

INCE RESOURCE
RECOVERY PARK
INCE MARSHES
CHESHIRE

**Environmental Statement
Chapter 10 - Ecology**

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10.1 INTRODUCTION

10.1.1. Background

- 10.1.1.1. Ecology Solutions was commissioned by Peel Environmental Ince Ltd in November 2007 to collate all existing ecological information for the proposed Ince Resource Recovery Park and prepare the Ecology chapter of the Environmental Statement for the proposed development at Ince Marshes, Cheshire (see Figure 10.1) (GR SJ 470 770). This chapter represents a complete re-write of earlier ecological chapters submitted on behalf of Peel Environmental Ince Ltd.
- 10.1.1.2. The application site covers an area of approximately 134 hectares of which it is proposed to develop approximately 58 hectares, the remainder being utilised for landscape and habitat creation/enhancement works.
- 10.1.1.3. The ecological assessment is based on results from field surveys undertaken by various consultants between 2004 and 2007. Further information has been obtained through consultation with the recognised bodies involved in nature conservation in the local area.
- 10.1.1.4. The value of the ecological features identified through both field surveys and desk-top studies has been interpreted within the context of recognized methodologies and also within the planning policy context, both on a regional and local level. Habitat and species evaluations are based around the guidance issued by the Institute of Ecology and Environmental Management (IEEM).
- 10.1.1.5. This chapter also sets out the potential impact of the proposed development, both during construction and operation, on recognized ecological features and the significance of these impacts, along with strategies proposed to mitigate damage and compensate for loss.

10.1.2. Application Site Characteristics

- 10.1.2.1. The application site is located in an area known as Ince Marshes, lying east of the village of Ince, and to the north-east of Elton. The city of Chester lies approximately 10km to the south-west.
- 10.1.2.2. The Manchester Ship Canal forms the northern boundary of the application site. Directly to the north of this lies the Mersey Estuary Site of Special Scientific Interest (SSSI), which is also designated as a Special Protection Area (SPA) (see Figure 10.2). The application site is bounded in the east by agricultural land. To the south of the application site lies the Kemira GrowHow fertiliser plant and further areas of farmland. To the west of the application site is the Quinn Glass plant and Holme Farm. Part of the application site, and land to the east of the application site, is designated as a Site of Biological Importance (SBI).

- 10.1.2.3. The application site comprises reclaimed marshland, composed primarily of species-poor, semi-improved grassland that is used for grazing cattle. In addition to grassland habitats, other habitats present on site include arable, broadleaved woodland, standing and running water, scattered scrub and hedgerows (see Figures 10.3a, b and c).

10.1.3. **Proposals**

- 10.1.3.1. The proposed development is the establishment of a Resource Recovery Park (RRP), which will incorporate an Environmental Technologies Complex (ETC) (including the provision of a dry cargo facility on the Manchester Ship Canal and a rail link), an Integrated Waste Management Facility (IWMMF) and a Refuse Derived Fuel Power Plant (RDF).
- 10.1.3.2. Two separate applications have been submitted for the above development, one to Cheshire County Council for the IWMMF and ETC (referred to herewith as the CCC application) and one to the Department for Business, Enterprise & Regulatory Reform for the RDF (referred to herewith as the DBERR application).
- 10.1.3.3. An indicative masterplan for the site can be seen in Chapter 2 of the ES (Figure 2.1 (A): Siting Masterplan – Entire Site; Figure 2.1 (B): Siting Masterplan – CCC Application and Figure 2.1 (C): Siting Masterplan – DBERR Application).
- 10.1.3.4. The term “application site” when used in this ES chapter refers to the complete development footprint, unless otherwise stated. Where there is reference to impacts, significance of impacts and any mitigation, which differs between the CCC application, the DBERR application or the two application together these are clearly spelt out under the relevant headings.

10.2 ASSESSMENT METHODOLOGY

10.2.1. Identifying the Zone of Influence

- 10.2.1.1. The potential ecological impacts of the proposed development are largely focused on the application site, and its immediate surroundings, but also extend to the Mersey Estuary SSSI/SPA.
- 10.2.1.2. Regulations 48 to 53 of the Habitats Regulations contain 'general provisions for protection of European sites', and include provision for their protection from impacts derived from plans or projects. As such, potential impacts arising from the construction and operational phases of the proposed development in relation to the Mersey Estuary SPA have also been considered together with the potential impacts on other statutory and non-statutory sites within the vicinity of the application site.
- 10.2.1.3. In addition, consideration has also been given to the following likely significant effects which may spread beyond the application site:
 - Disturbance to populations within hearing range during the construction phase due to noise or vibration;
 - Disruption to habitats / populations within receiving range of dust, other air quality considerations during the construction and operation phase;
 - Disruption to the normal diurnal patterns for species during construction and operation due to lighting;
 - Disturbance to habitats / populations within walking distance during the operation phase; and
 - Pollution to watercourses during the construction and operation phases.

10.2.2. Impact Assessment Methodology

- 10.2.2.1. The impact assessment has been made in relation to the latest masterplan for the site.
- 10.2.2.2. The evaluation and impact assessment method is based on the guidelines produced by the Institute of Ecology and Environmental Management¹, which avoids the provision of definitions as to how to assign habitats and species different levels of value and relies on an approach that involves professional judgement and the use of available guidance and information.
- 10.2.2.3. The value of each resource should be determined within a defined geographical context:
 - International;

¹Institute of Ecology and Environmental Management (2006) Guidelines for Ecological Impact Assessment in the United Kingdom (version 7 July 2006). <http://www.ieem.org.uk/ecia/index.html>.

- National;
- Regional;
- County (or Metropolitan – e.g. in London);
- District (or Unitary Authority, City or Borough);
- Local or Parish; or
- Site.

10.2.2.4. A number of other key considerations include:

- Designated Sites and Features (e.g. Special Protection Areas, Sites of Special Scientific Interest, ancient woodland, etc.);
- Biodiversity Value (Use of Biodiversity Action Plans, development plans and other published documents);
- Potential Value;
- Secondary or Supporting Value;
- Social or Economic Value; and
- Legal Issues

10.2.2.5. For example, the Cheshire Biodiversity Action Plan has been used to assist in valuing features and developing mitigation strategies, where necessary. Consideration has also been given to the policies contained within the Cheshire 2016 Structure Plan and the Ellesmere Port & Neston Borough Council Local Plan (2002).

10.2.2.6. Having identified the ecologically important features likely to be affected by the development, the current guidance promotes a transparent approach in which an impact is determined to be significant or not on the basis of a discussion of the factors that categorise it. This includes characterising the nature of the likely impacts on each important feature in terms of ecological structure and function, by considering the following parameters:

- Positive or negative;
- Extent;
- Magnitude
- Duration;
- Reversibility; and
- Timing and frequency.

10.2.2.7. Where it was concluded that there would be an impact (positive or negative and including cumulative impacts) on a defined site or ecosystem(s) and/or the conservation status of habitats or species within a given geographical area, it was described as significant in the following terms: major, moderate, minor, negligible and none.

10.3 SURVEY METHODOLOGY

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

10.3.2 Desk Survey

10.3.2.1 In order to compile background information on the application site and its immediate surroundings, the following organisations were contacted:

- RECORD (Cheshire's Biological Records centre);
- Cheshire Wildlife Trust;
- Broxton Barn Owl Group;
- Cheshire Bat Group;
- Cheshire Badger Group; and
- Cheshire and Wirral Ornithological Society.

10.3.2.2 Information received from the data searches is included at Appendix 10.1, and where appropriate is shown on Figure 10.2.

10.3.2.3 Further information on designated sites from a wider search area was also obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)² database and English Nature's Nature on the Map³. This information is reproduced at Appendix 10.3 and 10.2 respectively, and where appropriate on Figure 10.2. Further bird data was obtained from the Wetland Bird Survey (WEBS). This information can be found in Appendix 10.4.

10.3.3 Habitat Survey Methodology

10.3.3.1 The application site was subject to up-to-date ecological surveys during the 2007 survey season. These surveys were undertaken in order to update previous surveys undertaken between 2004 and 2006, the results of which have been made available in the ES submitted in July 2007. Surveys were undertaken in order to ascertain the general ecological value of the land contained within the boundaries of the application site and to identify the main habitats and associated plant species, with notes on fauna utilising the site.

10.3.3.2 **Extended Phase 1 and NVC Habitat Survey.** An initial habitat assessment was undertaken in May 2007 based around the Phase 1 Survey methodology⁴, whereby the habitat types present are identified and mapped together with an assessment of the species composition of each habitat (see Figure 10.2). This technique provides an inventory of the basic habitat types present and allows

² <http://www.magic.gov.uk/>

³ <http://www.natureonthemap.gov.uk/>

⁴ Joint Nature Conservation Committee (1993) Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Peterborough. 1993.

identification of areas of greater potential, which may require further more detailed survey work.

- 10.3.3.3 In August 2007, a detailed National Vegetation Classification (NVC)⁵ survey was undertaken, in order to further divide habitats present into the relevant communities and sub-communities and produce a comprehensive species list for the site. Although August is a sub-optimal time to survey woodland habitat it is believed that sufficient information was gathered during this and previous surveys to make an accurate assessment of this habitat.
- 10.3.3.4 As part of the above assessment, the hedgerows within the application site were also initially surveyed to assess the probability as to whether they would qualify as 'important' under the Hedgerow Regulations 1997 on the basis of the ecological criteria of the legislation⁶.
- 10.3.3.5 All species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent during different seasons. However, the surveys undertaken fall within the recommended seasonal period for botanical work and it is considered that the timing of the surveys allowed an accurate evaluation of the intrinsic interest to be made.

10.3.4 Fauna

- 10.3.4.1 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 study area by protected species, Biodiversity Action Plan (BAP) species, or other notable or rare species.
- 10.3.4.2 In addition to casual observations, the following species-specific surveys were undertaken during the 2007 survey season:
- Badgers (May 2007);
 - Bats (June – September 2007);
 - Water Voles (May 2007);
 - Great Crested Newts (May and June 2007);
 - Winter Birds (December – March 2006/7);
 - Breeding Birds (April – July 2007)
 - Terrestrial Invertebrates (August 2007); and
 - Aquatic Invertebrates (May 2007).
- 10.3.4.3 These surveys were undertaken in order to update previous species-specific surveys undertaken during

⁵ J.S. Rodwell (1991). British Plant Communities (Vol.1, 2, 3, 4, 5). Cambridge University Press.

⁶ <http://www.opsi.gov.uk/si/si1997/19971160.htm>

- 10.3.4.4 Surveys were undertaken by experienced, and where necessary licensed ecologists, following established best practice and guidance issued by Natural England (formerly English Nature).
- 10.3.4.5 Full details of the survey methodologies employed are given in Appendix 10.5.
- 10.3.4.6 Survey reports for the 2007 season can be seen in Appendices 10.9 – 10.19.
- 10.3.4.7 While there has been extensive survey and assessment of the site over many years, a small number of surveys relating to areas or particular species has not been undertaken, the reasons are clearly stated in relevant sections. In terms of assessing impacts the significance of impacts and any mitigation, a precautionary position has been adopted and the assessment has proceeded on a worse case basis.

10.4 BASELINE CONDITIONS

10.4.1 Introduction

- 10.4.1.1 The objectives of establishing the ecological baseline are twofold:
- (i) To describe aspects of the natural environment and to identify important and protected habitats and species that could be adversely affected by the development proposals; and
 - (ii) To characterise features that could be positively enhanced, created, restored or managed, by establishing the occurrence, distribution and extent of ecological features on site and in the surrounding area; and/or those species that could be positively managed to enhance their conservation status, distribution and abundance.
- 10.4.1.2 Important species are those protected by international or national legislation; those that have been identified in the UK Biodiversity Steering Group Volumes I to VI as priority species, and those identified as locally distinctive in a local BAP (e.g. 'local keystone', 'flagship' and 'umbrella species'⁷).

10.4.2 Designated Sites

Statutory

- 10.4.2.1 There are no sites of international importance such as Special Protection Areas (SPAs) or Sites of Special Scientific Interest (SSSI) within the application site boundary.
- 10.4.2.2 The nearest statutory site is the Mersey Estuary SSSI, which is also designated as the Mersey Estuary SPA/RAMSAR. At its closest point to the application site, the SPA lies 79 metres from the northern boundary, abutting the northern edge of the Manchester Ship Canal (see Figure 10.2).
- 10.4.2.3 The Mersey Estuary SSSI was designated in 1984 for its internationally important assemblage of wildfowl and consists of large areas of intertidal sand and mudflats (see Appendix 10.6 for SSSI Citation). The Manchester Ship Canal forms part of the southern boundary of the site.
- 10.4.2.4 The Mersey Estuary SPA qualifies under Article 4.1 of the Birds Directive by supporting significant over-wintering populations (1.9% of the GB population) of Golden Plover *Pluvialis apricaria*, which are listed on Annex 1 of the Directive.

