kHz Pipistrelle and Brown Long Eared activity associated with it, while pond P4, situated between two hedgerows was regularly observed to be overflowed by bats commuting and foraging along the length of the hedgerows during survey work undertaken. The boundary with Thrift Wood and the dis-used railway corridor also offer adjacent linear features, which are likely to be well used by foraging bats.

7.5.87 Accordingly, it is considered that the large open intensively farmed fields are of low local value to foraging bats, although the identified linear features form corridors or habitats of moderate value at the local level.

7.5.88 Therefore overall the Environmental Impact Assessment Study Area is considered to be of low value at the local level for roosting bats and of moderate value at the local level for foraging bats.

Otter

Legislation

7.5.89 Otter is classed as a European Protected Species and therefore receives protection under the Conservation (Natural Habitats &c.) Regulations 1994 (as amended), making it an offence *inter alia* to:

- deliberately kill, injure or capture an Otter;
- deliberately disturb Otters, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to rear or nurture their young, or which is likely to affect significantly their local distribution or abundance; and / or

- damage or destroy a breeding site or resting place of an Otter.

7.5.90 In addition, Otter is also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- damage or destroy, or obstruct access to, any structure or place which any Otter uses for shelter or protection; or
- disturb any Otter while occupying a structure or place which it uses for that purpose.

7.5.91 If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard Otter.

Evaluation

7.5.92 No evidence of the use of the watercourses within the Environmental Impact Assessment Study Area by Otter was found during specific surveys and no records of Otter were returned from the data searches. Nonetheless, watercourse WC3 may act as a dispersal corridor for Otter from time to time as this species regains a strong hold along the waterways and waterbodies within Milton Keynes. Therefore it is considered that the Environmental Impact Assessment Study Area is of low value for Otter at the local level.

Water Vole

Legislation

7.5.93 Water Vole is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and as from 6th April 2008 became subject to increased legal protection,

such that they are now fully covered by Section 9 of the Act which contains provisions making it an offence to:

- intentionally injure, kill or take any Water Vole;
- intentionally or recklessly damage, destroy or obstruct any structure or place used by any Water Vole for shelter or protection; and / or
- intentionally or recklessly disturb any Water Vole whilst occupying a structure or place used for that purpose.

7.5.94 Water Voles are considered to be of high conservation concern in the national and local context. Their populations have declined dramatically over the last 25 years. Should this rate of decline continue the species may be in real danger of extinction from Britain in the short term and as a consequence the Water Vole is the subject of both national and local BAPs, in the form of a UK BAP Priority species and is referred to as an “Associated Key Species” within the Buckingham and Milton Keynes Biodiversity Action Plan.

Evaluation

7.5.95 No evidence for the presence of Water Voles was recorded during the survey work undertaken. Their absence from the Environmental Impact Assessment Study Area is likely to be explained by the sub-optimal nature of the watercourses, together with the likely presence of predatory American Mink within the locality.

7.5.96 Accordingly the Environmental Impact Assessment Study Area is considered to be of low value at the local level for Water Vole.

Brown Hare

Legislation

7.5.97 Brown Hares receive little legal protection, partly because they are game animals and can be managed by farmers and landowners, and partly because they are also a minor pest and can damage crops and young tree plantations. Nevertheless, the Brown Hare is a priority species under the UK Biodiversity Action Plan, which aims to maintain and expand existing populations.

Evaluation

7.5.98 The grassland areas that make up much of the Environmental Impact Assessment Study Area appear suitable to support Brown Hare, albeit this species often prefers larger unbroken extents of this habitat type. However, only a small number of sightings of Brown Hare were recorded at the Environmental Impact Assessment Study Area during the survey work between 2004 and 2008. As such, it is considered that the Environmental Impact Assessment Study Area does not support a large population of Brown Hare and hence it is concluded that the Environmental Impact Assessment Study Area is low-moderate value for this species.

Other Mammals

7.5.99 Other mammal species recorded at the Environmental Impact Assessment Study Area, including Fox, Short-tailed Field Vole, Rabbit, Common Shrew, Muntjac and Roe Deer are common in both a local and national context.

7.5.100 These legislative species carry no legislative protection and hence the Environmental Impact Assessment Study Area is considered of no more than moderate local value.

Birds

Legislation

7.5.101 Section 1 of the Wildlife & Countryside Act 1981 (as amended) is concerned with the protection of wild birds. With certain exceptions, all wild birds are protected such that it is an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird whilst in use* or being built; and / or
- take or destroy an egg of any wild bird.

*The nests of birds that re-use their nests as listed under Schedule ZA1, e.g. Golden Eagle, are protected against taking, damage or destruction irrespective of whether they are in use or not.

7.5.102 Species listed under Schedule 1 of the Act receive greater protection such that they are also protected against intentional or reckless disturbance whilst building a nest or whilst they are in, on or near a nest containing eggs or young. The dependent young of Schedule 1 birds are also protected against intentional or reckless disturbance. Offences in respect of Schedule 1 species are subject to special, i.e. greater, penalties.

Evaluation

7.5.103 54 species of breeding birds were recorded across the Environmental Impact Assessment Study Area during specific survey work undertaken in 2008, as detailed at Appendix 7.12. Particular concentrations of nesting birds were seen to be associated with the hedgerows across the Environmental Impact Assessment Study Area including along Weasels Lane, the mature vegetation associated with watercourse

WC3 and around the existing buildings. In contrast the open arable fields provide markedly fewer opportunities save for ground nesting species.

7.5.104 The 2008 breeding bird surveys recorded a moderate complement of species which is typical for intensively managed farmland in the area.

Schedule 1 Bird Species

7.5.105 None of the species recorded at the Environmental Impact Assessment Study Area are listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

NERC Section 41 Species of Principal Importance.

7.5.106 Section 41 of the NERC Act, places duties on Government Ministers and Departments in respect of the conservation of biodiversity. The lists of species subject to this duty, Species of Principal Importance in England, comprise species identified as priorities and generally reflect those listed under the UK Biodiversity Action Plan.

7.5.107 11 species listed as species of Principal Importance in England were recorded within the Environmental Impact Assessment Study Area during the specific survey work undertaken in 2008 namely, Cuckoo, Curlew, Reed Bunting, Dunnock, Bullfinch, House Sparrow, Song Thrush, Starling, Linnet, Skylark and Yellowhammer.

7.5.108 The presence of Curlew flying over the Environmental Impact Assessment Study Area on the first visit in April 2008 would be notable should the species be breeding in Buckinghamshire. However, as there were no subsequent records of this species it is considered to be a migrating individual and of lesser interest and as such is not considered further. Similarly only a single Cuckoo was recorded during the second visit in the vicinity of WC3, and it is considered this could possibly be a migrant visitor too.

7.5.109 The relative values of the populations of each bird species recorded breeding on the Environmental Impact Assessment Study Area is discussed at Appendix 7.12.

7.5.110 The surveys recorded moderate populations of the farmland bird species Skylark and Yellowhammer across much of the Environmental Impact Assessment Study Area. Skylark showed a distribution of relatively regular spacing across the more open, larger fields within the south, east and west of the Environmental Impact Assessment Study Area, and was not limited to one particular habitat. In addition, their presence was not excluded by arable winter cropping. Yellowhammer were also distributed relatively widely across the Environmental Impact Assessment Study Area, being recorded in the north, west and south west, but not in the large open arable fields in the south-east.

7.5.111 Small numbers of Linnet were recorded throughout the Environmental Impact Assessment Study Area, predominantly associated with hedgerows, as were Dunnock, Bullfinch and Song Thrush, which were particularly associated with hedgerows bordering Weasel's Lane. Small numbers of Reed Bunting, House Sparrow and Starling were located across the Environmental Impact Assessment Study Area, with House Sparrow associated with the buildings.

7.5.112 Farmland bird populations have declined greatly within recent decades and the group is subject to a Public Service Agreement (PSA) to reverse the decline. A number of specialist farmland species have shown particularly severe declines. Of these specialist species, Skylark, Linnet, Starling, Stock Dove, Yellowhammer, Whitethroat and Goldfinch were recorded during the survey. In addition, generalist species listed within the PSA were recorded within the Environmental Impact Assessment Study Area including Greenfinch, Jackdaw, Kestrel, Rook and Woodpigeon. While in decline, these farmland bird species do remain common over most of the UK and hence they are not considered in any way rare.

7.5.113 In contrast to the specialist species, the generalists, Greenfinch, Jackdaw, Kestrel, Rook and Woodpigeon have been recorded at a national level to show an increase to 16% above the 1970 baseline in 2006.

UK BAP Species

7.5.114 The UK BAP is the UK Government's response to the Convention on Biological Diversity (CBD) signed in 1992, which describes the UK's biological resources and commits a detailed plan for the protection of these resources. The UK BAP comprises a list of Priority species which are each the subject of a dedicated action plan which seeks to reverse their declines and protect vulnerable populations.

7.5.115 11 UK BAP species, were recorded within the Environmental Impact Assessment Study Area, which are the same 11 species as those listed and discussed above under the Section 41 NERC paragraphs.

RSPB Red List

7.5.116 Bird species are listed within the RSPB's publication Birds of Conservation Concern (2009) on the "Red List – high conservation concern" as a result of rapid ($\geq 50\%$) declines in UK breeding population over the last 25 years and rapid ($\geq 50\%$) contractions of UK breeding range over the last 25 years, in addition to a number of other criteria.

7.5.117 Seven RSPB Red list species were recorded within the Environmental Impact Assessment Study Area, namely Skylark, Song Thrush, Starling, House Sparrow, Linnet, Yellowhammer and Cuckoo, all of which are also listed in Section 41 of the NERC Act and the UK BAP.

Local BAP

7.5.118 Buckinghamshire and Milton Keynes Local BAP provides a platform from which to highlight habitats and species that are locally valued. They also provide a basis on which to direct habitat and species conservation on a local level. Buckinghamshire and Milton Keynes Local BAP lists a number of action plans for habitats and species which are given special attention including a number of bird species.

7.5.119 A number of bird species listed in the Buckinghamshire and Milton Keynes Local BAP were recorded during the breeding bird survey including Skylark, Greylag Goose, Swift, Linnet, Goldfinch, Greenfinch, Yellowhammer, Reed Bunting, Kestrel, Swallow, Curlew, House Sparrow, Dunnock, Bullfinch Goldcrest, Blackbird and Song Thrush.

7.5.120 Overall, the Environmental Impact Assessment Study Area is not considered to be of special ornithological interest, with the bird assemblage and the majority of the species populations being of low-moderate value at the local level. However, the populations of Skylark and Yellowhammer are considered to be of moderate value at the local level.

Amphibians

Legislation

7.5.121 All British amphibian species receive a degree of protection under the 1981 Wildlife and Countryside Act (as amended). The level of protection varies from protection from sale or trade only, as is the case with species such as Smooth Newt *Triturus vulgaris* and Common Toad, to the more rigorous protection afforded to species such as the Great Crested Newt.

7.5.122 Although Great Crested Newts are regularly encountered throughout much of lowland England and Wales, the UK holds a large percentage of the world population of the species. As such, the UK has an international obligation to conserve the species and it receives full protection under domestic and European legislation. Specifically, Great Crested Newt is classified as a European Protected Species and therefore receives protection under the Conservation (Natural Habitats &c.) Regulations 1994 (as amended), making it an offence *inter alia* to:

- deliberately kill, injure or capture a Great Crested Newt;
- deliberately disturb Great Crested Newts, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to hibernate, or migrate, or which is likely to affect significantly their local distribution or abundance;
- deliberately take or destroy the eggs of a Great Crested Newt; and / or
- damage or destroy a breeding site or resting place of a Great Crested Newt.

7.5.123 In addition, the Great Crested Newt is also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- damage or destroy, or obstruct access to, any structure or place which any Great Crested Newt uses for shelter or protection; or
- disturb any Great Crested Newt while occupying a structure or place which it uses for that purpose.

7.5.124 If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard Great Crested Newt.

Evaluation

7.5.125 A total of 7 ponds are present within the Environmental Impact Assessment Study Area, all of which were surveyed for Great Crested Newts, due to their potential suitability to support this protected amphibian species. In addition, survey work was also undertaken at a further three ponds, P5, P6 and P9 situated offsite adjacent to the central and south-western site boundaries.

7.5.126 During the survey work carried out, no Great Crested Newts were recorded from ponds P1 to P5, P7-P8 and P10. However, Great Crested Newts (peak count of 3 adults) were recorded from pond P6, which lies off site the north of the Environmental Impact Assessment Study Area and a single juvenile Great Crested Newt was recorded from pond P9 which lies off-site close to the south-western Environmental Impact Assessment Study Area boundary.

7.5.127 The peak population count of 3 adults at pond P6 recorded by bottle trapping. Under the standard population size class standards set out within the publication "Great Crested Newt Mitigation Guidelines" (English Nature, [now Natural England] 2001) populations can be classed as

- "small" for maximum counts up to 10;
- "medium" for maximum counts between 11 and 100; and
- "large" for maximum counts over 100.

7.5.128 Accordingly the population in the vicinity of the Environmental Impact Assessment Study Area is seen to fall into the band for a "small" size class.

7.5.129 Like other British amphibians Great Crested Newt is terrestrial and is normally only present in water during the breeding season. Great Crested Newts may utilise terrestrial habitats within 500 metres of their breeding ponds although typically the majority of activity is centred within 100m of the breeding pond with the maximum routine migratory activity usually occurring within 250m of the pond. A range of different water bodies are used for breeding but generally share one common theme in that they typically lack fish. Ideal terrestrial habitat will contain a high proportion of semi-natural habitat such as woodland, scrub and unimproved pasture.

7.5.130 The species is also cosmopolitan in terms of its habitat requirements. Hence the rather indifferent ecological quality of the ponds and their surrounding habitats does not in itself make the presence of this species less likely, as illustrated by the results for the Environmental Impact Assessment Study Area.

7.5.131 Great Crested Newts typically migrate between their terrestrial habitat and their breeding habitat typically in the form of ponds. Great Crested Newts in a given area form a meta-population, namely a series of smaller populations centred around clusters of breeding ponds which are typically within relatively close proximity to each other. The dispersal and distribution of individual between ponds varies depending on the quality of the habitats and changes in distribution and presence of habitats, e.g. seasonal ponds. The ability of the species to move between ponds especially if a pond is created or restored, or conversely if a pond become unsuitable, is of long term benefit to the survival of the species. Small isolated populations are less likely to persist in the long term and are at risk of extinction if recolonisation is unlikely to occur due to greater dispersal distances.

7.5.132 The offsite pond P6 is somewhat isolated in nature being situated between the A421 and the Whaddon Road (a partial barrier), although an underpass is present beneath the A421. This underpass may provide linkage to four ponds which are located within approximately 250 - 500m of pond P6. The desktop study returned

records of Great Crested Newt located approximately 450 metres north of the Environmental Impact Assessment Study Area, indicating other meta-populations are present in this area, although opportunities for dispersal are limited by the roads and the distances involved.