⁷ Developing Naturally. 2000. A Handbook for Incorporating the Natural Environment into Planning and Development.

10.4.2.5 In addition, the site qualifies under Article 4.2 of the Birds Directive by supporting significant over-wintering populations of migratory species such as:

- Pintail *Anas acuta* (1.9% of the population [scale not specified in citation]);
- Grey Plover *Pluvialis squatarola* (2.3% of the GB population);
- Lapwing *Vanellus vanellus* (0.7% of the GB population); and
- Redshank *Tringa tetanus* 3.8% of the population [scale not specified in citation]).

10.4.2.6 A full list of qualifying features can be seen at Appendix 10.7.

10.4.2.7 This site is valuable on a national and international level and receives the highest level of protection through the Conservation (Natural Habitats) Regulations 1994.

10.4.2.8 The next nearest statutory designated site is Dunsdale Hollow SSSI, which is located approximately 3.4 km to the east of the application site boundary. Dunsdale Hollow is an acidic lowland Birch *Betula sp.* and Sessile Oak *Quercus petraea* woodland and is valuable on a national level. However given its distance from the application site, it is thought unlikely that the proposed development would have a significant effect on this site and so it is not considered further in this chapter.

Non-Statutory

10.4.2.9 There is one Site of Biological Importance (SBI) located within the application site boundary (see Figure 10.2). Frodsham, Helsby and Ince Marshes SBI is a Grade A site designated for ornithological interest and localised botanical diversity in the ditch system.

10.4.2.10 The 1160 hectare site comprises land reclaimed from the Mersey Estuary following construction of the Manchester Ship Canal. Approximately 114 hectares of the SBI falls within the application site boundary.

10.4.2.11 This site is of value at a county level.

10.4.2.12 Two additional SBIs are located within 2 km of the application site. Gowy Meadows and Ditches is located approximately 2km to the south-west of the proposed access road for the entire development. Helsby Hill SBI is located approximately 1.5km to the east of the proposed rail link for the entire development.

10.4.2.13 Given the distance of these SBIs from the application site, it is thought unlikely that the proposed development would have a significant effect on these sites and so they are not considered further in this chapter.

10.4.3 Ecological Features

- 10.4.3.1 The application site was subject to an extended Phase 1 survey in May 2007. This was followed by a more detailed NVC survey of key habitats in August 2007.
- 10.4.3.2 The following habitat types or features were identified within the application site boundary:
- Semi-natural broadleaved woodland;
 - Broadleaved plantation woodland;
 - Dense and scattered scrub;
 - Hedgerows and mature trees;
 - Unimproved and semi-improved neutral grassland;
 - Improved grassland;
 - Arable;
 - Tall ruderal and swamp vegetation;
 - Standing water (ponds and temporary pools);
 - Running water (ditches and canal; and
 - Existing buildings.
- 10.4.3.3 The locations of these habitat types and features are shown on Figure 10.3, with a description of the habitat and floristic composition detailed individually below.
- 10.4.3.4 For a full survey report see Appendix 10.8.

Semi-natural Broadleaved Woodland

- 10.4.3.5 Semi-natural broadleaved woodland is present in three areas within the application site boundary. This habitat is generally species poor and is not listed on the Ancient Woodland Inventory⁸.
- 10.4.3.6 Feature 1 is located in the east of the application site (see Figure 10.3). Canopy species present in this woodland include abundant Sycamore *Acer pseudoplatanus* and frequent Ash *Fraxinus excelsior*. Species present in the understorey include occasional Wych Elm *Ulmus glabra*, Elder *Sambucus nigra* and Rose *Rosa sp.* Species present in the ground flora include abundant Ivy *Hedera helix* and occasional Male Fern *Dryopteris filix-mas* and Wood Avens *Geum urbanum*.
- 10.4.3.7 This area of woodland was included in the NVC survey of the site. The habitat present is most referable to NVC type W8d *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland, *Hedera helix* sub-community.
- 10.4.3.8 Feature 2 is located in the north of the application site. Canopy species present include locally abundant Sycamore in the drier areas and locally abundant Crack Willow *Salix fragilis* in the wetter areas. There is little understorey and the ground flora is sparse, comprising dominant Nettle *Urtica dioica* and occasional Yellow Flag-iris *Iris pseudacorus* and Sedge sp. *Carex sp.*

⁸ "Ancient Woodland Inventory". Nature Conservancy Council, 1981

- 10.4.3.9 This area of woodland was included in the NVC survey of the site. The habitat present in the wetter areas is most referable to NVC community W6b *Alnus glutinosa* – *Urtica dioica* woodland, *Salix fragilis* sub-community. In the drier areas, the habitat present is most referable to NVC type W8d *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland, *Hedera helix* sub-community.
- 10.4.3.10 Feature 3 is a narrow strip of wet woodland located to the south of feature 2. Canopy species present include dominant Crack Willow. Species present in the understorey include Hawthorn *Crataegus monogyna*, Rose and Elder. Species present in the ground flora include Common Reed *Phragmites australis*, Nettle and Ivy. The woodland is referable to NVC type W6b.

Broadleaved Plantation Woodland

- 10.4.3.11 Plantation woodland is present in four blocks in the south of the application site.
- 10.4.3.12 Feature 4 is located along the proposed road link. Canopy species present include locally dominant hybrid Black Poplar *Populus x canadensis* and Grey Poplar *Populus x canescens*, locally abundant White Willow *Salix alba* and Crack Willow and occasional Sycamore. Understorey species present include occasional Grey Alder *Alnus incana*, Silver Birch *Betula pendula* and Lime *Tilia x europaea*. Species present in the ground flora include False Oat-grass *Arrhenatherum elatius*, Rough Meadow-grass *Poa trivialis*, Cleavers *Galium aparine*, Wood Avens *Geum urbanum* and Nettle *Urtica dioica*.
- 10.4.3.13 Canopy species present in feature 5 include dominant Grey Poplar, with occasional White Willow and Hybrid Black Poplar. Understorey species include occasional Hawthorn and Elder *Sambucus nigra*. Ground flora species include dominant Nettle with frequent Cleavers.
- 10.4.3.14 Canopy species present in feature 6 include abundant Grey Poplar and Hybrid Black Poplar with occasional Sycamore, Beech *Fagus sylvatica* and Ash. Understorey species include occasional Silver Birch, Wych Elm, Hawthorn, Hazel *Corylus avellana* and Elder. The ground flora is dominated by Common Nettle.
- 10.4.3.15 Canopy species present in feature 7 include dominant Hybrid Black Poplar with occasional Ash, Crack Willow and Grey Poplar. The understorey in these areas comprises occasional Elder, Silver Birch and Grey Alder. The ground flora is dominated by Common Nettle.

Dense and Scattered Scrub

- 10.4.3.16 Dense and scattered scrub is present throughout the site (see Figure 10.3). Dense stands are located along the proposed rail-link in the south of the application site and along the Manchester Ship Canal in the north of the application site.
- 10.4.3.17 Species present include abundant Bramble *Rubus fruticosus agg.*, frequent Elder and Hawthorn and occasional Grey and Goat Willow *Salix cinerea and caprea*. Ground flora species in the areas of scrub include abundant Nettle and frequent Cleavers and Rosebay Willowherb *Chamaenerion angustifolium*.
- 10.4.3.18 Areas of scrub on site referable to NVC types W21a *Crataegus monogyna* – *Hedera helix* scrub, *Hedera helix* – *Urtica dioica* sub-community or W24 *Rubus fruticosus* – *Holcus lanatus* underscrub.

Hedgerows and Mature Trees

- 10.4.3.19 There are a total of 57 hedgerows within the application site boundary, with a total approximate length of 9000m.
- 10.4.3.20 The majority of the hedgerows on site are dominated by a few woody species, such as Hawthorn, Elder and Rose with an understorey dominated by Nettle and coarse grasses.
- 10.4.3.21 Hedgerows 40, 48 and 54 are slightly more species rich (see Figure 10.3). Hedgerow 40 comprises of Sycamore, Hawthorn, Rose, Elder and Crack Willow. Hedgerow 48 comprises of Ash, Oak, Hawthorn, Rose and Elder and Hedgerow 54 comprises Hawthorn, Alder *Alnus glutinosa*, Oak, Rose and Elder.
- 10.4.3.22 The majority of the hedgerows on site are gappy or overgrown due to a lack of long-term management. It is not thought that any of the hedgerows on site would qualify as important in ecological terms under the Hedgerow Regulations (1997).
- 10.4.3.23 Mature trees are present within hedgerows as standard trees, within woodland blocks and tree groups and along other boundary features, such as ditches.
- 10.4.3.24 Mature tree species present within the application site boundary include Crack Willow, Sycamore, Ash and Oak.

Unimproved Neutral Grassland

- 10.4.3.25 Feature 8 represents narrow strips of unimproved grassland along the banks of the disused railway line in the south of the application site. Grass species present here include locally frequent Creeping and Common Bent *Agrostis stolonifera and capillaris*, Cock's Foot *Dactylis glomerata*, Yorkshire Fog *Holcus lanatus*, Red Fescue *Festuca rubra*, Sweet Vernal-grass *Anthoxanthum odoratum* and Squirrel-tail Fescue *Vulpia bromoides*.
- 10.4.3.26 Herb species present in the sward include Hairy St John's Wort *Hypericum hirsutum*, Black Medick *Medicago lupulina*, Common Vetch *Vicia sativa*, Common Centaury *Centaureum erythraea*,

Yellow-wort *Blackstonia perfoliata* and Sedge sp. In small areas, the sward is more diverse and species such as Black Knapweed *Centaurea nigra*, Wild Mignonette *Reseda lutea* and Yellow Rattle *Rhinanthus minor* occur.

Semi-improved Neutral Grassland

- 10.4.3.27 Feature 9 borders the Manchester Ship Canal in the north of the application site and feature 10 borders fields and a farm track in the north. These features comprise narrow strips of semi-improved neutral grassland.
- 10.4.3.28 Grass species present in feature 9 include Cock's Foot, Common Couch *Elytrigia repens*, Crested Dog's-tail *Cynosurus cristatus*, False Oat-grass *Arrhenatherum elatius* and Red Fescue. Herb species present in the sward include abundant Creeping Thistle *Cirsium arvense*, with occasional Yarrow *Achillea millefolium*, Curled Dock *Rumex crispus* and Hogweed *Heracleum sphondylium*. In small, localised areas, the sward is more species rich and additional herb species include Meadow Vetchling *Lathyrus pratensis*, Common Bird's-foot Trefoil *Lotus corniculatus*, Ribwort Plantain *Plantago lanceolata* and Common Cat's-ear *Hypochaeris radicata*.
- 10.4.3.29 Grass species present in feature 10 include Meadow Foxtail *Alopecurus pratensis*, Cock's Foot, Rough meadow-grass *Poa trivialis*, Soft Brome *Bromus hordeaceus* and Perennial Ryegrass *Lolium perenne*. Herb species include Creeping Buttercup *Ranunculus repens*, Broadleaved Dock, Hogweed and Bush Vetch *Vicia sepium*.
- 10.4.3.30 Grassland communities within the site include;
- MG1 *Arrhenatherum elatius* grassland;
 - MG6 *Lolium perenne* – *Cynosurus cristatus* grassland; and
 - MG10 *Holcus lanatus* – *Juncus effusus* rush pasture.

Improved Grassland

- 10.4.3.31 32 fields within the application site boundary comprise improved grassland, which is primarily used for grazing livestock.
- 10.4.3.32 Grass species present within these fields include abundant to locally dominant Perennial Ryegrass, locally abundant Italian Ryegrass *Lolium multiflorum*, frequent Rough Meadow-grass and occasional Soft Brome and Annual Meadow-grass *Poa annua*. Herb species present include Broad-leaved Dock *Rumex obtusifolius*, Dandelion *Taraxacum agg.*, Nettle *Urtica dioica*, Daisy *Bellis perennis* and Creeping Buttercup *Ranunculus repens*.
- 10.4.3.33 The majority of the improved grassland fields are referable to NVC community MG7 *Lolium perenne* leys.

Arable

- 10.4.3.34 There are a total of 13 arable fields within the application site boundary.
- 10.4.3.35 These are fields that are sown with a crop or have been ploughed in preparation for a crop.

Tall Ruderal and Swamp Vegetation

- 10.4.3.36 Tall ruderal and swamp vegetation occurs in small areas across the application site, either as a mosaic or as distinct areas bordering other habitats.
- 10.4.3.37 Species present within areas of tall ruderal vegetation include Nettle, Rosebay Willowherb, Mugwort *Artemisia vulgaris*, Bristly Oxtongue *Picris echinoides*, Creeping Thistle and Broad-leaved Dock.
- 10.4.3.38 Species present within areas of swamp vegetation include locally dominant Common Reed, with occasional Nettle, Grey Willow and Bramble.

Standing and Running Water

- 10.4.3.39 Standing water is present in temporary pools and one permanent pond within the application site boundary.
- 10.4.3.40 Pools of water can be found adjacent to ditches or in depressions around the site. The majority of these pools lack any aquatic vegetation and dry up during the summer months. There is a permanent pond located along the disused railway line in the south of the application site. Vegetation present within and around this pond includes Water Plantain *Alisma plantago-aquatica*, Yellow Flag-iris, Water Dock *Rumex hydrolapanthum*, Common Duckweed *Lemna minor* and Soft Rush *Juncus effusus*.
- 10.4.3.41 Running water is present throughout the application site, in a network of drainage ditches, and along the Manchester Ship Canal.
- 10.4.3.42 There are approximately 132 ditches within the application site boundary. The ditches were found to vary greatly in condition, some having been dredged recently, others completely overgrown by bank-side vegetation, some heavily poached by cattle and some polluted with agricultural run-off. The ditches also varied greatly in the amount of submerged and emergent aquatic vegetation that they contained.
- 10.4.3.43 The main drains of West Boundary Drain, West Central Drain, Tang Running and East Central Drain are large and contain better examples of aquatic and emergent vegetation communities.
- 10.4.3.44 Of those ditches that support emergent vegetation, species recorded include Common Reed, Reed Canary-grass *Phalaris arundinacea*, Reed Sweet-grass *Glyceria maxima*, Branched Bur-

reed *Sparganium erectum*, Bulrush *Typha latifolia* and Yellow Flag-iris.

10.4.3.45 Of those ditches that support aquatic vegetation, species recorded include a Water-starwort *Callitriche* sp., Nuttall's Waterweed *Elodea nuttallii*, Common Duckweed *Lemna minor* and Curled Pondweed *Potamogeton crispus*.

10.4.3.46 NVC vegetation communities present within the ditches on the application site include;

- A2a *Lemna minor* community, typical sub-community;
- S4a *Phragmites australis* swamp and reed-beds, *Phragmites australis* sub-community;
- S6 *Carex riparia* swamp;
- S12a *Typha latifolia* swamp, *Sparganium erectum* sub-community;
- S14a *Sparganium erectum* swamp, *Sparganium erectum* sub-community;
- S22a *Glyceria fluitans* water-margin vegetation, *Glyceria fluitans* sub-community;
- S22c *Glyceria fluitans* water-margin vegetation, *Alopecurus geniculatus* sub-community;
- S26a *Phragmites australis* – *Urtica dioica* tall herb fen, *Filipendula ulmaria* sub-community;
- S26b *Phragmites australis* – *Urtica dioica* tall herb fen, *Arrhenatherum elatius* sub-community;
- S26d *Phragmites australis* – *Urtica dioica* tall herb fen, *Epilobium hirsutum* sub-community; and
- S28a *Phalaris arundinacea* tall herb fen, *Phalaris arundinacea* sub-community.

10.4.3.47 No aquatic vegetation was noted in the Manchester Ship Canal.

Buildings

10.4.3.48 Existing buildings are located along the Manchester Ship Canal. It was not possible to gain access to these buildings. The Environment Agency (EA) Pumping Station located adjacent to the canal does not form part of the proposed development.

Invasive Species

10.4.3.49 One invasive alien plant, Indian Balsam *Impatiens glandulifera*, was recorded within the application site boundary. This was primarily noted in the south of the application site and at one location along the disused railway line.

Habitat Summary

10.4.3.50 As a whole, the proposed development site is largely unremarkable in habitat terms. The vast majority of the proposed

development site supports either improved grassland or arable land, which is intrinsically species-poor.

- 10.4.3.51 However, where variety exists in the form of woodlands, drains/ditches and unimproved grassland, diversity and quality are increased in comparison with the site as a whole. None the less, these habitats are limited by agricultural run-off, unsympathetic management and over-shadowing by weed species such as Nettle.

10.4.4 Wildlife Use of the Application Site

- 10.4.4.1 General observations were made during the Phase 1 and NVC survey of any faunal use of the application site, with attention paid to the potential presence of protected species.
- 10.4.4.2 Specific surveys were also undertaken in regard to Badgers, bats, Water Vole, Great Crested Newt, wintering and breeding birds and aquatic and terrestrial invertebrates.

Badgers

- 10.4.4.3 A Badger survey of the application site was undertaken on the 22nd and 25th May 2007.
- 10.4.4.4 For the survey methodology, see Appendix 10.5.
- 10.4.4.5 Following best practice and in the interests of animal welfare, the results of the Badger survey are displayed on Figure 10.4 and Appendix 10.9 (Confidential Badger Appendix). This information is not made available for public consumption.

Bats

- 10.4.4.6 No records were received for the application site from consultees. There are however records for Common Pipistrelle *Pipistrellus pipistrellus* and Noctule *Nyctalus noctula* adjacent to the site, on land taken up by the Quinn Glass development.
- 10.4.4.7 An updated survey for bat activity was undertaken on the 10th June, 5th July, 25th July, 8th August, 20th August and 11th September 2007.
- 10.4.4.8 The survey methodology for this survey can be seen at Appendix 10.5 and a full copy of the survey report at Appendix 10.10. A summary of the survey results can also be seen in Figure 10.5.
- 10.4.4.9 In summary, this survey found that a small number of common species of bat regularly use features within the application site boundary for foraging or commuting. Bat species recorded include Common Pipistrelle, Soprano Pipistrelle *Pipistrellus pygmaeus* and Noctule.
- 10.4.4.10 The highest percentage of bat activity was found along hedgerows, drainage ditches and woodland edges.

- 10.4.4.11 No emergence or swarming activity was noted around any of the trees identified as having bat potential within the application site.
- 10.4.4.12 A similar bat activity survey was previously undertaken on 26th June, 18th July and 22nd August 2006.
- 10.4.4.13 The results from this survey also found that a small number of common species of bat utilise features within the application site boundary for foraging and commuting. Bat species recorded in 2006 were Common and Soprano Pipistrelle and Noctule. No bat emergence or swarming activity was noted around any of the trees identified as having bat potential within the application site.
- 10.4.4.14 In November 2005, an inspection of mature trees within the application site boundary was undertaken in order to establish their potential for roosting bats. In total, 9 trees were found to contain potential for roosting bats within the application site boundary (see Figure 10.5).
- 10.4.4.15 Buildings present within the application site boundary were not surveyed due to lack of access however all buildings were assessed for their suitability to support roosting bats and it was concluded that they had little or no potential.

Water Vole

- 10.4.4.16 Information received from consultees indicates a wide distribution of Water Vole across Frodsham, Helsby and Ince Marshes.
- 10.4.4.17 An updated Water Vole survey was undertaken of the application site on the 22nd and 25th May 2007. The survey methodology for this survey can be seen at Appendix 10.5. A full copy of the survey report can be seen at Appendix 10.11. Survey results are also displayed on Figure 10.6.
- 10.4.4.18 This survey confirmed the presence of Water Vole activity along the majority of wet ditches within the application site. Activity was, however, mainly concentrated in the west central drain, the northern drain and in an area to the south-west of Marsh Lane.
- 10.4.4.19 No evidence of Water Vole activity was found along any of the dry or partially dry ditches within the application site.
- 10.4.4.20 This survey was carried out in order to update the previous Water Vole survey undertaken of the application site in May 2005. This survey found that Water Vole were present along some of the ditches within the application site boundary.

Great Crested Newts

- 10.4.4.21 No records of Great Crested Newt were received from consultees for the application site. One record from 2001 was received for an area to the North of the Manchester Ship Canal.

- 10.4.4.22 An updated Great Crested newt survey was undertaken of the application site in May and June 2007. All ditches considered to be suitable to support Great Crested Newts were surveyed using three survey techniques (where conditions allowed), over four survey dates (see Appendix 10.5). The full survey report is shown at Appendix 10.12.
- 10.4.4.23 In summary, no Great Crested Newts were recorded for the application site during this survey. No Great Crested Newt eggs, larvae or adults were seen either within the ditch network or within terrestrial habitat within the application site boundary.
- 10.4.4.24 One ditch (labelled Feature 11 on Figure 10.3) was found to support a small population of Smooth Newts *Triturus vulgaris*. Low numbers of eggs were found attached to aquatic vegetation.
- 10.4.4.25 A pond located in the south of the application site was not surveyed at this time due to a lack of access however this pond will remain within the proposed development.
- 10.4.4.26 This survey was undertaken in order to update the results of previous surveys undertaken in 2006 and 2005.
- 10.4.4.27 During both of the above surveys, no Great Crested Newts were found within the application site. No Great Crested Newt eggs, larvae or adults were seen either within the ditch network or within terrestrial habitat within the application site boundary.

Winter/Non-breeding Birds

SPA

- 10.4.4.28 Records received from WEBS (Table 10.1 and Appendix 10.4) show that the Mersey Estuary SPA, to the north of the application site, supports significant numbers of Golden Plover, in addition to significant populations of Dunlin *Calidris alpina alpina*, Black Tailed Godwit *Limosa limosa islandica*, Curlew *Numenius arquata*, Grey Plover *Pluvialis squatarola*, Redshank *Tringa totanus*, Lapwing *Vanellus vanellus* and Ringed Plover *Charadrius hiaticula*. Significant populations of these species are qualifying features of the SPA.
- 10.4.4.29 Table 10.1 shows a summary of WEBS survey data for the Mersey Estuary SPA for the species listed above.

Table 10.1 Summary of WEBS Survey Data for Mersey Estuary SPA

| Species | Annual Peak 2002 | Annual Peak 2003 | Annual peak 2004 | GB Threshold | International Threshold |
|---------------|------------------|------------------|------------------|--------------|-------------------------|
| Golden Plover | (600) | 1500 | (420) | 2500 | 18000 |
| Ringed Plover | (240) | 48 | (0) | 300 | 500 |

| | | | | | |
|---------------------|----------|--------|----------|-------|-------|
| Grey Plover | (180) | 200 | (189) | 430 | 1500 |
| Dunlin | (55,000) | 50,000 | (40,000) | 5300 | 14000 |
| Black Tailed Godwit | (1150) | 630 | (173) | 70 | 700 |
| Curlew | (2590) | 2480 | (1428) | 1200 | 3500 |
| Redshank | (1600) | 1450 | (2300) | 1100 | 1500 |
| Lapwing | (4970) | 9500 | (10500) | 20000 | 20000 |

Numbers in brackets donates incomplete data-set.

10.4.4.30 During a specific bird survey undertaken in support of the ES in 2004/5, attention was also paid to use of the saltmarsh to the north of the application site. Species recorded in this area during the 2004/2005 survey included qualifying species such as Shelduck *Tadorna tadorna*, Wigeon *Anas Penelope*, Teal *Anas cracca* and Pintail *Anas acuta*, although the peak counts represented only a small proportion of their total Mersey Estuary populations.

Application Site

10.4.4.31 Winter bird surveys have been undertaken of the application site and land immediately adjacent to the application site for the 2006/7 (Appendix 10.13), 2005/6 (Appendix 10.14) and 2004/5 (Appendix 10.15) survey seasons.

10.4.4.32 The results from the 2006/7 surveys indicate that the only wading species to regularly use fields within the application site boundary was Curlew. Curlew is a Mersey Estuary SPA qualifying species. Activity was mainly concentrated in fields in the north or east of the application site.

10.4.4.33 The fields where highest numbers were recorded will be retained within the proposed development for ecological mitigation.

10.4.4.34 Small numbers of Lapwing and Redshank were also recorded within the application site boundary however both species were only recorded on an occasional basis suggesting sporadic use only. Both of these birds are also Mersey Estuary SPA qualifying species.

10.4.4.35 From the results obtained, it appears that there is no correlation between numbers of waders utilising the application site during regular high tide events. However, a greater number of Curlew were recorded on the application site during the spring hide tide in March 2007.

10.4.4.36 None of the Mersey Estuary SPA qualifying species occurred in nationally or internationally significant numbers within the application site (IE, numbers were well below the national importance thresholds for these species).

10.4.4.37 Results from the 2005/6 survey show use of the application site by Golden Plover on one date in December 2005. In addition, Curlew,

Redshank and Lapwing were also recorded within the application site boundary.

- 10.4.4.38 Results from the 2004/5 survey show use of the application site by Curlew on a regular basis. Activity was mainly concentrated in fields in the north and east of the application site. In addition, low numbers of Redshank and a single Bar-tailed Godwit (an Annex 1 species) were recorded within the application site boundary.
- 10.4.4.39 Other birds of note recorded within the application site boundary include Reed Bunting *Emberiza schoeniclus*, Linnet *Carduelis cannabina*, Skylark *Alauda arvensis*, Song Thrush *Turdus philomelos*, Tree Sparrow *Passer montanus* and Yellowhammer *Emberiza citrinella*.