7.5.133 A number of further ponds (approximately 7), identified from the 1998 OS 1:25,000 map of the area are located within approximately 1km of pond P6. There could potentially be movement of Great Crested Newts between these different water bodies, although movements of this distance are considered to be close to the dispersal limits of this species and so any population present at the pond is at some risk of extinction.

7.5.134 Three ponds were identified located within approximately 250-500m of pond P9 from which a single juvenile Great Crested Newt was recorded. No obvious barriers to dispersal were identified from study of the 1998 1:25,000 OS map. However, no known populations of Great Crested Newt are present within 500m, such that there would be limited opportunities for meta-population activity, and as such the pond is less likely to be recolonised and any population present is also at some risk of extinction.

7.5.135 None of the other ponds within the Environmental Impact Assessment Study Area were recorded to support Great Crested Newts, and accordingly the potential for recolonisation or gene exchange is limited to the nearest populations of Great Crested Newts. The majority of the arable on-site offers poor terrestrial opportunities for Great Crested Newts. However, some suitable terrestrial habitat is present in the form of hedgerows and areas of scattered scrub and grassland, in particular those linking to aquatic habitats. For example, pond P6 is situated within an area of rank grassland with areas of maturing amenity planting/woodland and hedgerows bounding fields also within approximately 100m. Pond P9 is located towards the corner of a grazed field. Further terrestrial habitat opportunities are afforded by the

maturing amenity planting / woodland and scrub adjacent to Pond P6 and the small amount of Bramble dominated scrub located adjacent to pond P9, while hedgerows which border the fields provide further suitable terrestrial habitat in addition to providing potential links to other waterbodies. The arable and grazed grassland fields within approximately 250m of both ponds are of low value for the species whilst the A421 forms a barrier to movement to the north and by Whaddon Road to the south-west, albeit the barrier effect is reduced by the presence of an underpass under the A421.

7.5.136 Overall two ponds were recorded to support small populations of Great Crested Newt within the Environmental Impact Assessment Study Area. Both of these off-site ponds are relatively isolated in terms of populations of Great Crested Newts and accordingly there is a risk of extinction, due to the lack of ponds supporting other populations within an appropriate distance. Accordingly, these ponds themselves are of high local conservation importance to this species due to their isolated nature, while they are also somewhat vulnerable in nature. Overall, the Environmental Impact Assessment Study Area is considered to be of moderate local value for this species.

Reptiles

Legislation

7.5.137 All 6 species of British reptile are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). However, a higher level of protection is afforded to Sand Lizard and Smooth Snake than to Adder, Grass Snake, Slow-worm and Common Lizard.

7.5.138 For all British reptile species, Section 9 of the Wildlife and Countryside Act 1981 (as amended) contains provisions making it an offence to intentionally:

- kill or injure; or to
- sell, offer for sale or trade any British reptile.

7.5.139 Because Slow-worm, Common Lizard, Grass Snake and Adder are relatively widespread British species, their habitat is not directly protected. Nevertheless, because of their partial protection, disturbing or destroying their habitat whilst they are present may lead to an offence.

7.5.140 Section 9 of the Wildlife and Countryside Act 1981 (as amended) also contains provisions making it an offence to intentionally or recklessly:

- damage or destroy, or obstruct access to, any structure or place which any Sand Lizard or Smooth Snake uses for shelter or protection; or
- disturb any Sand Lizard or Smooth Snake while occupying a structure or place which it uses for that purpose.

7.5.141 In addition, Sand Lizard and Smooth Snake are classed as European Protected Species and therefore receive protection under the Conservation (Natural Habitats &c.) Regulations 1994 (as amended), making it an offence *inter alia* to:

- deliberately kill, injure or capture a Sand Lizard or Smooth Snake;
- deliberately disturb Sand Lizards or Smooth Snakes, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to hibernate, or migrate, or which is likely to affect significantly their local distribution or abundance;
- deliberately take or destroy the eggs of a Sand Lizard; and / or

- damage or destroy a breeding site or resting place of a Sand Lizard or Smooth Snake.

7.5.142 If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard Sand Lizard/Smooth Snake.

Evaluation

7.5.143 The habitats present within the Environmental Impact Assessment Study Area are unsuitable to support Sand Lizard and Smooth Snake, which have specific habitat requirements comprising sandy heaths and dunes and as such are highly restricted in their distribution.

7.5.144 The areas of grassland at the Environmental Impact Assessment Study Area, in combination with the scattered scrub and hedgerows provide adequate shelter, foraging and hibernation opportunities and a range of sunny and shady spots to potentially support common reptiles, albeit Milton Keynes typically supports only limited populations of reptiles. Nonetheless, in order to establish the presence or absence of this group specific survey work was undertaken for reptiles, as detailed at Figure 7.8 -1110/ECO8 and Appendix 7.14.

7.5.145 No reptiles were recorded during the specific survey work undertaken across the Environmental Impact Assessment Study Area within habitats targeted for their potentially suitable nature. However, anecdotal reports from a local resident along Weasel's Lane indicate the presence of Grass Snake and Adder at very low numbers.

7.5.146 This indicates that only very small populations of these reptile species are likely to be present on the Environmental Impact Assessment Study Area. In addition, reference to their distribution shows that these are not widespread across the

Environmental Impact Assessment Study Area but by contrast appear to be localised populations centred around small areas. In particular Grass Snake was sighted in the vicinity of former pond / lake FP1 which accords with the species' association with water, while Adder was also sighted in this area and this accords with the association this species may have with the more thermophilic habitats associated with the disused railway.

7.5.147 Given the size of the Environmental Impact Assessment Study Area and the survey work undertaken, it is therefore concluded that it supports only a very small population of common reptiles, likely centred along the boundary with the dis-used railway and around the water bodies. Accordingly, overall it is considered that the Environmental Impact Assessment Study Area is of relatively low value to reptiles in the local context.

Invertebrates

7.5.148 A number of common invertebrate species were recorded at the Environmental Impact Assessment Study Area during the survey work undertaken. The species recorded are common in nature while it is likely that the overall assemblage would also be un-remarkable in nature due to the habitats present which are represented by agricultural fields under intensive production.

7.5.149 There is no evidence to suggest that the Environmental Impact Assessment Study Area supports any notable invertebrate species, although the habitats within the Environmental Impact Assessment Study Area are likely to support a range of common invertebrates, particularly in terms of watercourse WC3 and to a lesser extent the other watercourses and ponds.

7.5.150 The more notable butterfly species located off-site along the adjacent railway corridor are likely to be restricted to this area with no real habitat for these species being present within the Environmental Impact Assessment Study Area.

7.5.151 Overall, it is considered that the Environmental Impact Assessment Study Area is of no more than moderate value at the local level for invertebrates.

Ecological Impacts, Mitigation and Enhancement Opportunities

Impacts, Significance and Mitigation

- 7.6.1 Standard methods and definitions are used in the assessment of ecological value, context and the level of importance of any impact on a given site, area or species. This assessment is set in the context of the value of the given site, habitat or species, as outlined within the Evaluation section above.
- 7.6.2 The IEEM publication 'Guidelines for Ecological Impact Assessment in the United Kingdom' (2006) sets out a methodology for Ecological Impact Assessment. These methods are followed which can be summarised as below.
- 7.6.3 Any impact should be assessed within its relevant frame of geographical reference, in terms of the levels of 'international, national, regional, county (or metropolitan), district (or unitary authority, city of borough), local (or parish) or at the site level'.
- 7.6.4 Against this reference frame, the magnitude of the impact can be assessed and categorised either quantitatively or under the following headings:

Magnitude	Determination of magnitude
Major/High	The magnitude of an impact is determined taking into account the geographic frame of reference and the effects on the integrity of a site or habitat or the conservation status of a species in terms of the duration (permanent or temporary), reversibility, extent, timing, frequency and certainty (e.g. certain, probable or unlikely) of the potential impact.
Moderate	
Minor/Low	
Negligible	

7.6.5 Impacts can be positive or beneficial, negative/adverse or neutral in nature.

7.6.6 The magnitude of the impact is in turn used in conjunction with 'conservation status' to determine whether an impact on a habitat or species is likely to be ecologically significant. Conservation status is defined as:

- for habitats – The sum of the influences acting on the habitat and its typical species, that may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area; and
- for species – The sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area.

7.6.7 Where the integrity of the favourable conservation status of a habitat or species, is undermined the impact could be negative and significant.

7.6.8 A significant positive impact could be defined as one that prevented or slowed an existing decline in the integrity of the favourable conservation status of a habitat or population as much as one that permitted a population or habitat area to increase.

7.6.9 Accordingly the Impact Assessment below is set in the context of principles set out above and in sections 7.5.1 - 7.5.13 of this report.

Impacts on Designated Sites

Statutory Designations

7.6.10 The Environmental Impact Assessment Study Area itself is not subject to any statutory nature conservation designation. The nearest statutory designation to the Environmental Impact Assessment Study Area Howe Park Wood Site of Special Scientific Interest (SSSI), which is located approximately 1.2km north of the Environmental Impact Assessment Study Area.

***Impacts:** This Site of Special Scientific Interest (SSSI) is well removed and separated from the Environmental Impact Assessment Study Area and will not therefore be directly or indirectly affected by any proposed development.*

*Impacts are at the **national level** and of **no significance**.*

***Mitigation:** No mitigation is required.*

Non-statutory Designations

7.6.11 A single non-statutory nature conservation designation, Bridleway adjacent to Weasels Lodge BNS 83F06, is situated within the Environmental Impact Assessment Study Area, located in the south-west of the Environmental Impact Assessment Study Area on Weasels Lane. In addition, part of Milton Keynes Wetland Corridors and Milton Keynes Woodland Corridors lie within the north of the Environmental Impact Assessment Study Area.

7.6.12 Two CWSs ('Broadway Wood and Thrift Wood' and 'Salden Wood CWS') two LWS's ('Railway Sidings to the East of Salden Wood' and 'Railway Bank by Salden Wood') and two BNSs (Scrub east of Salden Wood' (BNS 83F03) and 'Railway bank by Salden Wood' (BNS 83A01)) lie adjacent to the boundaries of the Environmental Impact Assessment Study Area. In addition, a number of further non-statutory designations are located in the vicinity of the Environmental Impact Assessment Study Area as shown at Plan 7.2 -1110/ECO2).

7.6.13 **Woodland:** Broadway and Thrift Wood' CWS is located adjacent to the north-western boundary of the Environmental Impact Assessment Study Area. The woodland supports a number of ancient woodland indicator species and is designated as a County Wildlife site, and accordingly is considered to be of moderate – high value at the county level.

7.6.14 Mixed deciduous lowland woodland is a UK BAP habitat, due to clearance, re-planting with non-native species and overgrazing resulting in a decline of this priority habitat type on ancient woodland sites of 30-40% in the last 50 years. As such careful consideration will be given to this BAP habitat in both the master-planning and mitigation of the development proposals.

Impacts: A number of non-statutory designations (County Wildlife Sites, Biological Notification Sites and Milton Keynes Wildlife Corridors) are situated within or immediately adjacent to the Environmental Impact Assessment Study Area and as such may be affected by the development.

'Broadway and Thrift Wood' CWS and 'Bridleway adjacent to Weasels Lodge' BNS are situated within the vicinity of areas of proposed development.

Broadway and Thrift Wood' CWS is located off-site adjacent to the Environmental Impact Assessment Study Area boundary and will be retained and will not be directly

affected by the proposals. An area of low density residential development is proposed to the south of the southern boundary of the woodland end. However, areas of open space network in the form of the Thrift and Broadway Wood Transitional Area are proposed between the built form footprint and the woodland which will buffer the woodland from impacts. The remainder of the woodland edge bounds the extension of Loughton Brook Linear Park, an Eco/Wildlife Park. Accordingly the northern part of the woodland that adjoins the Environmental Impact Assessment Study Area borders an expanse of open space and Eco/Wildlife Park, while the southern part of the woodland adjoins a transitional zone which acts as a buffer to a medium density residential development.

There is little potential for damage to be caused to the trees and their roots during built form development, as it is not located adjacent to the woodland, however, there is some limited potential for damage to occur during localised landscaping works.

The potential is also present for new lighting to affect nocturnal faunal species, particularly those which use the woodland edge.

The potential exists for minor impacts to take place in the form of run off entering the woodland during the construction and post-construction phase.

'Broadway and Thrift Wood' CWS is likely to be affected by increased visitor pressure, due to the presence of a public right of way through the woodland. Some base level of visitor activity already takes place, although the proposed development is likely to lead to increased levels of disturbance albeit this will be centred on this single pathway. It is considered impacts may be proportionally greater in the south, in the vicinity of the residential development.

'Bridleway adjacent to Weasels Lodge' BNS is situated within an area of open space, OS6, although two areas of medium density residential development R4 and R5 are situated to the immediate north and south of the open space.

Two further non-statutory designations, Salden Wood CWS and Scrub east of Salden Wood BNS are located to the south of the former railway line which borders the southern boundary of the Environmental Impact Assessment Study Area. These non-statutory designations do not directly border the Environmental Impact Assessment Study Area and no built form development is proposed in the vicinity of 'them or the Milton Keynes Woodland and Wetland corridors as open space network is proposed in these locations so buffering these designations. Nonetheless, the designations could be indirectly affected by the proposals.

Railway bank by Salden Wood LWS and Railway sidings to the east of Salden Wood LWS are situated to the north of the railway line, or span either side and as such few features are present to separate these non-statutory sites from the Environmental Impact Assessment Study Area. However, no built form development is proposed in the vicinity of 'them or the Milton Keynes Woodland and Wetland corridors as open space network is proposed in these locations so buffering these designations. Nonetheless, the designations could be indirectly affected by the proposals.

The construction phase and operational phase could see a number of effects on these designations, in terms of hydrology, dust, noise and access along with increased pressure from public access in the form of littering, visitor numbers and consistent disturbance post construction.

In addition, the creation of landscape buffers and the landscaping and habitat creation works will occur in the vicinity of the non-statutory designations particularly 'Broadway and Thrift Wood' CWS and 'Bridleway adjacent to Weasels Lodge' BNS.

As such there is potential that these designations will be indirectly affected by the proposals in terms of hydrological links, surface flows, dust, noise and access.

Hydrology Hydrological links between the Environmental Impact Assessment Study Area and the non-statutory designations are predominantly through surface flows and ground seepage to the adjacent land. No watercourses directly flow from the development site to the non-statutory sites as such limiting the potential for any contamination reaching these designations due to watercourses. However, a number of ditches and watercourses pass through the Environmental Impact Assessment Study Area and lead to non-statutory sites, which could potentially contaminate the sites in the event of a pollution incidence. Due to the proximity of the development areas to the CWSs and BNSs, impacts include the potential for the accumulation of polluted / contaminated run off entering the CWSs/BNSs, through surface flows during the construction and operational phases. In addition, these designations have the potential to suffer some adverse drainage due to possible changes to the hydrological input of the surrounding developed land.