Areas Adjacent to the Application Site

- 10.4.4.40 During the above survey, attention was also paid to use of the Manchester Ship Canal by bird species. The Ship Canal was found to contain no significant aggregations of water bird species however species recorded in small numbers along the canal adjacent to the application site included Curlew, Redshank, Lapwing and Black-tailed Godwit. These species are qualifying features of the Mersey Estuary SPA.

Breeding Birds

- 10.4.4.41 No records of breeding birds were received for the application site from consultees.
- 10.4.4.42 A breeding bird survey was undertaken of the application site in 2007. The methodology for this survey can be seen at Appendix 10.5. A copy of the 2007 survey report can be seen at Appendix 10.16. This survey built on survey work undertaken in 2005.
- 10.4.4.43 Species of note recorded breeding within the application site boundary during these surveys include Bullfinch *Pyrrhula pyrrhula*, House Sparrow *Passer domesticus*, Linnet, Reed Bunting, Skylark, Song Thrush, Spotted Flycatcher *Muscicapa striata*, Starling *Sturnus vulgaris*, Tree Sparrow and Yellowhammer.
- 10.4.4.44 As would be expected for the above species, bird activity was mainly restricted to suitable habitat within the application site, for example, woodland, hedgerows, ditches and scrub.
- 10.4.4.45 In addition to the above species, a Barn Owl *Tyto alba* was recorded foraging over the application site on several occasions.
- 10.4.4.46 Information received from the local Barn Owl group indicated the presence of a known roost within 0.5 km of the application site.

Terrestrial Invertebrates

- 10.4.4.47 No records of rare or notable invertebrate fauna were received for the application site from consultees.
- 10.4.4.48 An invertebrate survey of suitable terrestrial habitat within the application site was undertaken in August 2007. The survey methodology can be seen at Appendix 10.5. A full copy of the survey report can be seen at Appendix 10.17.
- 10.4.4.49 In general, species found are common and widespread throughout the British Isles. No Red Data Book, BAP, Nationally Scarce or County Rare species were found within the application site. The most significant specimen was found within fungus in woodland on site. This specimen, *Litargus connexus*, is a dead-wood indicator species, the habitat of which will be enhanced as part of the package of measures being offered by the proposals.

Aquatic Invertebrates

- 10.4.4.50 No records of rare or notable invertebrate fauna were received for the application site from consultees.
- 10.4.4.51 An aquatic invertebrate survey was undertaken of suitable habitat within the application site in May and September 2007, in order to update a previous survey undertaken in 2006. The survey methodology can be seen at Appendix 10.5. A copy of the full survey report can be seen at Appendix 10.18.
- 10.4.4.52 This survey revealed that the ditches and other water bodies within the application site did not contain any legally protected aquatic macro-invertebrate species. Three species, *Cercyon tristis*, *Helophorus fulgidicollis* and *Rhantus sultaralis* are categorised as Nationally Notable B (species estimated to occur within the range 31 to 100 10-kilometre squares of the National Grid System).
- 10.4.4.53 It can be concluded that the ditches within the application site do not exhibit a notable level of biodiversity for this group of species.
- 10.4.4.54 A full macro-invertebrate survey was not undertaken of the Manchester Ship Canal however an assessment of its suitability to support aquatic invertebrates was undertaken and netting was used where substrate allowed (the report is set out at Appendix 10.19).
- 10.4.4.55 No significant habitat or invertebrate fauna was recorded within this water body and levels of contaminants, and particularly the lack of aquatic vegetation, mean that it is unlikely that the canal supports significant invertebrate fauna at any time of the year.

Other Species

Brown Hare

- 10.4.4.56 No records for Brown Hare *Lepus europaeus* were received from consultees for the application site however Brown Hare have been recorded in fields to the east of the application site.
- 10.4.4.57 Suitable habitat for Brown Hare exists within the application site and a single animal was seen during the Phase 1 survey assessment.

Eels

- 10.4.4.58 No records of Eel *Anguilla anguilla* were received from consultees for the application site however the Environment Agency recorded Eel within the Hornsmill Brook, to the south of the Kemira Works, in 2005.
- 10.4.4.59 Given that suitable habitat exists on site for this species, it is likely that they are present within the ditch network however no specific surveys have been undertaken to date to confirm this.

Fish

- 10.4.4.60 No records of rare or notable fish were received from consultees for the application site.
- 10.4.4.61 During aquatic surveys on site, Stickleback were recorded within the ditch network on site.
- 10.4.4.62 Although no surveys for fish were undertaken within the Manchester Ship Canal, conditions here are considered unsuitable.

10.5 ECOLOGICAL EVALUATION & IDENTIFICATION OF KEY IMPACTS (PRE AND POST MITIGATION)

10.5.1 This section identifies all potentially significant likely effects, both during construction and post construction (positive and negative), such that mitigation can be identified where necessary.

10.5.2 The Principles of Site Evaluation

10.5.2.1 The methods and standards for site evaluation within the British Isles have remained those defined in 'A Nature Conservation Review' by Ratcliffe (1977)⁹. These are broadly used across the United Kingdom to rank sites, so priorities for nature conservation can be attained. Current SSSI designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.

10.5.2.2 In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of typicalness, potential value, intrinsic appeal, recorded history and the position within ecological/geographical units are also incorporated into the ranking procedure.

10.5.2.3 Any assessment should not judge sites in isolation from others, since several habitats may combine to make it worthy of importance to nature conservation.

10.5.2.4 Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with a comparatively poor species diversity, common in the south of England may be of importance at its northern limits, say in the border county.

10.5.2.5 In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP). The Cheshire BAP highlights a number of habitats and where these occur within the application site, these are highlighted below.

10.5.2.6 Levels of importance can be graded at the international, national, regional, county or local level and in terms of low, medium or high value.

10.5.3 Designated Sites

Statutory Wildlife Sites

10.5.3.1 There are no sites of international importance such as Special Protection Areas (SPAs) or Sites of Special Scientific Interest (SSSI) within the application site boundary.

10.5.3.2 The nearest statutory site is the Mersey Estuary SSSI, which is also designated as the Mersey Estuary SPA. At its closest point to

⁹ Ratcliffe, D A (1977). *A Nature Conservation Review: the Selection of Sites of Biological National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

the application site, the SPA lies 79 metres from the northern boundary, abutting the northern edge of the Manchester Ship Canal (see Figure 10.2).

10.5.3.3 This site is of value at the international level.

Complete Development Footprint

10.5.3.4 It is predicted that the proposed development will have no direct impact upon the SPA from physical loss (land-take) or physical damage.

10.5.3.5 It is considered that the proposed development could have an indirect impact on the qualifying features of the Mersey Estuary SPA, pre-mitigation.

Impacts: Noise from construction activity causing short-term disturbance to Annex 1 bird species using adjacent areas of the SPA, particularly during work along the Manchester Ship Canal.

Noise from the operational phase of the proposed development causing long-term disturbance to Annex 1 bird species within the SPA, particularly along the Manchester Ship Canal (increased shipping movement along the canal, noise from cargo loading facility).

Toxic contamination – deposition of dust from construction activity smothering supporting habitat for Annex 1 bird species within the SPA.

Toxic contamination – deposition of non-synthetic compounds created from the operational phase of the proposed development on vegetation within the SPA, reducing the quality of supporting habitat for Annex 1 bird species.

Artificial lighting from the operational phase of the proposed development spilling on to areas of the SPA to the north of the application site, altering roosting behaviour of Annex 1 bird species on areas of the SPA adjacent to the application site.

Construction cranes (max height 110m for short period during stack construction) possible interference with bird flight lines, possible obstacle during flocks of waders/waterfowl arriving during nocturnal hours. Worst case position, seven cranes working at any one time with heights of 20m to 70m.

Two operational Cranes adjacent to Manchester Ship Canal at 37m. Light spill associated with crane lighting.

Land-take of supporting habitat for Annex 1 bird species within the application site boundary (approximately 58 hectares, designated as SBI for over-wintering birds) could potentially impact upon the qualifying bird species of the SPA by reducing potential foraging area.

- 10.5.3.6 Prior to mitigation, impacts are **negative** at the **international level** and are of **minor significance**.

Mitigation: The Manchester Ship Canal, and areas of semi-natural habitat retained within the proposed development, will act to buffer the SPA from the majority of noise created through construction of the proposed development. Construction of the berth along the canal may cause short-term disturbance to qualifying bird species on the SPA. In order to mitigate this impact, if work is to be undertaken during the winter months when qualifying bird species are present in significant numbers, no work shall take place at high tide, when flocks of birds are pushed off the mud-flats and onto suitable habitat above the high-water mark, for example, adjacent to the Ship Canal. In addition, as the impact of such disturbance is likely to be greater when birds are subject to lower temperatures (due to the energy required to keep warm), no construction activity will take place if it would give rise to any increase, however short above the ambient noise level (45Bd) if the temperature falls below –3 degrees Celsius.

Due to the distance of the proposed development from the SPA, and the buffer created by the Manchester Ship Canal, it is predicted that noise from the operational phase of the proposed development would not be likely to have a significant impact upon the qualifying features of the SPA. In addition, existing noise sources associated with the canal and surrounding industry mean that birds within the Mersey Estuary SPA are accustomed at least in part to noise and disturbance. The proposed development will result in a negligible increase in noise and disturbance within this area.

Due to the distance between the SPA and construction activity, it is predicted that there will not be any significant impact from dust deposition on habitats within the SPA. Particulate levels will be monitored throughout the construction phase of the development to ensure that they do not

exceed recommended guidelines and normal avoidance practices will be undertaken, E.G, wheel washes, thereby reducing the potential impact on surrounding habitat.

Based on assessments of atmospheric concentrations of oxides of Nitrogen (NOx), Sulphur dioxide, Hydrogen fluoride and the deposition of Nitrogen, no assessment limits will be exceeded by the proposed development and there is therefore predicted to be no significant impact from the atmospheric emissions from the development nor from deposition of non-synthetic compounds on the SPA. Air Quality monitoring and mitigation standards are detailed in Chapter 8, section 8.4.7 of this ES.

Due to areas of semi-natural habitat to be retained within the proposed development, and the distance of the SPA from the main areas of development, lighting within the application site is unlikely to have a significant impact upon qualifying bird species on the adjacent SPA.

However, lighting associated with the new canal berth on the Manchester Ship Canal could potentially impact upon wintering and migratory bird species using the SPA to the north of the Manchester Ship Canal. This lighting is required to illuminate the canal wharf and will not illuminate the northern bank of the canal, adjacent to the SPA. In order to mitigate any potential impact from this lighting however, lighting along the canal will use low-pressure sodium lamps or their equivalent, in preference to high-pressure sodium or mercury lamps. Where mercury lamps are used, lamps will be fitted with UV filters. In addition, there will be minimal use of upward lighting and restriction of light to selected areas by fitting hoods that direct the light below the horizontal plane (preferably an angle less than 70 degrees).

Cranes during construction and those used during the operation of the development are not in the main approach lines of wintering flocks entering the SPA. Lighting associated with the crane structure will need to be Low Pressure Sodium or equivalent.

Although the site has been shown to be of limited use to any of the qualifying species of the SPA, mitigation will include retention of 31.5 hectares of existing semi-natural habitat for habitat creation and enhancement. Details of this habitat creation,

enhancement and management can be seen in Appendix 10.20. In summary, this will include creation of a series of shallow scrapes within existing fields to provide additional wetland features, seeding/planting of areas to increase species diversity, introduction of a management regime specifically aimed at encouraging key bird species and restrictions on public access in this area. In addition, a further 24.5 hectares of land will be set-aside for landscape planting and creation of a community woodland/ecology park.

- 10.5.3.7 Post-mitigation, there are predicted to be **no significant impacts** on the Mersey Estuary SPA, though a small impact is considered likely due to air quality.
- 10.5.3.8 In the long-term, there is predicted to be a **minor positive** impact at an **international level** on qualifying bird species of the SPA, as a result of habitat enhancements within the application site boundary, which will provide additional feeding and loafing areas particularly at high tide.

DBERR Application

- 10.5.3.9 Impacts are as set out under the Complete Development Footprint though mitigation and habitat creation area is reduced to 25hectares. However the area not included offers less opportunities for wintering feeding or loafing birds.

CCC Application

- 10.5.3.10 Impacts for the CCC Application are predicted to be as above, with the exception of any potential impacts on air quality/deposition of non-synthetic compounds, as the RDF plant does not form part of this application. Mitigation remains as for the CDF.