Dust created during the construction phase may impact on the non-statutory designations, should this comprise of sufficiently fine particulates to be wind blown in large quantities, particularly 'Broadway and Thrift Wood' CWS and 'Bridleway adjacent to Weasels Lodge' BNS which are located in close proximity to development areas.

Noise Very loud point noise sounds (bangs) during the construction process may have the potential to disturb any wintering birds, mammals including Brown Hare and other fauna utilising the non-statutory designations, particularly in the case of 'Broadway and Thrift Wood' CWS. However, due to the distances from the built form development footprint to the other non-statutory designations, and particularly to the north with the presence of the busy A421 which offers some degree of background noise, it is considered that any such impacts would be minimal.

Access A Public Right of Way (PRoW) passes through 'Broadway and Thrift Wood' CWS, 'Bridleway adjacent to Weasels Lodge' BNS and the part of Milton Keynes Woodland corridor which is situated to the north of the Environmental Impact Assessment Study Area. The development is likely to lead to increased disturbance of these non-statutory designations. No other PROW public access is available to the remaining non-statutory designations located adjacent to the Environmental Impact Assessment Study Area boundaries and hence such adverse recreational effects are not anticipated in the majority of the non-statutory designations. However, it is likely that informal pathways and access is available and as such some degree of increase in recreational pressure is to be expected within any unsecured area of open space within the vicinity of the Environmental Impact Assessment Study Area.

An increase in public access in the vicinity of the non-statutory designations in the form of footpaths within the proposed areas of Open Space, particularly OS32, OS31 OS34 and OS6 will likely increase disturbance from dog walkers and pedestrians which could impact on 'Broadway and Thrift Wood' CWS, the part of the Milton Keynes Wetland Corridor located adjacent to the north of the Environmental Impact Assessment Study Area and to a lesser extent the non-statutory designations located to the south of the disused railway line.

Impacts are **negative** at the **local - County** level and of **moderate – high significance**.

Mitigation: General As a general principle, it is recommended that work in the vicinity of CWSs and BNSs is kept to a minimum particularly where such works are disturbing in nature or require the use of machinery.

Hydrological links An environmental construction management plan will be worked up and implemented in order to safeguard the surrounding habitats, in particular

'Broadway and Thrift Wood' CWS, 'Bridleway adjacent to Weasels Lodge' BNS and the Milton Keynes Wildlife Corridors from pollutants and changes in hydrological regime, which could potentially occur during the construction and operational phase.

Surface flows An environmental construction management plan will be drawn up to ensure that any surface flows arising from landscaping works do not pass off-site and enter into any of the non-statutory designations located adjacent to the Environmental Impact Assessment Study Area boundaries.

Dust In order to safeguard the adjacent non-statutory designations, particularly 'Broadway and Thrift Wood' CWS, 'Bridleway adjacent to Weasels Lodge' BNS from the indirect effects of landscape works, should such works take place during very dry weather the ground will be dampened prior to working to decrease the quantity of airborne dust produced and thus limit the amount of dust which will settle on off-site vegetation. In any event, dust which does settle will be washed away with rain and thus any effects will only be short term.

Noise Any operations occurring in the vicinity of non-statutory designations which could potentially produce point noise sources of a magnitude that could disturb wintering birds or susceptible fauna will be controlled so that these are reduced to acceptable levels where necessary such as the periphery of the study area.

Access Three of the surrounding non-statutory designations appear to have public right of way access for visitors and hence are likely to be subject to recreational impacts. At the present time these non-statutory sites are already utilised by local residents and additional recreational use arising from the proposals needs to be considered against this background of use, with good visitor facilities present within the Milton Keynes Wetland Corridor and Tattenhoe Park which are well able to accommodate additional traffic.

However, the majority of the surrounding non-statutory sites do not have public right of way access for visitors, although informal usage may occur and hence are less likely to be subject to the same degree of recreational impacts.

Increased pressure from pedestrian usage on the surrounding area will be mitigated by the provision of significant areas of public open space located throughout the Environmental Impact Assessment Study Area, particularly OS3 and OS31 which form an extension to the Milton Keynes Wetland Corridor (Loughton Brook Linear Park), open space spanning the Environmental Impact Assessment Study Area from north – south in the west, OS19, OS20, OS21, OS22 and OS24 and along and adjoining Weasels Lane OS6, OS8, OS10, OS11 and OS28. These areas of open space will take the form of Amenity Open Space, Playing Fields, Informal Parkland and Allotments and the Salden Chase Eco/Wildlife Park.

In addition, to limit any indirect effects from increases in activity in the vicinity of ‘Salden Wood’ CWS additional scrub/tree planting will be undertaken in a series of woodland glades which replicate the previous pattern of habitat when the site was part of Whaddon Case.

The trees and their associated root protection zones in ‘Broadway and Thrift Wood’ CWS located adjacent to the areas of proposed development will be protected by appropriate tree protection fencing erected to British Standards.

A sensitive lighting design will be employed to ensure light spill from the adjacent development onto the areas of retained woodlands, such as ‘Broadway and Thrift Wood’ CWS, is minimised so that they remain available to nocturnal wildlife.

The proposed Open Space Network within the Environmental Impact Assessment Study Area, specifically that located adjacent to Broadway and Thrift Wood’ CWS in the form of the Thrift and Broadway Wood Transitional Area and the extension to

Loughton Brook Linear Park, will serve to largely absorb the visitor pressure potentially experienced by the woodland. In addition, these areas link into other areas of formal and informal open space across the Environmental Impact Assessment Study Area, such that it is likely that increased visitor pressure and access to the woodland will be mitigated by the provision of managed open space.

'Broadway and Thrift Wood' CWS will benefit from the removal of adjacent land from agricultural regime and oversprays of herbicide, pesticide and fertiliser input.

The creation of the Salden Chase Eco-Park and the eco-tone edge interface in the form of Broadway and Thrift Wood transitional linkage with Whaddon Chase copses will benefit woodland fauna.

Following mitigation, residual impacts are at the **local - County level** and of **low** significance.

Impacts on Habitats of Principal Importance

7.6.15 A number of habitats listed as of Principal Importance under Section 41 of the NERC Act 2006 are present within the Environmental Impact Assessment Study Area including 'Hedgerows', 'Rivers' and 'Ponds', which are discussed in detail below at sections 6.4.6 and 6.4.8.

Impacts on Habitats within the Environmental Impact Assessment Study Area

7.6.16 The Environmental Impact Assessment Study Area is predominantly comprised of arable fields and grazed grassland bounded by hedgerows with a number of associated standard trees. Other habitats are also present within the Environmental Impact Assessment Study Area include ponds, watercourses and ditches, buildings, trees, woodland and scattered scrub. Further habitats identified located off-site, but adjacent to the Environmental Impact Assessment Study Area, include unimproved

grassland, further ponds and watercourses, woodland, scattered scrub and buildings and hardstanding.

7.6.17 **Arable:** Large parts of the Environmental Impact Assessment Study Area are comprised of arable land, particularly in the south and east of the Environmental Impact Assessment Study Area, which is intensively managed and in use for agricultural crop production. The intensive farming regime practised on these fields does not give rise to habitats suitable for rare and declining arable weed species, such that the arable land is not reflective of this BAP habitat and the habitat is of low ecological value at the local level.

Impacts: The proposals will result in the loss of all of the arable within the Environmental Impact Assessment Study Area.

Impacts are **negative** at the **local level** and of **no significance**.

Mitigation: No mitigation is required.

7.6.18 **Grassland:** Much of the west and north of the Environmental Impact Assessment Study Area is comprised of species-poor semi-improved to improved grassland with a very low herb content, which predominantly appears to be under agricultural management for livestock grazing and silage and was recorded to support few herb species and a limited number of grass species. A number of fields were recorded to have ridge and furrow features although no enhanced flora interest was recorded. As such they are also considered to be of low ecological value.

7.6.19 A small area of grassland situated within the extreme north-west of the Environmental Impact Assessment Study Area was recorded to support a botanical assemblage of higher interest and accordingly is considered to be of moderate value at the local level.

Impacts: *The proposals will result in the loss of much of the grassland within the western and northern part of the Environmental Impact Assessment Study Area, particularly in the main areas of built development. The area of grassland showing higher botanical interest in the north-east of the Environmental Impact Assessment Study Area will be lost under the proposals, becoming an area of low density residential development.*

*Impacts are **negative** at the **local level** and are of **minor significance***

Mitigation: Extensive new areas of grassland will be created at the periphery and throughout the development in the form of the open space network (as shown at Plan 7.9 -1110/ECO9). These areas will be seeded or over-seeded with wildflower grassland and will be of significantly higher ecological value than the existing silage fields. These areas will be subsequently managed so as to ensure their value is retained.

The grassland in the informal parkland, Salden Chase Eco/Wildlife Park, Thrift and Broadway Wood Transition Area and the area which extends the Loughton Brook Linear Park will be seeded using native species appropriate to the local area and managed as wildflower grassland and in places as a wildflower meadow. Seasonal flooding will also occur allowing a variation of dry and wet habitats typical of natural lowland meadows. Overall, the informal parkland will be comprised of a matrix of wildflower grassland with pockets of scrub and new tree planting in the form of copses with areas of close mown amenity grassland also present. The creation and management of these habitats will be guided by the UK BAP for Lowland Meadows and will work towards the aims of the Lowland Meadow UK BAP Habitat Action Plan and the Buckinghamshire BAP.

Following mitigation, residual impacts are **positive** at the **local level** and of **minor-moderate significance**.

7.6.20 **Hedgerows:** A considerable number of hedgerows are present across the Environmental Impact Assessment Study Area, although these are more frequent in the north and west of the Environmental Impact Assessment Study Area where the fields are smaller in size. They are variable in nature with a number (79) being recorded as being possibly or likely to qualify as important under the Hedgerows Regulations 1997, although a further 40 are species poor and are unlikely to qualify as important based on ecological criteria. In addition, a number (82) of the hedgerows are also regarded as 'species-rich hedgerows' under the Buckinghamshire and Milton Keynes BAP. In addition, the hedgerows across the study area form a linked network of wildlife corridors which vary in their degree of function depending on the nature of individual hedgerows.

7.6.21 Hedgerows are a UK BAP Habitat and as such require consideration within development proposals. As such the presence of this UK and local BAP habitat within the Environmental Impact Assessment Study Area has been given due consideration within the master-planning stage in terms of retaining, protecting and enhancing where possible.

Impacts: Over two thirds of hedgerows (85 out of 119) within the Environmental Impact Assessment Study Area are retained under the proposals. A small number, approximately 7, of these hedgerows will be breached by primary streets, roads and footpaths. Of the hedgerows which are retained under the development 44 are considered likely to qualify as 'important' under the Hedgerows Regulations 1997, 15 hedgerows are considered possible/likely or possible to qualify as 'important' under the Hedgerows Regulations 1997 and 26 hedgerows are considered unlikely to qualify as 'important' under the Hedgerows Regulations 1997.

Overall, the built development footprint will result in the loss of approximately 32 hedgerows. Of these approximately 13 are considered likely to qualify as 'important' under the Hedgerows Regulations 1997, approximately 8 hedgerows are considered possible/likely or possible to qualify as 'important' under the Hedgerows Regulations 1997 and 11 hedgerows are considered unlikely to qualify as 'important' under the Hedgerows Regulations 1997.

Of the hedgerows that will be retained under the proposals, some direct negative impacts may occur during the clearance and construction works, and landscaping works. In addition, the potential is also present for new lighting to affect nocturnal species utilising the hedgerow network of wildlife corridors.

Impacts are **negative** at the **local level** and of **moderate significance**.

Mitigation: The retained hedgerows will be protected as necessary during the preparation and construction works by the use of appropriate protective fencing around their root protection zones.

The retained hedgerows will, where appropriate be bolstered with additional planting of native species to enhance their structure and increase their species richness. In addition, they will be brought under an ecologically led programme of management so as to ensure that their wildlife value is retained into the long term.

A sensitive lighting design will be employed to ensure light spill from the adjacent development onto the retained hedgerows is minimised so that their availability to support nocturnal wildlife is maintained.

New hedgerow planting will directly mitigate for the loss of existing hedgerows. New hedgerows will be planted using native species appropriate to the local context and

will mirror the species composition of existing hedgerows recorded in the survey work undertaken.

In addition areas of landscape planting will be created to enhance the opportunities for wildlife movement and habitat within the Environmental Impact Assessment Study Area in the form of corridors of suitable habitat in line with the Hedgerows Habitat Action Plan within the local Buckinghamshire and Milton Keynes BAP objective to maintain overall numbers of hedgerows within the county. In a number of cases the proposed open space network is seen to correlate with and bolster existing hedgerows such that the hedgerows will be retained in situ and further areas of complementary habitat created around them. This retention protects the native seed bank associated with the hedgerows and will facilitate the expansion of native species.

Following mitigation, residual impacts are **neutral** at the **local level** and of **no significance**.

7.6.22 Ponds: Seven ponds are present within the Environmental Impact Assessment Study Area, along with a further three located off-site adjacent to the Environmental Impact Assessment Study Area, which will be assessed in the off-site section below. Of these ponds four (P1, P2, P3 and P9) are ephemeral water bodies which hold little to no water year round and a further two (P7 and P8) are likely to remain only damp in the summer with little water present and accordingly are of low-moderate ecological value. The three remaining ponds (P4, P5 and P10) are of varying size and quality and to differing degrees offer open water and are of moderate to high ecological value. The proposals indicate that three ponds will be lost under the proposals, two of low-moderate ecological value and one of moderate to high ecological value.

7.6.23 Ponds are a UK and local BAP habitat, as a result of significant declines in numbers of ponds over the last 25 years. As such careful consideration has been given to this BAP habitat in both the master-planning and mitigation of the development proposals for the Environmental Impact Assessment Study Area.

Impacts: Ponds **P1**, **P2**, **P3** and **P4** will be lost under the proposals. Ponds **P7**, **P8** and **P10** are retained within areas of open space network. Ponds **P5**, **P6** and **P9** are situated off-site and will be assessed in the off-site section below.

Pond **P1**, **P2** and **P3** are ephemeral in nature and are of little ecological value. Pond **P4** supports a good amount of open water although it was recorded to be devoid of aquatic and emergent vegetation and the banks are somewhat poached by horses.

P8 and **P10** will remain unaffected by development at the Environmental Impact Assessment Study Area as they are well separated from the built form development proposals by the areas of open space in which they are set. However, as these are located in the areas of proposed landscape works and accordingly, there is the potential for laden silts or other contaminants to enter these ponds during construction works in the vicinity of the open space, landscaping or planting.