Non-Statutory Wildlife Sites

- 10.5.3.11 There is one Site of Biological Importance (SBI) located within the application site boundary (see Figure 10.2). Frodsham, Helsby and Ince Marshes SBI is a Grade A site designated for ornithological interest and localised botanical diversity in the ditch system.
- 10.5.3.12 The 1160 hectare site comprises land reclaimed from the Mersey Estuary following construction of the Manchester Ship Canal. Approximately 114 hectares of the SBI falls within the application site boundary. The majority of the remaining area (1046 hectares) lies to the east of the application site, with a small portion of the SBI lying to the south-west of the application site.
- 10.5.3.13 This site is of value at the county level.

Complete Development Footprint

10.5.3.14 The development proposals would have a direct impact on the SBI from land-take.

Impacts: Loss of approximately 58 hectares of SBI to the proposed development. 31.5 hectares to be retained for ecological mitigation and SUDS. 24.5 hectares will comprise the community woodland/ecology park and landscape proposals.

Potential disturbance to remaining areas of the SBI within the application site boundary from construction activity.

However, the SBI (certainly that within the CDF) has been shown to be of rather limited value and its value at the county level would appear not to be supported by the comprehensive surveys undertaken of the application site.

10.5.3.15 Prior to mitigation, impacts are **negative** at the **county level** and are of **moderate significance**.

Mitigation: Mitigation for a loss of area of SBI to the proposed development includes retention and enhancement of approximately 31.5 hectares of SBI within the application. This area will be enhanced for its conservation value and managed in the long-term for ecological gain. It should be noted that the area of SBI within the application site is heavily disturbed through agricultural practice, drainage and flood control and as such, habitats present are in themselves of little ecological value. Although small numbers of Annex 1 bird species utilise the site to some degree, it is not thought that loss of areas of the SBI to the proposed development would affect the overall integrity of the SBI. In actual fact, habitat enhancements will provide more suitable habitat within the application site and an increased foraging resource in the long-term.

A further 24.5 hectares of the SBI will be retained within the application site for landscape proposals, including a community woodland/ecology park.

All areas of the SBI due to be retained within the proposed development and immediately adjacent to the application site, will be fenced-off or marked with high visibility tape during construction to prevent encroachment into these areas by construction machinery. No construction

machinery or materials will be stored within these areas at any point during the development.

10.5.3.16 Post mitigation, the area of SBI retained will be significantly enhanced, such that rather limited quality habitats will be replaced by habitats specifically agreed to provide an increase in biodiversity and enhance opportunities for bird species including qualifying species of the SPA.

10.5.3.17 Post mitigation, impacts are **positive** at the **county level** and of **moderate significance**.

CCC Application

10.5.3.18 The CCC development proposals will have a direct impact on the SBI from land-take.

Impacts: Permanent loss of approximately 50.6 hectares of SBI to the proposed development.

Potential disturbance to remaining areas of the SBI within the CCC application site from construction activity.

10.5.3.19 Prior to mitigation, impacts are **negative** at the **county level** and are of **moderate significance**.

Mitigation: As set out under CDF.

10.5.3.20 Post mitigation, impacts are **positive** at the **county level** and of **moderate significance**.

DBERR Application

10.5.3.21 The DBERR development proposals would have a direct impact on the SBI from land-take.

Impacts: Loss of approximately 19 hectares of SBI to the proposed development.

Potential disturbance to remaining areas of the SBI within the DBERR application site from construction activity.

10.5.3.22 Prior to mitigation, impacts are negative at the **county level** and are of **minor significance**.

Mitigation: As set out under the CDF, with the exception of the community woodland/ecology park and area B (habitat creation and management plan Appendix 10.20) 25 hectares of mitigation in total with the remaining left as is within the DBERR development.

10.5.3.23 Post mitigation, impacts are **positive** at the **county level** and of **major significance**.

10.5.4 Habitats

10.5.4.1 Further details on landscape proposals for the proposed development can be seen in Chapter 12 – Landscape and Visual Impact.

10.5.4.2 Full details of habitat creation, enhancement and management can be seen in the Habitat Creation and Management Plan (Appendix 10.20).

Semi-natural Broadleaved Woodland

Complete Development Footprint

10.5.4.3 Semi-natural broadleaved woodland is present in three areas within the application site boundary. This habitat is generally species poor and is not listed on the Ancient Woodland Inventory

10.5.4.4 This habitat is of value at the local level.

10.5.4.5 The development proposals will have a direct impact on this habitat.

Impacts: Feature 1 and 2 will be retained within the proposed development. Feature 3 will be partially lost to the proposed development

Potential disturbance to remaining areas of this habitat during the construction phase.

10.5.4.6 Prior to mitigation, impacts are negative at the **local level** and are of **minor significance**.

Mitigation: Additional planting of native species within the proposed development will compensate for loss of woodland habitat (including Native Black Poplar, an LBAP species). In addition, an area of woodland habitat will be created in the west of the application site, using a native species mix (Community Woodland/ecology park and Western Landscaping).

All areas of habitat due to be retained within the proposed development will be fenced-off or marked with high visibility tape during construction to prevent encroachment into these areas by construction machinery. No construction machinery or materials will be stored within these areas at any point during the development.

- 10.5.4.7 Post mitigation, impacts are **positive** at the **local level** and of **moderate significance**.

CCC Application

- 10.5.4.8 Impacts and mitigation as above.

DBERR Application

- 10.5.4.9 Impacts as set out under CDF. Mitigation will include landscape planting in the west of the development area however does not include establishment of the Community Woodland/Ecology Park.

- 10.5.4.10 Post mitigation, impacts are therefore **positive** at the **local level** and of **minor significance**.

Broadleaved Plantation Woodland

Complete Development Footprint

- 10.5.4.11 Plantation woodland is present in four areas in the south of the application site.

- 10.5.4.12 This habitat is of low ecological value and is considered to be important at the local context only.

- 10.5.4.13 The development proposals will have a small-scale impact upon this habitat within the application site.

Impacts: The majority of features 4, 5, 6 and 7 will be retained within the proposed development. However, there will be some small-scale loss of plantation woodland within the application site as a whole.

Potential disturbance to remaining areas of this habitat during the construction phase.

- 10.5.4.14 Prior to mitigation, impacts are negative at the **local level** and are of **negligible significance**.

Mitigation: Additional planting of native species within the proposed development (including Native Black Poplar, an LBAP species) will compensate for loss of woodland habitat. In addition, an area of woodland habitat will be created in the west of the application site, using a native species mix.

All areas of habitat due to be retained within the proposed development will be fenced-off or marked with high visibility tape during construction to prevent encroachment into these areas by construction machinery. No construction

machinery or materials will be stored within these areas at any point during the development.

- 10.5.4.15 Post mitigation, impacts are **positive** at the **local level** and of **moderate significance**.

CCC Application

- 10.5.4.16 Impacts and mitigation as set out under CDF.

DBERR Application

- 10.5.4.17 Impacts for this development would be limited to small-scale loss of plantation woodland around Features 4, 5 and 6. Feature 7 lies outside the boundary of this application. Mitigation will include landscape planting in the west of the development area however does not include establishment of the Community Woodland/ Ecology Park or area B.

- 10.5.4.18 Post mitigation, impacts are therefore **positive** at the **local level** and of **minor significance**.

Dense and Scattered Scrub

Complete Development Footprint

- 10.5.4.19 Dense and scattered scrub is present throughout the site. Dense stands are located along the proposed rail-link in the south of the application site and along the Manchester Ship Canal in the north of the application site.

- 10.5.4.20 This habitat is generally species poor and of low botanical diversity however it does provide suitable habitat for certain faunal groups. This habitat is therefore considered to be of value at the site level only.

- 10.5.4.21 The development proposals will have an impact upon this habitat within the application site.

Impacts: There will be some small-scale loss of scrub habitat within the application site as a whole.

Potential disturbance to remaining areas of this habitat during the construction phase.

- 10.5.4.22 Prior to mitigation, impacts are **negative** at the **site level** and are of **negligible significance**.

Mitigation: Additional planting of scrub habitat of a native species mix within the proposed development will more than compensate for loss of this habitat within the application site.

All areas of habitat due to be retained within the proposed development will be fenced-off or marked with high visibility tape during construction to prevent encroachment into these areas by construction machinery. No construction machinery or materials will be stored within these areas at any point during the development.

- 10.5.4.23 Post mitigation, impacts are **positive** at the **site level** and of **minor significance**.

CCC Application

- 10.5.4.24 Impacts and mitigation as set out under CDF.

DBERR Application

- 10.5.4.25 No material changes to the predicted impacts. Mitigation will be as set out under the CDF.

Hedgerows and Mature Trees

Complete Development Footprint

- 10.5.4.26 There are a total of 57 hedgerows within the application site boundary, with a total approximate length of 9000m.

- 10.5.4.27 The majority of these hedgerows are species-poor and defunct. It is considered unlikely that any of the hedgerows within the application site boundary would qualify as important under the Hedgerow Regulations (1997).

- 10.5.4.28 Hedgerows on site are considered to be of value at the site level only.

- 10.5.4.29 Mature trees are present within hedgerows or woodland within the application site boundary. None are considered to be over-mature or veteran and are therefore of value at the site level only.

- 10.5.4.30 The development proposals would have an impact on these habitats.

Impacts: Loss of 25 hedgerows, totalling 4500m out of 9000m.

Potential disturbance to remaining stretches of hedgerow from construction activities.

Loss of a small number of mature trees within the application site boundary as a result of the proposed development.

- 10.5.4.31 Prior to mitigation, impacts in the short-term are **negative** at the **site level** and are of **moderate significance**.

Mitigation: Proposed planting in the form of screening and structure planting will compensate for some loss of hedgerow habitat on site. New hedgerows will also be planted in areas set aside for ecological mitigation (see Figure 12.5 – Chapter 12 – Landscape).

All areas of habitat due to be retained within the proposed development will be fenced-off or marked with high visibility tape during construction to prevent encroachment into these areas by construction machinery. No construction machinery or materials will be stored within these areas at any point during the development.

Planting of native, standard trees within the proposed development will compensate for loss of mature trees within the application site boundary in the long-term, once these specimens reach maturity.

Retained hedgerows within the application site boundary will be subject to suitable management in the long-term and where necessary, will be gapped up with native species to increase their species-diversity.

10.5.4.32 Post mitigation, impacts are **neutral**.

CCC Application

10.5.4.33 Impacts and mitigation as set out under CDF, with the exception that 23 hedgerows will be removed as opposed to 25.

DBERR Application

10.5.4.34 Impacts and mitigation as set out under CDF, with the exception that only 10 hedgerows will be removed as opposed to 25. The majority of these hedgerows will be replaced around the RDF plant, using a native species mix.

10.5.4.35 Post mitigation, impacts are **positive** at the **site level** and of **minor significance**.

Unimproved Grassland

Complete Development Footprint

10.5.4.36 Unimproved grassland is present in narrow strips along the banks of the disused railway line in the south of the application site (feature 8).

10.5.4.37 Unimproved neutral grassland is a Cheshire BAP habitat and as such is of importance at the county level.

- 10.5.4.38 The development proposals would have an impact upon this habitat.

Impacts: Loss of some small areas of existing unimproved grassland within the application site as a result of the proposed development

Potential disturbance to remaining habitat during construction work.

Creation of new areas of grassland of a native-species mix within the proposed development.

- 10.5.4.39 Prior to mitigation, impacts are **negative** in the short-term at the **county level** and, given the small areas of habitat affected, are of **negligible significance**.

Mitigation: All areas of habitat due to be retained within the proposed development will be fenced-off or marked with high visibility tape during construction to prevent encroachment into these areas by construction machinery. No construction machinery or materials will be stored within these areas at any point during the development.

Although the main ecological area within the proposed development focuses on enhancements for ornithological interest, new areas of grassland will be created within areas designated for mitigation and SUDS, and within the proposed development. These grasslands will be seeded with a native wildflower-mix. Road verges, railway embankments and areas of amenity grassland will be sown with a wildflower mix tolerant of mowing.

- 10.5.4.40 Post mitigation, impacts are **positive** at the **county level** and of **moderate significance**.

CCC Application

- 10.5.4.41 Impacts and mitigation as set out under CDF.

DBERR Application

- 10.5.4.42 Impacts and mitigation as set out under CDF.

Semi-improved Neutral Grassland

Complete Development Footprint

- 10.5.4.43 Semi-improved neutral grassland is present in the north of the application site (features 9 and 10), in narrow strips along the edge of the ship canal and along a farm track.

10.5.4.44 Semi-improved grassland within the application site boundary is of importance at the site level.

10.5.4.45 The development proposals would have an impact upon this habitat.

Impacts: Loss of some small areas of existing semi-improved grassland within the application site as a result of the proposed development

Potential disturbance to remaining habitat during construction work.

Creation of new areas of grassland of a native-species mix within the proposed development.

10.5.4.46 Prior to mitigation, impacts are **negative** in the short-term at the **site level** and are of **negligible significance**.

Mitigation: All areas of habitat due to be retained within the proposed development will be fenced-off or marked with high visibility tape during construction to prevent encroachment into these areas by construction machinery. No construction machinery or materials will be stored within these areas at any point during the development.

Although the main ecological area within the proposed development focuses on enhancements for ornithological interest, new areas of grassland will be created within areas designated for mitigation and SUDS, and within the proposed development. These grasslands will be seeded with a native wildflower-mix. Road verges, railway embankments and areas of amenity grassland will be sown with a wildflower mix tolerant of mowing.

10.5.4.47 Post mitigation, impacts are **positive** at the **site level** and of **minor significance**.

CCC Application

10.5.4.48 Impacts and mitigation as set out under CDF.

DBERR Application

10.5.4.49 Impacts and mitigation as set out under CDF.

Improved grassland

Complete Development Footprint

- 10.5.4.50 32 fields within the application site boundary comprise improved grassland, which is primarily used for grazing livestock.
- 10.5.4.51 Lowland grazing marsh is a UK BAP priority habitat and these fields are shown as such on the National Biodiversity Network and Natural England Habitat Inventory.
- 10.5.4.52 Fields present within the application site boundary are however species poor, agriculturally improved and heavily disturbed by agricultural practice. These fields are however used by small numbers of Mersey Estuary SPA qualifying bird species, such as Curlew. However, there is no evidence from the surveys that these fields are relied upon or are essential to any of the qualifying species listed in the SPA citation.
- 10.5.4.53 It is therefore considered that the improved grassland present within the application site is currently of value at the county level.
- 10.5.4.54 The development proposals would have an impact on this habitat.

Impacts: Approximately 20 fields of improved grassland will be lost to the proposed development.

Potential disturbance to remaining habitat during construction work.

- 10.5.4.55 Prior to mitigation, impacts are negative at the county level and are of **minor significance**.

Mitigation: 8 fields of improved grassland will be retained within the proposed development as ecological areas and SUDS wetland. These fields will be ecologically enhanced to increase their value for local fauna (including SPA qualifying bird species) and this will increase the biodiversity value of this habitat within the application site boundary.

Mitigation areas will be managed in the long-term to increase their conservation value and management techniques employed will be sympathetic to protected, rare and notable fauna and help achieve biodiversity gains in this area.

All areas of habitat due to be retained within the proposed development will be fenced-off or marked with high visibility tape during construction to prevent encroachment into these areas by construction machinery. No construction machinery or materials will be stored within these areas at any point during the development.

- 10.5.4.56 Post mitigation, impacts are **positive** at the **county level** and of **minor significance**.

CCC Application

- 10.5.4.57 Impacts and mitigation as set out under CDF except that 17 fields will be lost as opposed to 20.

DBERR Application

- 10.5.4.58 Impacts include the loss of 8 fields as opposed to 20. Prior to mitigation, impacts are **negative** at the **county level** and are of **negligible significance**. Mitigation will, however, be as set out under CDF. Post-mitigation impacts are **positive** at the **county level** and of **moderate significance**.

Arable

Complete Development Footprint

- 10.5.4.59 There are a total of 13 arable fields within the application site boundary.
- 10.5.4.60 Although of no botanical value, these fields provide a foraging resource for fauna within the application site and surrounding area. They are therefore of value at the site level.
- 10.5.4.61 The development proposals would have an impact upon this habitat.

Impacts: Loss of 6 fields of arable habitat within the application site boundary.

Potential disturbance to remaining habitat during construction work.

- 10.5.4.62 Prior to mitigation, impacts are **negative** at the **site level** and of **negligible significance**.

Mitigation: Retention of 5 fields of arable land within the proposed development. Management of these areas in the long-term for ecological benefit, for example, over-winter stubble for flocks of birds.

- 10.5.4.63 Post mitigation, impacts are **positive** at the **site level** and of **minor significance**.

CCC Application

- 10.5.4.64 Impacts and mitigation as set out under CDF, except for retention of 1 further field of arable land within the proposed development.

DBERR Application

- 10.5.4.65 Impacts and mitigation as set out under CDF, except for retention of a further 5 arable fields within the proposed development.

Tall ruderal and swamp vegetation

Complete Development Footprint

- 10.5.4.66 Tall ruderal and swamp vegetation occurs in small areas across the application site, either as a mosaic or as distinct areas bordering other habitats.
- 10.5.4.67 Reed-beds are a UK BAP Priority habitat however it is considered that the size and condition of these features within the application site boundary make them of value at the site level only.
- 10.5.4.68 The development proposals would have an impact upon these habitats within the application site.

Impacts: Loss of small areas of tall ruderal and swamp vegetation within the application site.

Potential disturbance to remaining habitat during construction work.

- 10.5.4.69 Prior to mitigation, impacts are **negative** at the **site level** and of **no significance**.

Mitigation: Creation of areas of swamp and tall ruderal vegetation within areas retained for ecological mitigation and SUDS within the proposed development.

All areas of habitat due to be retained within the proposed development will be fenced-off or marked with high visibility tape during construction to prevent encroachment into these areas by construction machinery. No construction machinery or materials will be stored within these areas at any point during the development.

- 10.5.4.70 Post mitigation, impacts are **positive** at the **site level** and of **negligible significance**.

CCC Application

- 10.5.4.71 Impacts and mitigation as set out under CDF.

DBERR Application

- 10.5.4.72 Impacts and mitigation as set out under CDF.

Standing Water (Ponds and Temporary Pools)

Complete Development Footprint

- 10.5.4.73 Standing water is present in temporary pools and one permanent pond within the application site boundary.

- 10.5.4.74 Ponds are a Cheshire BAP Priority habitat. This feature is therefore of value on a county level. Temporary pools are of value at the site level only.

Impacts: The majority of the temporary pools will be lost. The pond in the south of the application site will remain within the proposed development.

- 10.5.4.75 Prior to mitigation, impacts are **negative** at the **site level** and of **negligible significance**.

Mitigation: Extensive creation of new wetland, including standing water, within ecological mitigation and SUDS area within the proposed development.

- 10.5.4.76 Post mitigation, impacts are **positive** at the **county level** and of **major significance**.

CCC Application

- 10.5.4.77 Impacts and mitigation as set out under CDF.

DBERR Application

- 10.5.4.78 Impacts and mitigation as set out under CDF.

Running water

Complete Development Footprint

- 10.5.4.79 There are approximately 132 stretches of ditch within the application site boundary, totalling approximately 22,500 metres.

- 10.5.4.80 Some of these ditches act as flood drainage and permanently hold water, others hold water for part of the year, while others are defunct and retain no water.

- 10.5.4.81 The ditches within the application site are the most ecologically valuable feature within the application site and are of value on a county level, due to the diversity of species they support.

- 10.5.4.82 The development proposals would have an impact on the ditch system within the application site.

Impacts: Loss of approximately 4800m of poor quality, mainly dry ditches across the application site.

Potential disturbance to remaining habitat during construction work.

Potential for contaminants (either silt or chemicals) to enter the ditch system from the

construction and operational phase of the proposed development.

10.5.4.83 Prior to mitigation, impacts are **negative** at the **county level** and of **moderate significance**.

Mitigation: Approximately 5700m of ditches will be created within the mitigation areas and 10,900m of ditches will be retained or created elsewhere around the site. The ‘main drains’ present within the application site will be retained and enhanced within the proposed development.

All watercourses due to be retained within the proposed development will be fenced along a buffer zone during construction, in order to restrict extent of disturbance/damage from construction machinery.

Specific engineering safeguards will be employed in order to ensure that contaminants, either through laden silts or through chemical pollutants, do not enter any of the watercourses (see Chapter 7 – Hydrology Hydrogeology), either during construction or during the operational phase of the development.

In order to prevent run-off from the construction phase of this development entering any of the watercourses, all materials and arisings from construction work will be stored away from the watercourses and within a bunded areas, where necessary, following recommended Pollution Prevention Guidelines produced by the Environment Agency.

A spill kit will be available on site in the unlikely event of a pollution incident and construction staff will be trained in how to use it, with material replenished if used.

During the Operational Phase of the proposed development, de-watering activities discharged to any watercourse will require consent and licenses from the Environment Agency. Conditions are likely to be attached to any consents or licenses. This issue has been dealt with in more detail in Chapter 7 – Hydrology and Hydrogeology.

A SUDS will be constructed on site that will aid floodwater control. The SUDS scheme will be designed by hydrologists and ecologists to maximise wildlife gains. Detailed design of any wetland habitat will be further developed in consultation with Natural England, Cheshire

*County Council, Cheshire Wildlife Trust and the
Environment Agency.*

- 10.5.4.84 Post mitigation, impacts are **positive** at the **county level** and of **minor significance**.

CCC Application

- 10.5.4.85 Impacts and mitigation as above, except for a small reduction in the total length of ditches affected (approximately 4550m).

DBERR Application

- 10.5.4.86 To allow construction of the RDF plant and associated road and rail link, there will be a loss of approximately 800m of poor quality ditches across the application site. Prior to mitigation, impacts are **negative** at the **county level** and of **minor significance**.

- 10.5.4.87 Mitigation will be as set out under CDF and as such impacts post-mitigation will be **positive** at the **county level** and of **moderate significance**.

Manchester Ship Canal

Complete Development Footprint

- 10.5.4.88 The Manchester Ship Canal is a significant waterway located along the northern boundary of the application site. This feature appears to have low ecological value, due to the absence of aquatic vegetation, as a result no detailed surveys were undertaken. It does however provide a corridor for fauna in the locality and, in this instance, acts as an effective buffer between the site and the SPA.
- 10.5.4.89 The Manchester Ship Canal is considered to be of value at the site level, although outside of the riparian zone, land abutting the section of the canal adjacent to the application site is designated as SPA, SSSI or SBI.
- 10.5.4.90 The development proposals would have an impact on the Manchester Ship Canal.

Impacts: Potential disturbance to habitat during construction work, particularly during construction of the canal berth.

Potential for contaminants (either silt or chemicals) to enter Manchester Ship Canal from the construction and operational phase of the proposed development.

Potential for waste to enter the Ship Canal from accidental spillage from containers or barges during the operational phase of the development.

- 10.5.4.91 Prior to mitigation, impacts are **negative** at the **site level** and of **moderate significance** (worse case).

Mitigation: Specific engineering safeguards will be employed in order to ensure that contaminants, either through laden silts or through chemical pollutants, do not enter any of the watercourses (see Chapter 7 – Hydrology Hydrogeology), either during construction or during the operational phase of the development.

In order to prevent run-off from the construction phase of this development entering any of the watercourses, all materials and arisings from construction work will be stored away from the watercourses and within a bunded areas, where necessary, following recommended Pollution Prevention Guidelines produced by the Environment Agency.

A spill kit will be available on site in the unlikely event of a pollution incident and construction staff will be trained in how to use it, with material replenished if used.

During the Operational Phase of the proposed development, de-watering activities discharged to any watercourse will require consent and licenses from the Environment Agency. Conditions are likely to be attached to any consents or licenses. This issue has been dealt with in more detail in Chapter 7 – Hydrology and Hydrogeology.

- 10.5.4.92 Post mitigation, there are predicted to be no impacts on the Manchester Ship Canal.

CCC Application

- 10.5.4.93 Impacts and mitigation as set out under CDF.

DBERR Application

- 10.5.4.94 Impacts and mitigation as set out under CDF.

Existing buildings

- 10.5.4.95 No significant impacts predicted.

Invasive Species

- 10.5.4.96 Areas of Indian Balsam within the application site will be identified and eradicated prior to the commencement of construction work,

in order to prevent spread of this species across the application site during construction.

10.5.5 Impacts on Protected Species

Badger

- 10.5.5.1 Following best practice and in the interests of animal welfare, the evaluation of impacts on this species is contained within the Confidential Badger Appendix (10.9). This information is not made available for public consumption.

Bats

- 10.5.5.2 **Legislation.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 and are also included in Schedule 2 of the Conservation (Natural Habitats &c.) Regulations 1994. These include provisions making it an offence to:

- Intentionally kill, injure or take (capture) bats;
- Intentionally or recklessly disturb bats in a roost or any other structure or place it uses for shelter or protection;
- Intentionally or recklessly damage, destroy or obstruct access to bat roosts even if bats are not in residence.

- 10.5.5.3 Should development works affect a roost then Natural England should be consulted, and if necessary any works undertaken under a licence.

- 10.5.5.4 There are 16 breeding bat species in Britain. Many of them are considered threatened due to a variety of factors including habitat loss and disturbance/damage to roosts. Of these 16 species, a number regularly use buildings and trees as roost sites.

- 10.5.5.5 Pipistrelle bat is a Cheshire BAP species.

- 10.5.5.6 **Activity.** Surveys of the application site found that a small number of common species of bat regularly use features within the application site boundary for foraging or commuting. Bat species recorded include Common Pipistrelle, Soprano Pipistrelle *Pipistrellus pygmaeus* and Noctule.