Pond **P7** is located between two areas of proposed development albeit within an area of open space network, and is therefore more likely to suffer some adverse drainage due to possible changes to the hydrological input of the surrounding land affected by the proposed road and the accumulation of possible pollutants from run off during the construction and operational phase.

Impacts are **negative** at the **local level** and of **moderate - high significance**.

Mitigation: A construction environmental management plan will be drawn up which will include an engineering solution to safeguard the retained ponds **P7**, **P8** and **P10** along with the off-site ponds **P5** and **P6** from laden silts and pollutants which could

potentially enter during the construction and operational phases. An engineering solution will also be implemented to ensure that hydrological inputs to the ponds remain unaltered following the construction of the proposals.

The proposals include the creation of a number of ponds in north and south of the development. Approximately 5 ponds are proposed in the south of the Environmental Impact Assessment Study Area, set within areas of informal parkland. A further 9 ponds are proposed along the north of the Environmental Impact Assessment Study Area and along WC3, the extension of Loughton Brook Linear Park. As such, 4 ponds are being lost due to proposed development and 14 are being created.

Ecologically led pond creation, planting regimes and management plans will ensure that the ponds are of benefit to wildlife and biodiversity within the Environmental Impact Assessment Study Area and will also help towards the UK and Local BAP targets for reversing decline in numbers of ponds. Furthermore the local hydrology and topography has been carefully considered to inform the siting of the ponds, such that the majority will retain water for the majority of the year and so provide a continual habitat throughout the year.

The profile of the ponds will be carefully considered to create a range of depths, and variable draw-down zones. These will be planted with a carefully selected community of species so as to create and enable a species rich aquatic and emergent plant community to develop. This will support a number invertebrate fauna which in turn will support a number of reptile, amphibian, bird and mammal species, providing not only a benefit in terms of the number of ponds, but also for a number of animals.

Following mitigation, residual impacts **positive** at the **local level** and of **moderate significance**.

7.6.24 Watercourses and Ditches: Of the three watercourses present within the Environmental Impact Assessment Study Area, only one watercourse WC3 was recorded to carry a moderate flow of water year round and forms a notable wildlife corridor, and accordingly is considered to be of moderate to high local ecological value. By contrast, the other two watercourses present within the Environmental Impact Assessment Study Area, WC1 and WC2 were recorded to be of low ecological value at local level. A further watercourse is located off-site and is discussed in the off-site section below.

Impacts: WC3 is retained under the proposed scheme.

However, the potential remains for the proposals to affect WC1 (and the other more minor watercourses) directly and indirectly in respect of built form development, highways alterations at Bottledump roundabout, along Whaddon Road and through laden silts and other contaminants entering the watercourse through surface flows resulting from landscaping and construction works.

The proposals also have the potential to lead to alterations to the hydrological inputs to the watercourses and ditches and in turn the flows within the channels.

Impacts are **negative** at the **local level** and of **moderate significance**.

Mitigation: An environmental construction management plan and engineering method statement will be worked up and implemented in order to safeguard the watercourses from pollutants which could potentially enter the watercourses during the construction phase.

An engineering solution will also be implemented so as to ensure that run-off remains at green field rates so as to ensure that the hydrological inputs to the watercourses remain unaltered.

In addition, the mitigation will seek to enhance not only the watercourse itself through a selected clearance and opening programme and re-profiling of the banks where necessary, but also by enhancing the terrestrial habitat surrounding the watercourse. Under the proposals the watercourse will become an extension of Loughton Brook Linear Park, part of Milton Keynes Wetlands Corridor network. The provision of dedicated open space on both sides of watercourse WC3 and the creation of an Eco/Wildlife Park along the northern reach will ensure an ecologically led management plan is implemented and maintained in this area. This will lead to the enhancement and benefit of not only the brook itself, through in part the removal of facilities such as the Pearce Recycling centre, but also the surrounding environment to the benefit of a number of botanical and faunal species. The creation of a number of off-line ponds, as part of the proposals will also seek to expand the aquatic environment, enabling the establishment of complementary aquatic faunal assemblages to occur. The overall ecological setting of WC3 will improve and this environment will link directly to Broadway and Thrift Woods CWS, other on-site areas of Open Space and the Milton Keynes Wetland Corridor Network.

Following mitigation, residual impacts are **positive** at the **local level** and of **moderate - major significance**.

7.6.25 **Buildings and Hardstanding:** The majority of the built form within the Environmental Impact Assessment Study Area is of limited ecological interest. The majority of buildings offer negligible potential habitat for roosting bats, although building B10 Weasels Lodge was recorded to be of a construction type which can potentially support roosting bat species, although upon further survey work recorded that building B10 does not support roosting bats.

7.6.26 The assessment of the value of any built form or hardstanding for faunal species is discussed below at the faunal section with the results of specific survey work

undertaken on building B10 in respect of bats discussed further in the bat section within the Faunal section.

7.6.27 The majority of the buildings are considered to be of low value at the local level in respect of opportunities afforded to wildlife.

7.6.28 The areas of hardstanding within the Environmental Impact Assessment Study Area are considered to be of limited ecological interest and of low importance at the local level.

Impacts: All the buildings – including those as the current Pearce Recycling site all agricultural barns and outbuildings and Weasel Lodge - will be demolished as part of the proposals. Potential impacts in respect of fauna, namely bats and birds, are discussed in the relevant sections below. The buildings located within the wider site area, but not included within the Environmental Impact Assessment Study Area itself will be retained and will be unaffected by the proposals.

The majority of the hardstanding will be lost under the proposals.

Impacts are at the **local level** and of **no significance**.

Mitigation: No mitigation is required for the loss of the buildings. In any event, built form habitat will continue to be represented at the Environmental Impact Assessment Study Area in the form of the buildings created as part of the development.

No mitigation is required for the loss of the hardstanding. In any event, hardstanding will continue to be represented at the Environmental Impact Assessment Study Area in the form of access roads and pathways following the completion of the development.

7.6.29 **Trees:** Standard trees are predominantly located within the hedgerows associated with the field boundaries and along either bank of watercourse WC3 and either side of Weasels Lane. The individual mature trees are likely to be of moderate local value, while the tree lines along watercourse WC3 and either side of Weasels Lane are of high ecological value at the local level.

Impacts: The majority of the trees lines, including: those along watercourse WC3, Weasels Lane and south of the A421 are to be retained. However, a number of trees will inevitably be lost where hedgerows are to be removed to facilitate the built form of development, highways, roads and footpaths. However, the exact numbers to be lost to the proposals depends on the finer details of the proposals and residential layout and how tree protection measures can be implemented. It is likely that the use of such phased tree protection measures will limit losses to the absolute minimum.

In addition, the potential exists for indirect impacts to occur on retained trees and their root systems during each element of the 25 – 35 year construction stage.

Impacts are **negative** at the **local level** and of **moderate significance**.

Mitigation: In order to safeguard any of the retained trees, if any construction work is required in their vicinity tree protection fencing will be erected to British Standard BS5837:2005 around their root protection zones.

In addition, as part of the landscaping scheme, to compensate for losses of trees, a substantial number of new trees will be planted this will include native species, which will, over time, provide a net gain over the existing situation. In addition, planting will bolster and extend the existing wildlife corridors within the Environmental Impact Assessment Study Area, in addition to providing further open space network linkages

creating a web for wildlife to traverse the Environmental Impact Assessment Study Area of higher ecological value than isolated trees or limited ecological corridors.

Following mitigation, residual impacts are **positive** at the **local level** and of **minor significance**.

Impacts on Habitats not within the Environmental Impact Assessment Study Area

7.6.30 A number of habitats of ecological value are present off-site adjacent to the Environmental Impact Assessment Study Area boundary including unimproved grassland, ponds, watercourse, scattered scrub, maturing amenity planting/woodland and buildings and hardstanding.

7.6.31 **Unimproved Grassland:** An area of unimproved grassland has colonised the former railway sidings located to the south of the Environmental Impact Assessment Study Area. The grassland is a non-statutory designation, 'Railway Siding to the east of Salden Wood' LWS. This grassland supported a number of herb species forming a botanical assemblage of some interest and is considered to be of moderate-high value at the local/county level, although this may have been affected by site preparation works for the preliminary engineering testing by the East West Rail Consortium in 2009.

Impacts: The off-site unimproved grassland will not be directly affected by the proposals but may have been and is likely to continue to be affected by the works to reopen the East West rail link. However, the remedial engineering work is outside the scope of this proposal and as such is not directly related to the proposed construction and post-construction phases of Salden Chase.

Impacts from this development are **negative** at the **local - county level** and of **low significance**.

Mitigation: No works are proposed by the Salden Chase Consortium in this off-site location.

If the railway line is not opened for a period of time then the likelihood of increased access / visitor pressure to the unimproved grassland BNS, is reduced due to the provision of a variety of dedicated Open Space areas throughout the Environmental Impact Assessment Study Area, both for informal walking and structured play, such that it is less likely that the unimproved grassland would appeal as illicit recreational space.

Following mitigation, residual impacts caused by this development are at the **local-county level** and of **no significance**.

7.6.32 **Ponds:** Three ponds are present off-site, adjacent to the Environmental Impact Assessment Study Area, of varying ecological value. Pond P5 is a small amenity garden pond which supports non-native species. Pond P6 is located to the south of the A421 in the vicinity of Bottledump roundabout and supports varying degrees of aquatic and emergent vegetation and was recorded to support Great Crested Newt. Pond P9 is set within a grassy depression within a paddock and is ephemeral in nature, holding water only during wetter seasons. However, this pond was recorded to support Great Crested Newt. Accordingly, pond P5 is considered to be of low ecological value while pond P6 and P9 are of moderate – high ecological value due to the presence of a European Protected Species. Both of these ponds will be retained under the proposals.

7.6.33 Ponds are a UK and local BAP habitat, as a result of significant decline in numbers of ponds over the last 25 years. As such careful consideration will be given to this BAP habitat in both the master-planning and mitigation of the development proposals for

the Environmental Impact Assessment Study Area, although none of the off-site ponds will be lost or directly affected by the proposals.

Impacts: Ponds **P5**, **P6** and **P9** will remain unaffected by the development within the Environmental Impact Assessment Study Area as they are well separated from the proposals.

Pond **P5** is set within an area of off-site built form and is a butyl lined pond and accordingly is unlikely to be indirectly affected by the development.

Pond **P6** is located within the vicinity of Bottledump roundabout in an area of semi-improved grassland and maturing amenity planting. Pond P6 will not be directly affected by the development proposals, although there remains some slight potential for minor impacts in the form of laden silts, contaminants other or polluted run off entering the ponds during the construction and post-construction phase, partially during any road enhancement works associated with Bottledump roundabout.

Pond **P9** is well separated from any built form, although due to topography there is some slight potential for minor impacts in the form of laden silts, contaminants other or polluted run off entering the ponds during the construction and post-construction phase, although this is limited given the distance of the pond from any built form footprint.

In addition, due to the proposed built form on higher land, the ponds could suffer some adverse drainage due to possible changes to the hydrological input of the surrounding land affected by the proposed built form, this could affect the suitability of pond P9 to support the EPS Great Crested Newt.

Impacts are **negative** at the **local level** and of **low significance**.

Mitigation: A construction environmental management plan will be drawn up which will include an engineering solution to safeguard ponds P5, P6 and P9 from laden silts and pollutants which could potentially enter during the construction and operational phases.

An engineering solution will also be implemented to ensure that hydrological inputs to the ponds remain unaltered following the construction of the proposals, such that the pond continues to offer potential to support Great Crested Newt.

Following mitigation, residual impacts at the **local level** and of **no significance**.

7.6.34 **Watercourse:** Watercourse WC4 is relatively small in nature, and may not carry a continuous flow of water. Little aquatic or emergent vegetation was recorded and the watercourse is overshadowed by adjacent scrub and young trees such that the watercourse is considered to be of low ecological value at the local level.

Impacts: WC4 is retained and will be unaffected by the proposed scheme, although due to adjacent landscaping works, there is the potential for the proposals indirectly through laden silts and other contaminants entering the watercourse through surface flows.

The proposals also have the potential to lead to alterations to the hydrological inputs to the watercourses and ditches and in turn the flows within the channels.

Impacts are **negative** at the **local level** and of **low significance**.

Mitigation: An environmental construction management plan and engineering method statement will be worked up and implemented in order to safeguard the watercourse from pollutants which could potentially enter the watercourse during the construction phase.

An engineering solution will also be implemented so as to ensure that run-off remains at green field rates so as to ensure that the hydrological inputs to the watercourse remain unaltered.

Following mitigation, residual impacts are at the **local level** and of **no significance**

7.6.35 **Scattered scrub:** Off-site scattered scrub is present within the unimproved grassland forming a mosaic habitat, The scrub itself is of minimal ecological interest, being comprised of common and widespread species and is therefore considered to be of low value at the local level.

Impacts: The off-site scattered scrub will not be directly affected by the proposals but has been cut back as part of the work recently undertaken by the East West Rail Consortium.

Impacts from the Salden Chase proposal are at the **local level** and of **no significance**.

Mitigation: No mitigation is required.

7.6.36 **Woodland / Maturing Amenity Planting:** Areas of woodland / maturing amenity planting of variable quality are located adjacent to the A421. The majority of the woodland / maturing amenity planting within the Environmental Impact Assessment

Study Area will be retained under the proposals, and will not be directly affected by the proposals.

Impacts: There is potential for damage to be caused to the trees and their roots during site clearance and construction works, particularly associated with highways works in the vicinity of Bottledump Roundabout. The potential is also present for new lighting to affect nocturnal species and the potential exists for minor impacts to take place in the form of run off entering the woodland/maturing amenity planting during the construction and post-construction phase.

Impacts are **negative** at the **local level** and of **low significance**.

Mitigation: The trees and their associated root protection zones adjacent to the areas of proposed development will be protected by appropriate tree protection fencing erected to British Standards.

A construction environmental management plan and an engineering method statement will be worked up and implemented in order to safeguard the woodland areas from pollutants which could potentially enter these habitats during the construction phase.

Appropriate lighting will be employed to ensure light spill from the adjacent development onto the areas of retained woodlands is minimised so that they remain available to nocturnal wildlife.

Following mitigation, residual impacts are at the **local level** and of **no significance**.

Impacts on Fauna of Principal Importance

7.6.37 A number of species listed as of Principal Importance listed under the NERC Act 2006 are present within the Environmental Impact Assessment Study Area including

Soprano Pipistrelle Bat, Brown Hare, Adder, Grass Snake, Great Crested Newt and the bird species Skylark, Yellowhammer, House Sparrow, Cuckoo, Dunnock, Starling, Linnet, Bullfinch, Song Thrush and Reed Bunting.