- 10.5.5.7 In addition, 9 trees within the application site boundary were assessed as having potential for roosting bats.

- 10.5.5.8 The site is considered to be of value at the local level for nationally and internationally protected bat species. However, as several buildings along the Manchester Ship Canal were not surveyed for

Bats this assessment assumes a worse case of a small roost of Common Bat Species.

Complete Development Footprint

- 10.5.5.9 The development proposals would have an impact on bat species within the application site.

Impacts: Some permanent loss of suitable foraging and commuting habitat within the application site boundary however suitable habitat will be created within the proposed development, of a higher quality to that lost, which will offset this loss.

Potential for removal of 5/6 mature trees within the application site that display features suitable for roosting bat. Possible roost site in buildings along canal.

Short-term disturbance to remaining areas of foraging and commuting habitat during construction.

Potential disturbance to retained foraging and commuting corridors in the long-term from lighting associated with the proposed development.

- 10.5.5.10 As no roosts are present on site, and as suitable foraging habitat exists adjacent to the application site boundary, prior to mitigation impacts are predicted to be **negative** at the **national level** and of **minor significance**.

Mitigation: Any mature trees identified as having potential for bats, due to be removed as part of the proposed development, will be surveyed by an experienced ecologist prior to removal to ensure that no bat roosts are present.

In the event that a bat roost is found, a licence from Natural England will be sought in order to fell the tree. As part of this licence application, a mitigation strategy relevant to the number and species of bat will be prepared. Even if bats, or evidence of use by bats, are not found, a precautionary approach will be adopted. Trees will be felled using a soft-felling technique whereby limbs are cut and lowered to the ground. These are then left for two days before being cut-up and removed. This allows any bats that may be present inside the tree time to fly out of their own accord.

Following an emergent survey of the buildings along the canal, if a small roost is identified, additional roost facilities will be provided, before any interference or demolition. Such works would be undertaken with consultation with Natural England.

The development will be phased to reduce the impact of disturbance on species within and adjacent to the application site. Areas proposed for mitigation will be created/enhanced in the first instance, to ensure that suitable foraging areas are available from the start of development.

Lighting within the proposed development will utilise low-pressure sodium lamps in preference to high-pressure sodium or mercury lamps along habitat boundaries (for example, along the edges of the mitigation area, hedgerows or woodland) or the fitting of UV filters to mercury lamps if these are used. In addition there will be minimised use of any upward lighting and restriction of light to selected areas by fitting hoods that direct the light below the horizontal plane (preferably an angle less than 70 degrees).

The proposals incorporate a number of enhancement measures, which will be of benefit to the local bat population. Such measures will further the aims of the UK and Local BAP for this group and will include:

- *Twenty bat boxes to be erected at suitable locations within application site to offset loss of mature trees to the proposed development.*
- *Provision of enhanced foraging opportunities through the creation of new habitats within the application site (particularly species-rich hedgerows, high-quality ditches, standing water and wild flower grassland).*
- *Planting and improvement of existing hedgerows along access roads and as boundary features. A species-rich hedgerow will also be planted to link the two areas proposed for mitigation within the development.*
- *Planting of standard trees within the application site boundary that in the long-*

term will provide potential roosting opportunities for bats on site.

- *Creation of a number of habitats based around native species of local provenance to encourage invertebrate fauna on site, thereby increasing food availability.*

10.5.5.11 Post mitigation, impacts are **positive** at the **national level** and of **minor significance**.

CCC Application

10.5.5.12 Impacts and mitigation as set out under CDF.

DBERR Application

10.5.5.13 Impacts and mitigation largely as set out under CDF however a smaller area of suitable foraging and commuting habitat will be lost or disturbed as a result of this development.

Water Vole

10.5.5.14 **Legislation.** Water Vole is included in Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and receives partial protection under Section 9 (4a and 4b). This makes it an offence to:

- Damage, destroy or obstruct access to any structure or place used for shelter or protection;
- Disturb an animal whilst it is occupying such a place.

10.5.5.15 Water Vole is included in the UKBAP as a Priority Species.

Complete development Footprint

10.5.5.16 **Activity.** Surveys of the application site confirmed the presence of Water Vole along the majority of wet ditches within the application site. Activity was, however, mainly concentrated in the west central drain, the northern drain and in an area to the south-west of Marsh Lane.

10.5.5.17 No evidence of Water Vole activity was found along any of the dry or partially dry ditches within the application site boundary.

10.5.5.18 The site is considered to be of national value due to the population of nationally important Water Vole it supports.

10.5.5.19 The development proposals would have an impact on Water Vole within the application site.

Impacts: Some short-term loss of and disturbance to suitable Water Vole habitat within the application site boundary from loss of ditches to the proposed

development and culverting of some existing ditches.

Potential to kill or injure animals during work on the ditch system.

Potential for pollution to enter a watercourse/s, either during the construction or operational phase of the proposed development, thereby having a detrimental impact on the Water Vole population.

10.5.5.20 Prior to mitigation, impacts are **negative** at the **national level** and of **moderate significance**.

Mitigation: Pre-construction surveys will be undertaken at an appropriate time of year to establish the exact location of Water Vole populations within the application site. Where Water Vole will be affected by the proposed development, a detailed mitigation strategy will be prepared in consultation with Natural England. This will include, where appropriate, displacement of population, erection of exclusion fencing, habitat manipulation, trapping and translocation and monitoring.

Main drains will be retained and enhanced within the proposed development and drains of a higher quality will be created to replace those lost. Connectivity will be maximised across the site utilising both retained and newly created ditches.

Drains to be retained within the proposed development will be protected by a fenced buffer zone, to prevent encroachment into these areas from construction machinery.

The development will be phased to reduce the impact of disturbance on species within and adjacent to the application site. Areas proposed for mitigation will be created/enhanced in the first instance, to ensure that suitable foraging areas are available from the start of development.

The SUDS on site will be designed to be colonised by Water Vole, greatly increasing the availability of suitable bank habitat. All ditches will be managed in the long-term and management will be sympathetic to the Water Vole population.

Management within the ecological mitigation areas will be of benefit to this species as no pesticides or herbicides will be used. Water quality within the ditch system will improve over

the long-term, therefore increasing the quality of water Vole habitat within the application site.

For more details of habitat creation and enhancement work, see Appendix 10.20 (Habitat Creation and Management Plan).

- 10.5.5.21 Following mitigation impacts are **positive** at the **national level** in the long-term and of **moderate significance**.

CCC Application

- 10.5.5.22 Impacts and mitigation as above.

DBERR Application

- 10.5.5.23 Impacts and mitigation as above however the impact will be greatly reduced as a smaller amount of the ditch system will be affected by the proposed development.

Great Crested Newt

- 10.5.5.24 **Legislation.** Great Crested Newts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are also included in Schedule 2 of the Conservation (Natural Habitats &c.) Regulations 1994. This makes it an offence to:

- Intentionally or recklessly kill, injure or capture a Great Crested Newt;
- Intentionally or recklessly disturb a Great Crested Newt or disturb them whilst they are in a place used for shelter or protection;
- Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection.

- 10.5.5.25 Great Crested Newt is included in the UKBAP as a Priority Species.

- 10.5.5.26 **Activity.** No Great Crested Newts have been recorded within the application site.

- 10.5.5.27 No impacts are therefore predicted from the proposed development.

Birds

- 10.5.5.28 **Legislation.** All wild birds and their nests receive protection under Section 1 of the Wildlife and Countryside Act 1981 (as amended) in respect of killing and injury, and their nests, whilst being built or in use, cannot be taken, damaged or destroyed.

- 10.5.5.29 Species included on Schedule 1 of the Act (such as Barn Owl) receive greater protection and are subject to special penalties.

- 10.5.5.30 In addition, the Birds Directive (1979) allows for the designation of Special Protection Areas (SPAs) for protection of rare or vulnerable species, listed on Annex 1.
- 10.5.5.31 Skylark, Linnet, Reed Bunting, Spotted Flycatcher, Tree Sparrow, Bullfinch and Song Thrush are national BAP species.
- 10.5.5.32 Farmland seed-eating birds, Barn Owl and Lapwing are Cheshire BAP species.

Wintering Birds

Complete development Footprint

- 10.5.5.33 **Activity.** The results from winter bird surveys undertaken of the application site indicate that Curlew regularly use fields in the north and east of the application site. Curlew is a Mersey Estuary SPA qualifying species.
- 10.5.5.34 Small numbers of Lapwing, Golden Plover, Bar-tailed Godwit and Redshank were also recorded within the application site boundary however these species were only recorded on an occasional basis or in small numbers. All of these birds are Mersey Estuary SPA qualifying species. Golden Plover and Bar-tailed Godwit are listed on Annex 1 of the Birds Directive (1979).
- 10.5.5.35 The application site supports small numbers of Annex 1 bird species, and can be considered to contain some supporting habitat for the Mersey Estuary SPA. The application site is considered to be of value at the county level. The site is not considered important on a national or international level, as numbers of birds recorded within the application site boundary do not constitute a significant population (see Table 10.1 and Appendices 10.13, 10.14 and 10.15).
- 10.5.5.36 For impacts on birds within the Mersey Estuary SPA, see Statutory Designated Sites section above.
- 10.5.5.37 The development proposals would have an impact on wintering birds within the application site.

Impacts: Permanent loss of a small-area of foraging and roosting habitat for a relatively small numbers of wintering birds to the proposed development.

Short-term disturbance to over-wintering birds from noise from the construction phase of the proposed development and from movement of construction traffic through the application site.

Long-term disturbance to over-wintering bird populations from light pollution from the proposed development.

Long-term disturbance to over-wintering bird populations from noise from the operational phase of the proposed development.

10.5.5.38 Pre-mitigation, impacts are **negative** at the **county level** and are of **minor significance**.

Mitigation: In order to mitigate for loss of suitable habitat for over-wintering birds, approximately 31.5 hectares of land within the application site will be set aside for ecological mitigation and SUDS (Appendix 10.20). The following features will be included in the mitigation area:

- *A series of shallow scrapes and larger water-bodies;*
- *Annual sowing of single fields of Barley and Oil Seed Rape with 25% set-aside in certain areas;*
- *Over-wintered stubble;*
- *Reed-beds;*
- *Scattered scrub; and*
- *Species-rich hedgerows.*

Mitigation areas will have no public access.

Mitigation areas will primarily be aimed at attracting waders and wetland species however a variety of habitats will be created that will also be of benefit to farmland passerines and other bird species.

The development will be phased to reduce the impact of disturbance on species within and adjacent to the application site. Areas proposed for mitigation will be created/enhanced in the first instance, to ensure that suitable foraging areas are available from the start of development.

All lighting within the proposed development will be designed to minimise its impact on protected species (see mitigation for bats above).

Areas of suitable habitat retained or created within the application site will be buffered from the proposed development by existing or newly created hedgerows or other ecological features in order to minimise disturbance from the operational phase of the proposed development.

10.5.5.39 Following mitigation, despite a small-scale loss of suitable habitat, retained habitats will be of a higher quality, and managed in the long-term to increase their ecological value. As such, impacts are

predicted to be **positive** at the **county level** in the long-term and of **minor significance**.

CCC Application

10.5.5.40 Impacts and mitigation as set out under CDF.

DBERR Application

10.5.5.41 Impacts and mitigation as set out under CDF however the impact will be greatly reduced as a smaller amount of suitable habitat for over-wintering birds will be affected by the proposed development.

Breeding Birds

Complete Development Footprint

10.5.5.42 **Activity.** Species of note recorded breeding within the application site boundary include Bullfinch, House Sparrow, Linnet, Reed Bunting, Skylark, Song Thrush, Spotted Flycatcher, Starling, Tree Sparrow and Yellowhammer.

10.5.5.43 The above species are listed on the IUCN Red List of threatened species.

10.5.5.44 Due to the variety of bird species present, the site is considered of value at a county level for breeding birds.

10.5.5.45 For impacts on birds within the Mersey Estuary SPA, see Statutory Designated Sites section above.

10.5.5.46 The development proposals would have an impact on breeding birds within the application site.

Impacts: Permanent loss of some nesting and foraging habitat to the proposed development.

Short-term disturbance to nesting birds and potential to damage or destroy nests during site clearance work.

Long-term disturbance to nesting bird populations from light pollution from the proposed development.

Long-term disturbance to nesting birds from noise from the operational phase of the proposed development.

10.5.5.47 Pre-mitigation, impacts are **negative** at the **county level** and are of **minor significance**.

Mitigation: In order to safeguard any nesting bird species within the application site, scrub, hedgerow and tree clearance work will be undertaken outside of

the main breeding season (March-August inclusive). Should this not be possible, potential nesting habitat will be subject to a check survey by an experienced ecologist immediately prior to its removal. Should an active nest be found, a 10m buffer will be established around the nest and kept in place until the young have fledged.