Mitigation Measures for Faunal Species of Principal Importance: The mitigation measures for these species are discussed separately in the relevant sections, (6.7.3, 6.7.14, 6.7.16, 6.7.20 and 6.7.25) below.

Impacts on Fauna within the Environmental Impact Assessment Study Area

- 7.7.1 Badger: The Environmental Impact Assessment Study Area is of low - moderate value at the local level for Badgers. Four setts were recorded within the Environmental Impact Assessment Study Area, which are either considered to be of limited importance to Badgers or are disused/no longer present. In addition, a Badger was seen during evening survey work, and several Badger latrines and a number of pathways were recorded across the site.
- 7.7.2 Given the size of the Environmental Impact Assessment Study Area the recorded activity is relatively limited suggesting that the majority of the Environmental Impact Assessment Study Area is not regularly used by Badger, with the main use of the Environmental Impact Assessment Study Area is likely focussed on commuting and to a lesser extent foraging, in terms of the permanent grassland and seasonally, in terms of the arable.

Impacts: No active Badger setts lie within or adjacent to the main development area in the centre of the Environmental Impact Assessment Study Area.

Sett S1 within the centre of the Environmental Impact Assessment Study Area is disused to the extent that it is no longer present. S2, S3 and S4 are all situated at the

extremities of the Environmental Impact Assessment Study Area, located off-site or adjacent to the Environmental Impact Assessment Study Area boundary and will not be directly affected by the proposals.

The proposals will lead to the loss of large areas of arable land within the Environmental Impact Assessment Study Area and a subsequent loss of potential foraging areas.

The presence of a large construction site within the vicinity of the main sett will introduce potential hazards for Badgers such as the presence of open trenches, chemicals etc.

There is the potential for increased disturbance under the proposals due to the introduction of public access in areas of proposed open space in the vicinity of the setts.

Landscaping construction works will take place in the vicinity of sett S3 and Sett S4. Accordingly, there is the potential for disturbance impacts to arise on these setts during this work.

Impacts are **negative** at the **local level** and of **low significance**.

Mitigation: Substantial new areas of high value foraging in the form of a large area of public open space will be created throughout the Environmental Impact Assessment Study Area, particularly adjacent to setts S2, S3 and S4. This will take the form of informal open space including Informal Parkland, Playing Fields and School Playing fields. The informal parkland will be comprised of a matrix of wildflower grassland with pockets of scrub and new tree planting in the form of copses with areas of close mown amenity grassland also present. The landscaped elements will include fruit bearing species such as Crab Apple and Cherry so as to provide an enhanced

foraging resource for the social group. It is considered that the replacement of nearby arable habitats with this resource coupled with its extent and management is such that it is likely to lead to a net gain in foraging resources for the social group.

General site safeguards will be undertaken to ensure that the presence of a large construction site in the vicinity of the social group does not represent a significant hazard. For example:

- any trenches or deep pits within the Environmental Impact Assessment Study Area that are to be left open overnight will be provided with a means of escape should a Badger enter;
- any trenches/pits will be inspected each morning to ensure no Badgers have become trapped overnight; and
- the storage of topsoil or other 'soft' building materials on site will be given careful consideration. Badgers will readily adopt such mounds as setts. So as to avoid the adoption of any mounds, these will be kept to a minimum and any essential mounds subject to daily inspections by the Site manager (or nightly patrols if 24 hour security is present on site) with consideration given to temporarily fencing any such mounds to exclude Badgers.

The storage of any chemicals on site will be well away from the setts and contained in such a way that they cannot be accessed or knocked over by any roaming Badgers.

To ensure that disturbance from public access to the area in the vicinity of setts S2, 3 and 4 is minimised, new planting of thorn bearing species will be introduced into the vicinity of these setts. This will ensure that access to the setts themselves is largely prevented and hence will safeguard the Badgers from excessive levels of disturbance.

The landscaping works to create the Informal Parkland or ponds may need to be undertaken under a licence from Natural England should it be likely that the construction process would disturb or damage any setts. General site safeguards (see above) will also be undertaken to ensure that the presence of construction activities in the vicinity of the social group do not represent a significant hazard.

Following mitigation, residual impacts are at the **local level** and of **no significance**.

7.7.3 **Bats:** The majority of the buildings within the Environmental Impact Assessment Study Area are considered to be of negligible to low value to roosting bats. Two buildings, B10 and B13 were recorded to be potentially suitable to support roosting bats, although no bats were recorded during survey work undertaken. A number of the more mature trees located within the Environmental Impact Assessment Study Area offer some potential to support roosting bats, although no bats were recorded emerging from a sample of these trees during the specific survey work undertaken. This suggests that the trees surveyed within the Environmental Impact Assessment Study Area are unlikely to regularly support tree roosting bat species, although occasional use of trees within the Environmental Impact Assessment Study Area cannot be ruled out due to the transitory nature of tree roosting bat species.

7.7.4 In terms of foraging opportunities, much of the Environmental Impact Assessment Study Area is unlikely to be favoured by foraging bats. However, some potential opportunities for bats are present largely in the form of the trees, hedgerows and boundary features, Weasels Lane, watercourses and ponds. It is considered that the large open intensively farmed fields are of low local value to foraging bats, although the identified linear features form corridors or habitats of moderate value at the local level.

7.7.5 Therefore, overall the Environmental Impact Assessment Study Area is considered to be of low value at the local level for roosting bats and of moderate value at the local level for foraging bats.

7.7.6 The proposed development will involve the demolition of the buildings within the Environmental Impact Assessment Study Area, including B10 and B13, which have been identified as being of low value to bats and do not support roosts under the definition within the 'Guidance Document on the strict protection of animal species of Community Interest under the Habitats Directive 92/44/EEC' February 2007. No evidence for the presence of roosting bats was recorded from these buildings, and as such, at present, a licence will not be required from Natural England to permit the proposed operations.

Impacts: Loss of buildings and trees which offer potential to support roosting bats, although no evidence or presence of roosting bats has been recorded in survey work undertaken to date.

Loss of foraging and commuting features including hedgerows trees, ponds and watercourses.

Should light spill from the proposals illuminate the foraging and commuting features including hedgerows, trees and woodland during the construction or post-construction phases, this could adversely affect usage of affected areas by foraging bats. By contrast, certain common bat species utilise lights as a foraging focus for insects attracted to lights, such that any potential negative effects on some species may be balanced by positive effects on other species.

Impacts are at the **local level** and of **low-moderate significance**.

Mitigation: A large number of hedgerows and trees will be planted under the landscape scheme creating additional linear navigational features. This will compensate for the loss of existing hedgerows and trees.

The removal of land from an intensive agricultural regime and the ceasing of the use of pesticides will increase biomass of invertebrates present by many orders of magnitude. This is likely to have substantial beneficial effects on foraging bats. These benefits will be further multiplied by the introduction of new linear wildlife and open space corridors which will provide enhanced foraging routes.

New opportunities for roosting bats will be established at the Environmental Impact Assessment Study Area by the provision of a number of bat boxes on suitable retained trees as well as through the provision of artificial roosting structures and access points in new buildings.

Given the known sensitivity of bats, to certain forms of lighting, the careful and considered design of the lighting for the new development is an essential component of the mitigation scheme. As such, a lighting scheme specifically designed to protect the functional viability of the foraging / commuting features, in the form of key hedgerows and woodland blocks, from excessive lighting will be considered at the reserved matters stage of detailing.

Following mitigation, residual impacts are positive at the **local level** and of **minor significance**.

7.7.7 **Otter:** The majority of the watercourses within the Environmental Impact Assessment Study Area offer limited opportunities for Otter. However, WC3 does offer some potential to act as a commuting corridor for Otter although no evidence of the use of the watercourse by Otters were found during specific surveys.

7.7.8 Potential impacts and relevant mitigation to safeguard WC3 and ensure that it continues to be available for use by Otters are set out under the heading 'Watercourses and Ditches' above.

7.7.9 **Water Vole:** No evidence for the presence of Water Voles was recorded from the aquatic habitats within the Environmental Impact Assessment Study Area and this species does not, therefore represent a constraint on any proposals at the Environmental Impact Assessment Study Area. As such, there are no relevant impacts for this species.

7.7.10 Nonetheless, potential impacts and relevant mitigation to safeguard WC3 and ensure that it continues to be available for use by Water Voles, should they colonise, are set out under the heading 'Watercourses and Ditches' above.

7.7.11 **Brown Hare:** Although the grassland areas that make up much of the Environmental Impact Assessment Study Area appear suitable to support Brown Hare, only a small number of sightings of Brown Hare were recorded at the Environmental Impact Assessment Study Area during the survey work between 2004 and 2008. As such, it is considered that the Environmental Impact Assessment Study Area does not support a large population of Brown Hare and hence is of low-moderate value for this species.

Impacts: Loss of grassland, arable and scrub habitat for foraging and resting.

Impacts are **negative** at the **local level** and of **minor-moderate significance**.

Mitigation: A matrix of new habitats in the form of new grassland and scrub planting across the Environmental Impact Assessment Study Area, and the creation of areas of open space will create new habitats for Brown Hare. However, these will be of a

more enclosed nature than this species typically favours and as such may not fully mitigate this impact

Following mitigation, residual impacts are **negative** at the **local level** and of **minor significance**.

7.7.12 **Other Mammals:** A number of common mammal species such as Fox, Field Vole, Rabbit and Deer may be temporarily displaced during construction but will readily recolonise upon the cessation of works. As such, there are no relevant impacts.

7.7.13 **Birds:** Overall, a moderate complement of 54 species typical of intensively managed farmland in the area was recorded. Particular concentrations of nesting birds were seen to be associated with the hedgerows across the Environmental Impact Assessment Study Area including along Weasels Lane, the mature vegetation associated with watercourse WC3 and around the existing buildings. In contrast the open arable fields provide markedly fewer opportunities save for ground nesting species at times when the crop is at a short height.

7.7.14 The UK Species of Principal Importance (and UK BAP species) Reed Bunting, Dunnock, Bullfinch, House Sparrow, Song Thrush, Starling, Linnet, Skylark and Yellowhammer were recorded breeding within the Environmental Impact Assessment Study Area.

7.7.15 The surveys recorded moderate populations of the farmland bird species Skylark and Yellowhammer. Skylark showed a distribution of relatively regular spacing across the more open, larger fields within the south, east and west of the Environmental Impact Assessment Study Area, and were not limited to one particular habitat. In addition, their presence was not excluded by arable winter cropping. Yellowhammer were also distributed relatively widely across the Environmental Impact Assessment Study Area, being recorded in the north, west and south west, but not in the large open

arable fields in the south-east. Small numbers of Linnet were recorded throughout the Environmental Impact Assessment Study Area, predominantly associated with hedgerows, as were Dunnock, Bullfinch and Song Thrush, which were particularly associated with hedgerows bordering Weasel's Lane. Small numbers of Reed Bunting, House Sparrow and Starling were located across the Environmental Impact Assessment Study Area, with House Sparrow associated with the buildings. Seven RSPB Red list species were recorded within the Environmental Impact Assessment Study Area and a number of local BAP species.

7.7.16 Overall, the Environmental Impact Assessment Study Area is not considered to be of special ornithological interest, with the bird assemblage and the majority of the species populations being of low-moderate value at the local level. However, the populations of Skylark and Yellowhammer are considered to be of moderate value at the local level.

Impacts: The arable and grassland habitats offer support for ground nesting birds. Approximately 16-21 breeding pairs of Skylark (UK BAP/Species of Principal Importance in England and RSPB Red list species) were recorded in 2008, the current habitat of which, arable farmland and grassland, will be lost to the proposals. It is possible that some Skylark may be retained through pairs colonising the open space, but this is only likely in low numbers.

Approximately 11 breeding pairs of Yellowhammer (UK BAP/Species of Principal Importance in England and RSPB Red list species) were recorded in 2008, the current habitat of which, arable farmland, will be lost to the proposals. It is possible that some Yellowhammer may be retained through pairs colonising the open space at the periphery, but this is only likely in low numbers.

It is possible that some Linnet (UK BAP/Species of Principal Importance in England and RSPB Red list species) may be retained through pairs colonising the open space at the periphery, but this is only likely in low numbers.

The UK BAP/Species of Principal Importance in England and RSPB Amber list species Reed Bunting will suffer only minor temporary effects from the development and will likely be able to benefit from swale and reedbed planting.

The UK BAP/Species of Principal Importance in England and RSPB Red list species Starling, House Sparrow and Song Thrush will suffer only minor temporary effects from the development and will likely be able to benefit from the increased hedgerow and shrub planting, along with the wider areas of informal grassland, and particularly in the case of House Sparrow from further nesting opportunities provided by the proposed residential development.

The UK BAP/Species of Principal Importance in England and RSPB Amber list species Bullfinch and Dunnock will suffer only minor temporary effects from the development and will likely be able to benefit from the increased hedgerow and shrub planting, along with the wider areas of informal grassland.

Overall, it is likely that the red-listed nesting farmland birds of Skylark, Yellow Hammer and Linnet will be lost from the areas of built form development with mitigation often being difficult to achieve for these species within a development context. Other red-list breeding species (e.g. House Sparrow, Song Thrush, Bullfinch, Reed Bunting and Starling) are likely to adapt to the urban environment.

The majority of the trees, hedgerows and other foci of bird activity across the Environmental Impact Assessment Study Area, including Weasel's Lane will be retained under the proposals, with any losses being limited in the context of the Environmental Impact Assessment Study Area and of a temporary nature due to the

proposed landscaping. House Sparrow, recorded to be associated with the buildings will be temporarily affected by a loss of habitat in the form of the buildings.

There is the potential for minor adverse impacts on birds to occur if any nesting habitat is cleared during the nesting season.

Impacts are **negative** at the **local level** and of **moderate significance**.

Mitigation: Areas of open grassland, landscape planting and a variety of aquatic habitats including ponds, swales and reed beds will be created throughout the proposals, in the form of the linear extension to Loughton Brook and the informal Parkland. These habitats will provide a diverse range of potential foraging and breeding habitats, which may attract new breeding species to the Environmental Impact Assessment Study Area as well as create new opportunities for red-list breeders currently present such as Starling, Linnet, Reed-bunting, Bullfinch and Song Thrush while with the correct management Skylark may even recolonise some areas. Overall, a net gain of breeding birds would be realised, albeit the species complement would be slightly different with a reduction in farmland species.

New areas of potential nesting habitat will be provided as part of the landscaping for the development and a range of bird boxes will be installed on retained trees where appropriate so as to provide additional nesting sites.

Areas of potential nesting habitat will only be cleared outside of the bird nesting season (March – July/August) or following the negative result of a nesting bird survey conducted by a suitably qualified ecologist, so as to minimise impacts on birds.

Following mitigation, residual impacts are **negative** at the **local level** and of **minor significance**.

7.7.17 **Amphibians:** Survey work recorded the presence of a small population of Great Crested Newt within the off-site ponds P6 and P9. No other ponds within or adjacent to the Environmental Impact Assessment Study Area were recorded to support Great Crested Newt. These ponds are relatively isolated from other populations of Great Crested Newts, due to the lack of ponds supporting populations within an appropriate distance. Accordingly, these ponds themselves are of relatively high local conservation importance to this species due to their isolated nature, while they are also somewhat vulnerable in nature. Great Crested Newt will also make use of terrestrial habitat within the vicinity of its breeding ponds, with most activity concentrated within 250m of the pond. Pond P6 is situated within terrestrial habitats of relatively high value in the form of semi-improved grassland, maturing amenity planting/woodland and hedgerows bounding fields within approximately 100m. The arable and grazed grassland fields within approximately 250m of pond P6 is of low value for the species whilst the A421 forms a barrier to movement to the north and by Whaddon Road to the south-west, albeit the barrier effect is reduced by the presence of an underpass under the A421. Similarly the scrub and hedgerows within 100m of pond P6 are of high value for Great Crested Newts while the grazed grassland is of low value. Overall, the Environmental Impact Assessment Study Area is considered to be of moderate local value for this species.

7.7.18 The proposed development will involve construction works within approximately 50m of Pond P6 and within approximately 220m of pond P9 utilised by Great Crested Newts, a European Protected Species (EPS). As such, a licence will be required from Natural England to permit the proposed operations. In addition, the Local Planning Authority (LPA) has a legal duty under Regulation 3(4) of the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in relation to EPS, namely that when determining a planning application for a development which has an impact on EPS, the LPA must take into account the three derogation tests contained within the

Habitats Directive 1992 at the planning stage. The discussion below sets out how the proposed development meets these three tests.

7.7.19 Imperative Reasons of Overriding Public Interest. The proposals are for mixed-use residential development of the area, the purpose of which is to contribute to meeting the local, regional and national need for new housing provision. The government has highlighted the need for increased provision of housing in response to population growth and other demographic changes. The government's Housing Green Paper entitled 'Homes for the future: more affordable, more sustainable - Housing Green Paper' (July 2007) states that "the level of housing supply needs to increase over time towards this target and we believe that a total of three million new homes are needed by 2020, two million of them by 2016." This is reflected in the South East Plan, which identifies the Environmental Impact Assessment Study Area as Milton Keynes South West Strategic Development Area (SDA), that is as one of a number of foci for strategic housing development (Policy CS1). Accordingly, it is concluded that the proposals for development of the Environmental Impact Assessment Study Area for new housing can be considered to meet the test of imperative reasons of 'overriding public interest'.

7.7.20 No Satisfactory Alternative. The Environmental Impact Assessment Study Area has been identified in the South East Plan as one of a number of foci for strategic housing development. The Environmental Impact Assessment Study Area forms part of the urban expansion of Milton Keynes and serves to accommodate a percentage of Buckinghamshire's and Aylesbury Vales' government Housing allocation. The 'do nothing' option of not developing the Environmental Impact Assessment Study Area would not provide a satisfactory alternative to the proposals, since the objective of providing new housing would not be achieved. It would also prevent the best use of land, thereby increasing pressure on other sites which may be of higher wildlife value. Therefore it is considered that the proposals meet the test of 'no satisfactory alternative'.

7.7.21 *Favourable Conservation Status of the species must be maintained.* Impacts from the proposals are of moderate to high significance at the local level. However, following implementation of mitigation it is considered that the conservation status of Great Crested Newt will be enhanced and hence the test of 'favourable conservation status' met. This is considered in more detail in the following assessment of impacts and the mitigation proposals described below.

Impacts: Pond P6 which was recorded to support Great Crested Newts is located on land controlled by Milton Keynes Council adjacent to Bottledump roundabout and the A421. Under the proposals, highways alterations are proposed at this junction. In addition, built form development is proposed within 50m of pond P6, albeit on land which is currently arable and of low value to Great Crested Newts. Accordingly the majority of the habitat of high value to Great Crested Newts within 100m of the pond P6 and pond P9, the semi-improved grassland and maturing amenity planting/woodland is unlikely to be affected by the development. Hedgerows within the vicinity of the ponds, up to 200m are also likely to be largely unaffected. Losses are likely to be afforded to low value arable habitats, arable and grassland within 250m of P6. Habitats on western side of Whaddon Road are less likely to be utilised due to the barrier effect the road poses to Great Crested Newt movement. Overall the immediate area around P6 will be retained un-affected by the highways works and the built form construction, although works will occur potentially approximately 50m from the pond. The loss of the terrestrial habitat associated with pond P6 (which is within the Salden Chase site area) when assessed against the Rapid Risk Assessment in The Great Crested Newt Licence Application Form (WML-A12-L Natural England) indicates this is likely to result in an Amber scale impact on Great Crested Newt, indicating an offence (unless the work is subject to appropriate licensing) is likely to be caused by the proposed actions.

There is the potential for isolation of populations due to the construction of built form residential development between the two ponds P6 and P9 although there is likely little interchange between these populations at present. However, under the proposals ponds P7, P8 and P10 will be retained within a strip of suitable terrestrial habitat, which will ensure connective habitat between ponds P7, P8 and P10 and Pond P6, the off-site ponds P6 and P9 which were recorded to support Great Crested Newts.

There is potential for Great Crested Newt to be adversely affected by the construction phase of the proposed development through loss of habitat and through injury or mortality caused by use of machinery and other construction activities.

The introduction of residential development into the vicinity of ponds may lead to the introduction of fish by new residents.

In addition, indirect adverse effects in the form of pollution and alterations to hydrological inputs may occur during the construction and operational phases.

Impacts are **negative** at the **local level** and of **moderate significance**.

Mitigation: In order to facilitate development works in the vicinity of pond P2 and ditch D2 a detailed mitigation strategy will be worked up and a licence obtained from Natural England, to safeguard the species. Licences are only normally granted once a site is in receipt of full planning permission, or where planning certainty can be demonstrated in respect of the future safeguarding of the Great Crested Newt population. A number of tests must be met for a licence to be issued including a key test, which requires any mitigation provided to ensure the 'maintenance of the species at a favourable conservation status'.

To meet this test, a capture and exclusion exercise under licence from Natural England will be undertaken within the suitable terrestrial habitat surrounding Pond P6 so as to ensure that the land is free of any Great Crested Newts prior to clearance and construction works.

Any minor losses to Great Crested Newt terrestrial habitat will be mitigated for by the creation of abundant areas of open space and by the replacement of low value arable and grazed grassland habitats with high value habitats in the form of the ecologically managed public open space. Abundant suitable terrestrial habitat (given only a very small population of Great Crested Newts is present) will remain available in the west of the Environmental Impact Assessment Study Area and will be accessible to dispersing and migrating Great Crested Newts via the existing habitat corridor of Watercourse WC3 which will be fully retained and enhanced as part of the extension of the Loughton Brook Linear Corridor, connecting Pond P6, P7, P10, P8 and P9. The on-site terrestrial habitats present will be brought into a favourable ecological management regime so that their quality will be significantly enhanced and maintained over the long term. In addition, 6 new waterbodies will be created under the proposals so as to provide a significantly increased breeding resource for this species, suitable to support a much expanded and fully viable metapopulation.

Consideration will be given to the hard landscaping and drainage systems which will be incorporated within the proposed development in the vicinity of ponds and terrestrial habitat such that gully pots, which are known to cause high amphibian mortality, are avoided where necessary and amphibian friendly features are incorporated such as through the use of permeable paving or similar measures.

An engineering solution will be implemented in order to address any issues of possible polluted run-off from the development, which may enter the waterbodies, and any adverse hydrological effects which may result in water level alterations.

The existing and proposed ponds will be managed under an ecologically led management regime. Local residents will be made aware of the Eco/Wildlife Park nature of the extension to Loughton Brook Linear Park and potential effects of residents depositing fish or litter in the ponds will be controlled and managed.

Overall, the current risk of extinction of the existing Great Crested Newt populations due to their isolation will be significantly reduced and a significant increase in the population is expected such that the test of 'maintenance of favourable conservation' status is substantially exceeded.

Following mitigation, residual impacts are **positive** at the **local level** and of **moderate significance**.

7.7.22 Reptiles: No reptiles were recorded during the specific survey work undertaken. Anecdotal reports from a local resident along Weasel's Lane indicate the presence of Grass Snake and Adder at very low numbers. These results indicate that the reptile population distribution is extremely localised and is limited to very small numbers of individuals

Impacts: Some loss and disturbance to reptile habitats will take place as scrub, tall ruderal and marginal habitats are removed. This is likely to cause the greatest impact in the south of the Environmental Impact Assessment Study Area, from whence the anecdotal records of reptiles originate. This area is proposed for Open Space, and as such impacts will be limited to landscaping or pond creation works.

Impacts are **negative** at the **local level** and of **minor significance**.

Mitigation: A watching brief for reptiles will be maintained during the clearance of scrub, tall ruderal and marginal habitats.

Extensive new areas of reptile habitat will be created under the proposals with large areas of wildflower grassland, hedgerows and pockets of scrub that will provide good conditions for this group.

New ponds will be created within the Environmental Impact Assessment Study Area which will provide excellent conditions and increase the quantity of habitat available for Grass Snakes.

Private gardens and areas of new allotments will provide a range of habitats to potentially support reptiles, in particular Slow Worms. The allotments are situated at either end of the southern Environmental Impact Assessment Study Area boundary, with a link between in the form of the offsite railway line allowing migration between these two areas. The south of the Environmental Impact Assessment Study Area, with the proposed informal parkland, ponds, allotments and the offsite railway line provides a range of habitats known to support reptiles.

Following mitigation, residual impacts are **positive** at the **local level** and of **moderate significance**.

7.7.23 **Invertebrates:** The Environmental Impact Assessment Study Area is expected to support an assemblage of common invertebrates although there is no evidence to indicate the presence of any rarer species.

7.7.24 The butterfly and moth species, which have previously been recorded to the south of the Environmental Impact Assessment Study Area, on the off-site former railway line, including Wood White, Dingy Skipper, Grizzled Skipper Figure of Eight, Black Hairstreak, Green Hairstreak and Small Copper will be un-affected by the development proposals

Impacts: Loss of some arable, grassland and scrub habitat for invertebrate species. In addition, habitats of relatively raised invertebrate potential, namely the aquatic habitats represented by the ponds P1, P2, P3 and P4 and watercourse WC1 will be lost under the proposals. However, habitats of relatively raised invertebrate potential, namely the aquatic habitats represented by the ponds P5, P6, P7, P8 P9 and P10 and watercourses WC2, WC3 and WC4 will remain unaffected.

Prior to mitigation, impacts are at the **local level** and of **no significance**.

Mitigation: No mitigation is required in respect of invertebrates. Nonetheless, new planting across the study area, and the creation of informal parkland, the extension to the Loughton Brook Linear Park, gardens, allotments and areas of public open space and numerous new ponds will create new habitats for invertebrate species. Moreover, the removal of the land from an intensive agricultural regime and the introduction of ecologically led management to the grassland and retained aquatic habitats will likely benefit invertebrate species.

Residual Impact Statement

7.7.25 The impact of the proposals on the adjacent non-statutory designations post mitigation is negative at the local to county level and is of minor significance. The residual impact relates to a possible increase in visitor pressure on the adjacent non-statutory designations, particularly 'Thrift and Broadway Wood' CWS, Railway Sidings to the East of Salden Wood LWS, and Railway Bank by Salden Wood LWS, Bridleway adjacent to Weasel's Lodge BNS. However, it is considered that the mitigation in the form of extensive areas of public open space, a wildlife / eco-park in the form of an extension to the Broughton Brook Linear Corridor, informal parkland and playing fields will provide substantially greater, in terms of both amenity value and area, recreational space provision than the adjacent non-statutory designations

such that it is likely that increases in visitor pressure will be very limited if to occur at all.

7.7.26 The impact of the proposals on the UK and local BAP species Brown Hare is negative at the local level and is of minor-moderate significance. Although the creation of the Eco/Wildlife Park, the extension to the Broughton Brook Linear Corridor and extensive areas of informal parkland are proposed, it is considered that this species is less likely to use these habitats due to their more enclosed nature and the increased prevalence of humans and dogs such that fewer Brown Hare are expected to recolonise or remain in the long term.

7.7.27 The impact of the proposals on a number of farmland bird species, particularly Skylark, Yellowhammer, along to a lesser extent Linnet are negative at local level and is of moderate significance. Although large areas of informal parkland and the Eco/Wildlife Park and extension to the Broughton Brook Linear Corridor are proposed, the more enclosed nature of these habitats is likely to be inherently less favourable for species such as Skylark and Yellowhammer which require wide open spaces. As such, although it is likely that a small numbers of pairs of Skylark and Yellowhammer, and slightly higher numbers of Linnet may re-colonise and remain at the Environmental Impact Assessment Study Area, the current populations are will not remain post development.

Cumulative and Interactive Effects

7.7.28 In addition to direct and indirect effects arising from the proposals which are assessed above, the potential of cumulative or interactive effects arising from the proposals when combined with other permitted development should be examined.

7.7.29 By definition such effects are only relevant in respect of un-mitigated residual effects arising from the proposals.

7.7.30 No significant cumulative effects are anticipated in respect of the designations discussed. However, some cumulative effects will occur in respect of the species discussed at section 6.8 albeit such development is planned and is taking place on allocated sites. Although some effects on declining farmland birds and Brown Hare will occur these are compensated for by a significant suite of enhancement measures that are described below. The net effect is that overall gains for biodiversity, including for birds, will be achieved, albeit the complement of species will alter to some degree.

Habitat Enhancements with particular focus on the Buckinghamshire and Milton Keynes BAP

7.7.31 **General Principles:** The general principle that has been followed in exploring potential ecological enhancements that could be implemented across the Environmental Impact Assessment Study Area has been to create a series of ecologically linked habitats of high local biodiversity value that, where possible, contribute to the aims and objectives of the Buckinghamshire and Milton Keynes Biodiversity Action Plan. The enhancements are shown at Plan 7.9 -1110/ECO9.

7.7.32 **Habitat Management.:** All new and retained habitats will be managed using ecological principles as part of the general maintenance regime so as to ensure their ecological interest is maintained over the long-term. Such management would follow horticultural good practice and include measures such as:

- avoiding use of pesticides/herbicides within areas of wildflower grassland area, ponds, watercourses, lakes or hedgerows;
- any major tree/shrub pruning or works should take place outside the bird nesting season (March - July inclusive);

- some of the arisings from any tree works should be used to create discrete log piles that will provide shelter for animals and deadwood habitat for saproxylic species; and
- allowing wildflower grassland to develop a tall sward height (so that seeds can be set) by infrequent annual cutting.

7.7.33 **Thrift and Broadway Wood CWS:** lies adjacent to the Environmental Impact Assessment Study Area. The woodland is a replanted mixed broadleaved and coniferous ancient woodland. An opportunity is present under the proposals to effectively extend the woodland habitats into the Environmental Impact Assessment Study Area. Broad open space provisions in the form of landscape buffers are present adjacent to the CWS and it is proposed in these areas to create new native wildflower grassland habitats, along with ponds and pockets of native tree and scrub planting so that this area will complement the habitats present in the adjacent designated sites. Furthermore the boundary between the CWS and the open space is proposed as Thrift and Broadway Wood Transitional Area.

7.7.34 Thrift and Broadway Wood Transitional Area will provide a dedicated transitional area or ecotone between the existing CWS woodland and the proposed open space. The current woodland edge is formed by an abrupt break in the trees and a track. An ecotone will provide a merging gradation of habitats between the woodland to the grassland of the eco park, with varying densities of tree and scrub planting including Blackthorn, along with understorey shrubs and pockets of grassland. In addition to softening the new Whaddon Chase woodland edge this will provide a range of microhabitats of varying thermal environments which are particularly favoured by invertebrates including butterflies such as the Buckinghamshire and Milton Keynes Local BAP species Black Hairstreak and White Admiral *Limenitis camilla*.

- 7.7.35 A major benefit to Thrift and Broadway Wood CWS and Salden Wood CWS is provided in the form of a wildlife corridor supporting substantial tree planting, along with grassland areas along the western boundary of the Environmental Impact Assessment Study Area (see Plan 7.9 -1110/ECO9). This corridor will serve to link the two areas of woodland, providing a corridor for faunal movement and a mechanism to help ensure the long term survival of local faunal populations, along with the potential for genetic mixing of flora pollen and seed banks.
- 7.7.36 These measures will effectively extend the nature conservation interests of these designations beyond their existing boundaries, while providing habitats for a further range of species.
- 7.7.37 **Native Tree and Shrub Planting:** Extensive areas of new tree and shrub planting will take place as part of the formation of substantial landscaped areas throughout the Environmental Impact Assessment Study Area. The planting will utilise native species to maximise its value for wildlife and will seek to both complement existing areas of woodland cover (e.g. Thrift and Broadway Wood CWS) and create new copses and linear corridors. The inclusion of native Black Poplar, a “key associated species” of the Hedgerow and Rivers and Streams HAP in Buckinghamshire and Milton Keynes BAP, will assist in the replacement of this declining species within the landscape. This species will be particularly well situated adjacent to the proposed pond planting in the line of Loughton Brook within the proposed Salden Chase Eco/Wildlife Park.
- 7.7.38 Such features will provide important nesting, cover and foraging habitat for invertebrates, mammal and birds species as well as forming wildlife corridor links for other wildlife.

- 7.7.39 In particular, new tree and shrub planting will be used to form corridors within the areas of built form to encourage wildlife to move through these areas as well as providing habitat in their own right.
- 7.7.40 The scale of these enhancements and the integration of the planting within the developed areas is in line with the Buckinghamshire and Milton Keynes BAP for Urban habitats which encourages the incorporation of wildlife habitats within any new urban developments. This is further seen by the incorporation of Weasels Lane as a major wildlife corridor running the length of the Environmental Impact Assessment Study Area, and secondary corridors running north and south of Weasels Lane connecting to off-site wildlife habitats and non-statutory sites.
- 7.7.41 **Hedgerows:** Hedgerow planting will occur within the Environmental Impact Assessment Study Area, both throughout the area of built form development and within the substantial landscaped areas and within the proposed Informal Parkland, Thrift and Broadway Wood transition Area and the Extension of Loughton Brook Linear Park.
- 7.7.42 In order to maximise the ecological value of the hedgerows they seek to link to existing hedgerows to form a connected network which in turn links to other features such as woodlands, ponds and watercourses. Hence, a network of wildlife corridors will be created throughout the Environmental Impact Assessment Study Area.
- 7.7.43 In addition, new hedgerows will form valuable wildlife habitat in their own right. To maximise their value, new hedgerows will comprise of a high diversity of species including at least five woody species per 30m sections. Woody hedgerow species should including fruit, seed and nut bearing species such as Crab Apple *Malus sylvestris*, Hazel, Blackthorn, Cherry, Buckthorn *Rhamnus cathartica*, Guelder Rose, Rowan, Hawthorn, Holly, Oak and Wayfaring-tree *Viburnum lantana* while the planting of new hedgerows will be also be guided by species already present within

species rich hedgerows within the Environmental Impact Assessment Study Area or its immediate vicinity and include Elder, Elm, Privet, Dog Rose, Ash, Field Maple, Dogwood, Midland Hawthorn *Crataegus laevigata*, Lime and Hornbeam.

7.7.44 The enhanced hedgerow network will provide further habitats for a range of birds, bats, small mammals, and potentially the UK BAP species Brown Hare which use hedgerow bases as a resting place.

7.7.45 In addition, the existing hedgerows within the Environmental Impact Assessment Study Area will be restored where appropriate by laying, coppicing or gapping up to improve their ecological value. The management of the hedgerows will follow ecological principles such that annual flailing and the use of pesticides and fertilisers will be avoided, with consideration given to avoiding over-tidying the hedgerows, so as to avoid diminishing their wildlife value.

7.7.46 **Wildflower Grassland:** Grasslands form Habitat Action Plans within Buckinghamshire and Milton Keynes BAP with significant opportunities available at the Environmental Impact Assessment Study Area to create large areas of new grasslands.

7.7.47 Such opportunities are immediately available in the areas of informal parkland and the Extension of Loughton Brook Linear Park (see Plan 7.9-1110/ECO9). The opportunity will be taken to create species rich native wildflower swards. Careful soil preparation will be required (especially over high nutrient areas) while the grasslands created will reflect the local conditions with damp grassland mixes selected in some locations with neutral dry grassland mixes utilised elsewhere. In addition consideration will be given to the alteration of the soils within areas of the Environmental Impact Assessment Study Area to provide opportunities for a variety of soil conditions supporting a further diversity of grassland. For example, top soil

scrapes leaving nutrient poor areas on free draining slopes, seeded with suitable grassland mixes would create small mosaics within a larger grassland unit.

7.7.48 The provision of ecologically managed grassland would provide an ideal opportunity to include National BAP floral species into the local seedbank, to add further ecological value to the Environmental Impact Assessment Study Area.

7.7.49 In addition, large areas of existing grassland will be retained and in these locations an opportunity is available to substantially enhance their biodiversity value through the use of techniques such as over seeding with native wildflower grassland mixes and through the introduction of ecologically led management.

7.7.50 **Ponds:** In line with hydrological requirements up to fourteen new ponds could be provided according to ecological principles in the north, south and west of the Environmental Impact Assessment Study Area (see Plan 7.9 -1110/ECO9). In order to maximise their hydrological purpose and value to biodiversity, the ponds will incorporate sinuous, gently shelving margins so as to create a variety of conditions and micro-climates within each pond.

7.7.51 This design principle is encouraged by the Buckinghamshire and Milton Keynes Standing Open Water BAP to create new high quality ponds of value to wildlife by giving consideration to depth, edge habitats, bank slope and seasonal water level variation. This will encourage a broad range of invertebrates to colonise and establish, which will promote a stable and healthy pond eco-system, maximising each ponds biodiversity potential.

7.7.52 The provision of new wildlife ponds at the Environmental Impact Assessment Study Area will provide suitable habitat for the fully protected UK BAP species Great Crested Newt and Water Vole should they colonise, as well as opportunities for other species such as Grass Snakes, Water Shrews, Frogs, Toads, Bats and Dragonflies.

- 7.7.53 Areas of damp wildflower grassland will be incorporated into the landscaping design adjacent to a number of the new ponds comprising native grass and herb species of local provenance. These will provide a complementary ecological enhancement of high value for wildlife and would also further the objectives of the Buckinghamshire and Milton Keynes BAP for Standing Open Water by providing opportunities for Water Vole and Water Rail *Rallus aquaticus*. This habitat would provide foraging resources for reptiles including Grass Snake, a number of birds, invertebrates, small mammals and amphibians, including the fully protected species Great Crested Newt, should it colonise the Environmental Impact Assessment Study Area.
- 7.7.54 The proposed ponds in the west of the Environmental Impact Assessment Study Area will be linked by ditches or swales enabling ephemeral aquatic linking habitats to arise during times of heavy rain or flood. This will provide a naturally flooded area providing enhanced biodiversity benefits.
- 7.7.55 New and retained ponds will be subject to an ecologically led hydrological management regime, whereby they will be managed according to ecological principles, which will ensure their ecological interest is enhanced (through de-silting, litter collection, and vegetation management) and subsequently maintained over the long term as an important hydrological resource for local wildlife.
- 7.7.56 **Swales, Ditches and Reed Beds:** The creation and ecologically led management of swales, ditches and reed beds supports the aims of Buckinghamshire and Milton Keynes BAP for Fens, Marsh, Swamp, Reedbeds and will support plants and animals that specialise in these habitat types such as Reed and Sedge Warbler *Acrocephalus schoenobaenus* as well as Reed Bunting and potentially wintering species or species on passage such as Bittern *Botaurus stellaris* and Cetti's Warbler *Cettia cetti*.

7.7.57 **Watercourses:** The watercourses in the Environmental Impact Assessment Study Area will benefit from the removal of the land from agricultural production which will lead to a reduction of agricultural run off in the form of pesticides, fertilisers and herbicides entering the watercourses.

7.7.58 In addition, the opportunity will be taken under the proposals to enhance the existing watercourses through the introduction of appropriate management such as through the removal of excessive over-shading vegetation, the widening and re-shaping of channels, the introduction of emergent and aquatic vegetation and the maintenance of flows through de-silting as required.

Faunal Enhancements with particular focus on the Buckinghamshire and Milton Keynes BAP

7.7.59 The habitat enhancements set out above will benefit a range of wildlife. In addition, enhancements for specific groups / species are set out below.

7.7.60 **Bats:** The UK BAP highlight bats as a priority species and the Buckinghamshire and Milton Keynes BAP highlights bats as key associated species within a number of the habitat action plans set out.

7.7.61 The presence of bat species utilising the Environmental Impact Assessment Study Area as a foraging resource is due to the nature of the habitats present in the Environmental Impact Assessment Study Area i.e. hedgerows, woodlands, watercourses and their associated riparian corridor. However, over large areas high quality bat foraging habitat is currently lacking. The landscaping proposals including the ponds, informal parkland and the extension of Loughton Brook Linear Park will provide an enhanced range of opportunities for foraging bats which should increase the availability of the Environmental Impact Assessment Study Area for this group.

7.7.62 At the present time relatively few roosting opportunities are present for the size of the Environmental Impact Assessment Study Area. In order to provide enhanced roosting conditions, a range of crevice-type bat boxes will be erected on semi-mature and mature trees across the Environmental Impact Assessment Study Area and particularly adjacent to watercourse WC3 and Thrift and Broadway Wood and Salden Wood. These boxes should ideally be erected as high up as possible and sited in sheltered wind-free areas that are exposed to the sun for part of the day, facing either in a south-east, south or south-westerly direction. These will provide roosting opportunities for the Buckinghamshire and Milton Keynes BAP bat species Common Pipistrelle, Noctule, Serotine, and Daubenton's.

7.7.63 The provision of further areas of open space, tree corridors, standing water, scrub/woodland pockets, and the Salden Chase Wildlife / Eco-Park informal parkland will provide foraging opportunities for a number of national and local BAP species including Common Pipistrelle, Noctule, Serotine, Daubenton's and Whiskered bat.

7.7.64 **Water Voles & Otters:** Enhancements to the watercourses and ponds and the creation of new ponds and lakes will benefit these species should they colonise the Environmental Impact Assessment Study Area. In particular, new 'off-line' opportunities may particularly benefit Water Voles as this species appears better able to escape predation by American Mink where it is located away from main Mink corridors.

7.7.65 **Birds:** The landscape planting scheme and new tree planting within the Environmental Impact Assessment Study Area will be ecologically lead so as to include fruit / berry bearing species to provide both foraging and nesting resources for a number of species. Ground nesting birds may benefit from the creation of areas of wildflower grassland while the creation of swales and reed beds will provide further opportunities for a wider range of species.

- 7.7.66 The provision of bird nest boxes of varying designs erected upon the new buildings and the existing retained semi-mature and mature trees will provide immediate roosting opportunities while the landscape planting and habitat creation schemes are maturing. In particular, opportunities for declining urban species will be provided such as the Buckingham and Milton Keynes Key Species, House Sparrow, House Martin and Swift in the form of nest boxes, cups and bricks designed to meet the social requirements of these species.
- 7.7.67 The specific provision of a small number of Barn Owl Roost boxes in areas of suitable edge habitat may encourage this species to roost at the Environmental Impact Assessment Study Area. The boxes should be situated in the vicinity of grassland and open space, although Barn Owls can travel some distance to preferred hunting sites. The nest boxes will comprise of large wooden boxes, either sited on or within large trees situated, incorporated into buildings or on specific poles with a box and a landing platform affixed to the top.
- 7.7.68 **Amphibians and Reptiles:** The creation of a series of ponds linked by swales, ditches and reedbeds along with further terrestrial habitat in the form of hedgerows, grassland and landscape banks and planting will provide a mosaic of suitable aquatic and terrestrial habitats for amphibians including the UK and local BAP species Great Crested Newt, in addition to providing a range of suitable foraging and resting habitats for common reptiles, in particular Grass Snake.
- 7.7.69 The proposals will include the provision of a number of hibernacula, located throughout the Environmental Impact Assessment Study Area comprising of wood cut during any clearance works. These hibernacula will provide suitable habitat for reptiles and amphibians within the Environmental Impact Assessment Study Area along with the existing opportunities while the provision of scattered log and rock piles will provide ideal basking points.

- 7.7.70 **Invertebrates:** The removal of the Environmental Impact Assessment Study Area from an intensive agricultural regime will lead to significant benefits for this group. It is expected that the biomass that would be supported would increase significantly with the knock on effects that other species higher up in the food chain will benefit.
- 7.7.71 The creation of new and additional habitats will increase the range of species that are able to inhabit the Environmental Impact Assessment Study Area with particular benefits seen for aquatic species.
- 7.7.72 In addition, the other existing habitats on Environmental Impact Assessment Study Area such as the woodlands and hedgerows will be enhanced for this group through the introduction of ecologically led management while this will further benefit invertebrates for example by the retention of standing dead wood.

Education

- 7.7.73 The new habitats created as part of the substantial landscape areas informal parkland, Thrift and Broadway Wood Transitional Area, the extension of Loughton Brook Linear Park and the Salden Chase Eco/Wildlife Park will provide an educational resource for pupils of the four new primary schools and to a lesser extent the secondary school to be created while there is the potential for facilities to be incorporated such as pond dipping platforms to further integrate wildlife into education.
- 7.7.74 In addition, interpretation boards will be erected at key locations within the informal parkland and Salden Chase Eco/Wildlife Park so as to inform the general public of the nature conservation value of the habitats and wildlife present to encourage the local stewardship of the land.

7.7.75 Prominent wildlife features such as bird boxes and bat boxes can prove focus points for local interest such as bird watching and mammal groups and will help further the current trend in popular culture of volunteer recording and wildlife observation.

Phasing

7.7.76 The proposed development of the Environmental Impact Assessment Study Area is a long term development project which is expected to be delivered over a 20 – 30 year period. Indicative phasing is discussed within the Design and Access Statement, and includes the laying out of open space and landscape. The ecological mitigation and enhancements as described above will be implemented at each stage of the construction and development as appropriate, with reference to the opportunity for appropriate early establishment of services and facilities. The delivery programme will be affected by changes in specific circumstances and will therefore be subject to change in response to influencing factors. A more detailed phasing strategy will be prepared through S106 negotiations, once certainty has been established on infrastructure and development considerations.

Overall Ecological Impact following enhancements

7.7.77 The above impact assessment shows that the residual impacts of the proposals are minimal with the only very minor impacts potentially remaining in respect of increased visitor pressure to the adjacent non-statutory wildlife sites, and loss of open space grassland and arable habitat for Brown Hare and ground nesting birds. Indeed residual impacts will be reduced still further once the open space landscaping proposals have matured , while overall residual impacts are more than off-set for by the substantial amount of habitat creation which will take place which in turn will lead to a significant net gain for nature conservation. Indeed, the proposals will bring about a wide range of benefits for nature conservation in the form of the enhancement of existing habitats on site and the creation of large and significant

areas of new habitats, including native tree and shrub planting in the form of substantial landscaped areas, hedgerow planting, wildflower grassland, particularly in the Extension of Loughton Brook Linear Park, the creation of up to 14 new ponds and swales, ditches and reedbeds, in conjunction with specific benefits for fauna. Specific benefits for the Local BAP species group bats will be brought about by the provision of further foraging and commuting opportunities in the form of tree planting, wildflower grassland and open water bodies, while enhancements to watercourse WC3 will provide benefits for both Otter and Water Vole. A number of bird species will benefit from the landscape planting in terms of increased foraging resources and nesting opportunities, whilst those with specific nest box requirements, such as Barn Owl will be provided for in the form of a number of nest boxes. Amphibians and reptiles will benefit from the creation of a mosaic of suitable habitats in the form of swales, ditches, reed beds, ponds, hedgerows and ecologically managed grassland. These enhancements will directly contribute to the aims and objectives of the Buckingham and Milton Keynes BAP such as BAP species including bats and Great Crested Newt and will lead to a net gain for wildlife.

7.7.78 Overall, residual impacts following mitigation and enhancements are **positive** at the **local to county level** and of **moderate – major significance**.

Planning Policy Context

7.8.1 The planning policy framework that relates to nature conservation issues at Salden Chase is issued at three main administrative levels – Nationally through Planning Policy Statement 9, at regional level through the South East Plan 2009 and locally through the Aylesbury Vale District Local Plan 2004. Any proposed development will be judged in relation to the policies contained in these planning documents.

National Policy

Planning Policy Statement 9

7.8.2 Guidance on National Policy for biodiversity and geological conservation is provided by Planning Policy Statement 9 (PPS9), published in August 2005. PPS9 confirms the Government's commitment to the protection of biodiversity and geological conservation through the planning system.

7.8.3 PPS9 requires the Local Authorities to fully consider the effect of planning decisions on biodiversity and geological conservation, and ensure that appropriate weight is attached to statutory nature conservation designations, protected species and biodiversity and geological interest within the wider environment.

7.8.4 It also considers the potential biodiversity and geological conservation gains which can be secured within developments, including the use of planning obligations.

7.8.5 National Policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

Regional Policy

7.8.6 The Environmental Impact Assessment Study Area lies within the South East region. Policies providing guidance on the relationship between development and nature conservation in the South East Plan, which was published by the Secretary of State on 6 May 2009, replacing previous planning policy in the form of RPG9 and the Buckinghamshire County Structure Plan 1996.

South East Plan

7.8.7 The South East Plan contains four policies (**NRM5**, **NRM6**, **NRM7** & **CC8**) which relate to biodiversity.

7.8.8 Policy **NRM5** focuses on conservation and improvement of biodiversity, including the protection of sites of international, national, county and local importance against harm. In addition, it sets out the need for development to minimise its impact upon wildlife / biodiversity and mitigate against any adverse effects. Furthermore, it promotes the enhancement of biodiversity / wildlife value at the Environmental Impact Assessment Study Area.

7.8.9 Policy **NRM6** specifically relates to the protection of the Thames Basin Heath Special Protection Area (SPA), whereas policy **NRM7** sets out to protect ancient woodland and promotes effective management or creation of new woodland, where appropriate.

7.8.10 Policy **CC8** highlights that the main aim of the management of green infrastructure is to maintain and improve biodiversity.

7.8.11 The Environmental Impact Assessment Study Area is known as Milton Keynes South West Strategic Development Area (SDA) in the South East Plan.

Local Policy

- 7.8.12 The Environmental Impact Assessment Study Area lies almost entirely within Aylesbury Vale.
- 7.8.13 The Planning and Compulsory Purchase Act 2004 set out that local planning policy in England should be included within Local Development Framework (LDFs), which are to replace previous regional policy guidance in the form of Local Plans. However, given this change in policy, the act determined that existing Local Plans would remain in force for a period of up to 3 years. This period has now ended, however the LDF for the Aylesbury Vale remains to be finalised and formally adopted.
- 7.8.14 Previous policy for Aylesbury Vale was set out in the Aylesbury Vale District Local Plan (adopted January 2004), which set out the policy strategy for the District up until 2011. Although the Secretary of State permitted the 'saving of policies' all policies relating to nature conservation issues at the Environmental Impact Assessment Study Area have now expired

Emerging Policy - Aylesbury Vale Local Development Framework

- 7.8.15 The emerging Aylesbury Vale LDF will cover the period up to 2026.
- 7.8.16 The Environmental Impact Assessment Study Area is allocated in the emerging LDF Core Strategy as CS4 North East Aylesbury Vale SDA.
- 7.8.17 Under the heading, 'Delivering the strategy: other policies' Policy CS12 'Environmental assets and green infrastructure' relates to nature conservation within the Environmental Impact Assessment Study Area.
- 7.8.18 Policy **CS12** will ensure that;

“... II Aylesbury Vale’s environmental assets will be conserved and where appropriate improved, to maximise environmental, social and economic benefits by requiring that:...

d) The objectives of national and local biodiversity action plans are implemented through measures including conserving and enhancing biodiversity in terms of species and habitat, protecting designated sites of importance for biodiversity, and creating opportunities to link wildlife habitats.

e) Watercourses and their settings are conserved and enhanced for their biodiversity and recreational value. Where possible, Sustainable Drainage Systems (SuDS), and where appropriate strategic flood storage reservoirs, should be incorporated in new development schemes, in order to reduce flood risk. There should be improved connectivity between water infrastructure and water bodies. ...

III. Strategic green infrastructure assets should be identified, retained and enhanced, including improving connectivity through the development of green corridors. Local open spaces should be protected and where possible connected to strategic green infrastructure networks....”

The public consultation on the draft Core Strategy has taken place and all of the representations were sent to the Secretary of State on 30 October 2009. An EIP is planned for the early spring of 2010 with a view to a binding Inspector’s report being provided around June and this in turn leading to a formal adoption of a Core Strategy for Aylesbury Vale by the autumn of 2010.

Adjacent Local Policy

- 7.8.19 The Environmental Impact Assessment Study Area lies adjacent to south west Milton Keynes and indeed the A421 element of the study area is within Milton Keynes.
- 7.8.20 The previous document in use for planning control purposes within Milton Keynes was the Milton Keynes Local Plan, adopted December 2005. As such, the current detailed local planning policy within Milton Keynes is in the form of 'saved policies', from the Milton Keynes Local Plan, while the remaining policies within the Local Plan are no longer in force.
- 7.8.21 The Milton Keynes Local Plan contains three policies (NE1-NE3), which relate specifically to nature conservation, all of which have been 'saved' under direction from the Secretary of State.
- 7.8.22 These policies refer to the protection of nature conservation sites including internationally, nationally and locally designated sites (NE1) and protected species and their habitats (NE2), while policy NE3 requires the incorporation of biodiversity enhancements within development proposals.

Emerging Adjacent Policy – Milton Keynes Local Development Framework

- 7.8.23 The emerging Milton Keynes LDF Core Strategy document is currently in the final stages of pre-formal public consultation production, with the Core Strategy submission document being considered by the Local Development Framework Advisory Group before it is then considered further by the Cabinet and Full Council and is then prepared for consultation. On this basis it is unlikely that Milton Keynes Council will have an adopted Core Strategy before 2011.

Discussion

- 7.8.24 As set out in Section 6.2, the development proposals will not adversely affect any statutory or non-statutory nature conservation designations. Accordingly, the proposed development of the Environmental Impact Assessment Study Area is in line with PPS9, regional policy (South East Regional Plan Policy NRM5), and local policy (Milton Keynes saved Local Plan Policy NE1) in relation to such designations.
- 7.8.25 Following recommendations set out within section 6.10 of this chapter, species and their habitats will be protected, impacts on wildlife will be minimized and mitigated for, new woodland will be created and management will maintain and improve biodiversity, ensuring the development is in line with policies NRM5, NRM7 and CC8 of the South East Regional Plan and saved Policies NE2 and NE3 from Milton Keynes Local Plan.
- 7.8.26 Watercourses and their settings will be conserved and enhanced under the proposals with the creation of new wetland and aquatic habitats, such that the proposals are fully in line with Policy CS12 of the emerging Aylesbury Vale LDF.
- 7.8.27 Furthermore the objectives of National and Local BAPs for species and habitats has been incorporated where appropriate into the development while wildlife links and connectivity will be improved, such that the proposals are fully inline with Policy CS12 of the emerging Aylesbury Vale LDF.

Conclusion

- 7.8.28 It is considered that, following the recommendations set out in this chapter, in terms of nature conservation, the proposed development of the Environmental Impact Assessment Study Area would fully accord with current and emerging national, regional and local policy.

Summary and Conclusions

- 7.9.1 The Salden Chase Consortium originally commissioned Aspect Ecology in April 2006 to undertake an ecological assessment of an area of land, known as Salden Chase, situated to the south west of Milton Keynes in the Aylesbury Vale District of Buckinghamshire (see Figure 7.1-1110/ECO1).
- 7.9.2 **Overall Ecological Impacts and Enhancements:** The impact assessment finds that the main impacts of the proposals are centred on the permanent loss of arable and species poor agricultural grassland, which are evaluated as being of limited ecological significance. The majority of the remaining impacts are focussed on smaller areas of further habitats of limited ecological value including scattered scrub, tall ruderal vegetation, hardstanding and buildings. The majority of habitats of ecological value, including watercourse WC3, standard trees and hedgerows, will be retained and protected under the proposals. A number of UK and local BAP habitats listed within local Biodiversity Action Plans are present in the Environmental Impact Assessment Study Area including ponds and hedgerows, which will be largely retained as part of the proposals or any losses mitigated through the creation of equivalent replacement habitats. Similarly, with the use of careful safeguards, the proposals ensure there will be no net loss in the conservation status of the majority of protected species namely bats, nesting birds, Great Crested Newts, reptiles or the species of Principal Importance recorded within the Environmental Impact Assessment Study Area as a result of the proposals. Minor losses are substantially compensated for through the provision of enhancement measures for biodiversity.
- 7.9.3 Such ecological enhancements are proposed across the Environmental Impact Assessment Study Area to create a series of ecologically linked habitats of high local biodiversity value that where possible contribute to the aims and objectives of the Buckinghamshire and Milton Keynes Biodiversity Action Plan. Broad areas of open space in the form of Informal Parkland, an Extension to Loughton Brook Linear Park

and Thrift and Broadway Wood Transitional Area are proposed adjacent to the Country Wildlife Sites and Biological Notification Sites which lie adjacent to the Environmental Impact Assessment Study Area which will effectively extend the nature conservation interests of these designations beyond their existing boundaries. Further enhancements will create and enhance a number habitats in two principle areas in the west, north and south of the Environmental Impact Assessment Study Area, in addition to through the centre of the Environmental Impact Assessment Study Area in the form of Weasel's Lane. These areas are linked and integrated to bring forward widespread enhancements across the Environmental Impact Assessment Study Area in respect of native tree and shrub planting, hedgerows, wildflower grassland, ponds and swales, ditches and reedbeds.

7.9.4 The landscaping proposals including Informal Parkland, an Extension to Loughton Brook Linear Park, Thrift and Broadway Wood Transitional Area and Amenity Open Space which will provide an enhanced range of opportunities for foraging bats, while new roosting opportunities will also be provided across the Environmental Impact Assessment Study Area. Enhancements to the watercourses and ponds and the creation of new ponds will benefit Water Vole and Otter should they colonise the Environmental Impact Assessment Study Area. The creation of a series of ponds linked by swales, ditches and reedbeds along with extensive new areas of terrestrial habitat in the form of hedgerows, grassland and landscape banks and planting will provide a mosaic of suitable aquatic and terrestrial habitats for amphibians and common reptiles. In addition, the proposals will include the provision of a number of hibernacula, located throughout the Environmental Impact Assessment Study Area comprising of wood cut during any clearance works. Private gardens and areas of new allotments will provide a range of habitats to potentially support reptiles, in particular Slow Worms. The removal of the Environmental Impact Assessment Study Area from an intensive agricultural regime will lead to significant benefits for invertebrates while the creation of new and additional habitats will increase the range

of species that are able to inhabit the Environmental Impact Assessment Study Area with particular benefits seen for aquatic invertebrate species.

7.9.5 Overall, residual impacts following mitigation and enhancements are **positive** at the **local to county level** and of **moderate – major significance**.

7.9.6 **Conclusions:** In conclusion, on the present evidence, both from the survey work undertaken and background data searches, there is no evidence to suggest that the proposed development, with the use of appropriate safeguards, mitigation and enhancements would lead to any significant effects on any known protected species or ecological features of value at the national or local level. Indeed, by contrast significant new opportunities for wildlife will be created that will contribute to the aims and objectives of the Local BAP. As such, subject to the recommendations within this chapter, it is considered that there are no overriding ecological constraints to the development of the Environmental Impact Assessment Study Area.