The development will be phased to reduce the impact of disturbance on species within and adjacent to the application site. Areas proposed for mitigation will be created/enhanced in the first instance, to ensure that suitable foraging areas are available from the start of development.

Areas set aside for mitigation will contain a mosaic of habitat types that will provide foraging and nesting opportunities for a wide range of nesting bird species (standing water, long grassland, crops, hedgerow and scrub habitat).

The provision of new areas of landscape planting, including hedgerows, woodland, trees and scrub, throughout the application site will provide opportunities for this group. Planting will be of a native species mix with the emphasis on berry/nut bearing varieties that will provide foraging opportunities in the future.

In addition, a variety of styles of nest boxes will be erected (including Barn Owl boxes). These will provide further breeding opportunities and will be of particular value whilst the new areas of landscape planting mature. With the use of various types of nest boxes there is an opportunity to attract species that are currently absent from the application site.

10.5.5.48 Following mitigation, impacts are **positive** at the **county level** and of **minor significance**.

10.5.5.49 Barn Owl has also been recorded feeding over the application site. Provision of a variety of habitats within the proposed development as part of the mitigation strategy, including areas of open grassland and longer grassland around habitat edges, will also be of benefit to this species.

CCC Application

10.5.5.50 Impacts and mitigation as set out under CDF.

DBERR Application

- 10.5.5.51 Impacts and mitigation as set out under CDF however the impact will be greatly reduced as a smaller amount of suitable habitat for breeding birds will be affected by the proposed development.

Invertebrates

- 10.5.5.52 **Activity.** The ditches within the application site do not exhibit a notable level of invertebrate diversity. No rare or notable species were recorded during aquatic invertebrate surveys of the site.
- 10.5.5.53 The Manchester Ship Canal is unlikely to support a wide range of aquatic invertebrate fauna due to poor water quality and lack of aquatic vegetation.
- 10.5.5.54 No rare or notable invertebrates were recorded during the terrestrial invertebrate survey of the application site.
- 10.5.5.55 The application site supports common species of invertebrate fauna only in areas of suitable habitat and is therefore of value at a site level only.

Impacts: Loss of habitat for common species, particularly during the construction phase however creation of a variety of habitats of higher quality within the areas proposed for mitigation on site.

- 10.5.5.56 Impacts are **negative** in the short term at the **site level** and of **negligible significance**.

Mitigation: None required. Nonetheless, new habitat creation and enhancements within the proposed development will be of benefit to this group.

- 10.5.5.57 Following mitigation impacts are **positive** at the **site level** and of **minor significance**.

CCC Application

- 10.5.5.58 Impacts and mitigation as set out under CDF.

DBERR Application

- 10.5.5.59 Impacts and mitigation as set out under CDF however the impact will be greatly reduced as a smaller amount of suitable habitat for invertebrates will be affected by the proposed development.

Other Species

- 10.5.5.60 Brown Hare has been recorded within the application site boundary. Although some areas of suitable habitat will be lost to the proposed development, large areas of suitable habitat will remain that can be utilised by this species.

- 10.5.5.61 Eels have not been recorded within the application site however suitable habitat exists within the application site boundary. It is likely that small areas of suitable eel habitat will be lost to the proposed development however, main ditches will not be significantly affected during work and new ditches will be created, of a higher quality, within the proposed development to provide additional suitable habitat for this species.
- 10.5.5.62 No surveys were conducted for reptiles on the advice of ecological specialists who are familiar with the area. Large sections of the site supporting arable or improved pasture is unsuitable habitat, and while other areas of the site provide potential quality features to support common reptiles including Grass-snake, the proposed mitigation and enhancement measures set out in this chapter and within appendix 10.20 would provide for positive gains overall for this group of species.

10.5.6 Overall Ecological Impact

- 10.5.6.1 Overall, the proposals ensure the majority of habitats of interest in nature conservation terms are retained and enhanced within the proposed development.
- 10.5.6.2 In addition, areas of new habitat will be created within areas set aside for ecological mitigation and SUDS. This will provide for an increase in the biodiversity value of the application site.
- 10.5.6.3 Where it is considered that there is a reduction in important habitat type or features important to protected species, the proposals aim to ensure that these are compensated for by replacement habitats of either equal size or greater quality within the proposed development.
- 10.5.6.4 In addition, all effort has been made to ensure that protected species present within the application site will be maintained in the long-term at a favourable conservation status.
- 10.5.6.5 Overall, impacts following mitigation and enhancements recommended within this report are **positive** and of **minor to moderate significance**.

10.6 RESIDUAL IMPACTS

10.6.1 Statutory Designated Sites

Complete Development Footprint

- 10.6.1.1 With the implementation of the mitigation strategy outlined above, there will be a positive residual impact on the Mersey Estuary SSSI/SPA as a result of the proposed development.

CCC Application

- 10.6.1.2 As set out under CDF.

DBERR Application

- 10.6.1.3 As set out under CDF.

10.6.2 Non Statutory Designated Sites

Complete Development Footprint

- 10.6.2.1 After implementation of appropriate mitigation, the residual impact of the proposed development upon the area of SBI within the application site is predicted to be a permanent reduction in the size of the SBI however an increase in the quality and diversity of habitats present through appropriate enhancements and management. The significance of this impact will be on a minor positive scale at the county level.

CCC Application

- 10.6.2.2 After implementation of appropriate mitigation, the residual impact of the proposed development upon the area of SBI within the application site is predicted to be a permanent reduction in the size of the SBI however an increase in the quality and diversity of habitats present through appropriate enhancements and management. As less SBI will be lost to this application, the significance of this impact will be on a moderate positive scale at the county level.

DBERR Application

- 10.6.2.3 After implementation of appropriate mitigation, the residual impact of the proposed development upon the area of SBI within the application site is predicted to be a permanent reduction in the size of the SBI however an increase in the quality and diversity of habitats present through appropriate enhancements and management. As less SBI will be lost to this application, the significance of this impact will be on a major positive scale at the county level.

10.6.3 Habitats

Semi-natural and Plantation Broadleaved Woodland

Complete Development Footprint

- 10.6.3.1 After implementation of appropriate mitigation, the residual impact of the proposed development upon these habitats within the application site is predicted to be a small scale-loss of area however a positive enhancement in the quality of the habitat through active management and protection. The significance of the impacts will be on a minor positive scale at the local level.

CCC Application

- 10.6.3.2 As set out under CDF.

DBERR Application

- 10.6.3.3 As set out under CDF however as the Community Woodland/Ecology Park won't be developed under this proposal, the significance of the impact will be on a minor positive scale at the local level.

Dense and Scattered Scrub

Complete Development Footprint

- 10.6.3.4 After implementation of appropriate mitigation, there is predicted to be a minor positive residual impact at the site level due to habitat creation and enhancement.

CCC Application

- 10.6.3.5 As set out under CDF.

DBERR Application

- 10.6.3.6 As set out under CDF.

Unimproved Grassland

Complete Development Footprint

- 10.6.3.7 After implementation of appropriate mitigation, the residual impact of the proposed development upon this habitat is predicted to be an increase in area within the application site from habitat creation and a positive enhancement in the quality of this habitat through active management. The significance of the impacts will be on a moderate positive scale at the county level.

CCC Application

- 10.6.3.8 As set out under CDF.

DBERR Application

- 10.6.3.9 As set out under CDF.

Semi-improved Grassland

Complete Development Footprint

- 10.6.3.10 After implementation of appropriate mitigation, the residual impact of the proposed development upon this habitat is predicted to be an increase in area within the application site from habitat creation and a positive enhancement in the quality of this habitat through active management. The significance of the impacts will be on a minor positive scale at the site level.

CCC Application

- 10.6.3.11 As set out under CDF.

DBERR Application

- 10.6.3.12 As set out under CDF.

Hedgerows and Mature Trees

Complete Development Footprint

- 10.6.3.13 After implementation of appropriate mitigation, the residual impact of the proposed development upon these habitats within the application site is predicted to be a small scale-loss of habitat present. However, there is predicted to be a positive enhancement in the quality of the remaining habitat through additional planting, enhancement and active management. There are no significant residual impacts on this habitat within the application site.

CCC Application

- 10.6.3.14 As set out under CDF.

DBERR Application

- 10.6.3.15 After implementation of appropriate mitigation, the residual impact of the proposed development upon these habitats is predicted to be an increase in the quality of these features through the application site from active management and enhancement. The significance of the impacts will be on a minor positive scale at the site level.

Improved Grassland

Complete Development Footprint

- 10.6.3.16 After implementation of appropriate mitigation, the residual impact of the proposed development upon this habitat within the application site is predicted to be a permanent loss of habitat within the application site. However, there is predicted to be a positive enhancement in the quality of the remaining habitat through additional habitat creation, enhancement and management. The significance of the impacts will be on a minor positive scale at the county level.

CCC Application

- 10.6.3.17 As set out under CDF.

DBERR Application

- 10.6.3.18 After implementation of appropriate mitigation, the residual impact of the proposed development upon this habitat within the application site is predicted to be a minor loss of habitat within the application site. However, there is predicted to be a positive enhancement in the quality of the remaining habitat through additional habitat creation, enhancement and management. The significance of the impact will be on a moderate positive scale at the county level.

Arable

Complete Development Footprint

- 10.6.3.19 After implementation of appropriate mitigation, the residual impact of the proposed development upon this habitat within the application site is predicted to be a permanent loss of habitat within the application site. However, there is predicted to be a positive enhancement in the quality of the remaining habitat through additional habitat creation, enhancement and management. The significance of the impacts will be on a minor positive scale at the site level.

CCC Application

- 10.6.3.20 As set out under CDF.

DBERR Application

- 10.6.3.21 As set out under CDF.

Tall Ruderal and Swamp Vegetation

Complete Development Footprint

- 10.6.3.22 After implementation of appropriate mitigation, the residual impact of the proposed development upon these habitats within the application site is predicted to be a small scale-loss of habitat present. However, there is predicted to be a positive enhancement in the quality of the remaining habitat through enhancement and active management. The significance of the impacts will be on a negligible positive scale at the site level.

CCC Application

- 10.6.3.23 As set out under CDF.

DBERR Application

- 10.6.3.24 As set out under CDF.

Standing Water

Complete Development Footprint

- 10.6.3.25 The residual impact of the proposed development on standing water within the application site is predicted to be an increase in area within the application site through habitat creation. The significance of this impact will be on a major positive scale at the county level.

CCC Application

- 10.6.3.26 As set out under CDF.

DBERR Application

- 10.6.3.27 As set out under CDF.

Running Water

Complete Development Footprint

- 10.6.3.28 The residual impact of the proposed development on running water within the application site is predicted to be an increase in the ecological value of the drainage network within the application site through habitat enhancement and management. The significance of this impact will be on a moderate positive scale at the county level.

CCC Application

- 10.6.3.29 As set out under CDF.

DBERR Application

10.6.3.30 As set out under CDF.

Manchester Ship Canal

Complete Development Footprint

10.6.3.31 There is predicted to be no residual impact of the proposed development on the Manchester Ship Canal.

CCC Application

10.6.3.32 As set out under CDF.

DBERR Application

10.6.3.33 As set out under CDF.

10.6.4 Fauna

Badgers

10.6.4.1 See Appendix 10.9 – Confidential Badger Appendix.

Bats

10.6.4.2 After implementation of appropriate mitigation, the residual impact of the proposed development upon this group within the application site is predicted to be a small scale-loss of suitable foraging habitat however an increase in the quality of remaining habitat through creation, enhancement and management. The significance of these impacts will be on a minor positive scale at the national level.

CCC Application

10.6.4.3 As set out under CDF.

DBERR Application

10.6.4.4 As set out under CDF.

Water Vole

10.6.4.5 After implementation of appropriate mitigation, the residual impact of the proposed development upon this species within the application site is predicted to be a small scale-loss of suitable habitat however an increase in the quality of remaining habitat through habitat creation, enhancement and management. The

significance of these impacts will be on a moderate positive scale at the national level.

CCC Application

10.6.4.6 As set out under CDF.

DBERR Application

10.6.4.7 As set out under CDF.

Great Crested Newt

10.6.4.8 No residual impacts.

Wintering Birds

10.6.4.9 After implementation of appropriate mitigation, the residual impact of the proposed development upon this group within the application site is predicted to be a small scale-loss of suitable habitat however an increase in the quality of remaining habitat through habitat creation, enhancement and management. The significance of these impacts will be on a minor positive scale at the county level.

CCC Application

10.6.4.10 As set out under CDF.

DBERR Application

10.6.4.11 As set out under CDF.

Breeding Birds

10.6.4.12 After implementation of appropriate mitigation, the residual impact of the proposed development upon this group within the application site is predicted to be a small scale-loss of suitable habitat however an increase in the quality of remaining habitat through habitat creation, enhancement and management. The significance of these impacts will be on a minor positive scale at the county level.

CCC Application

10.6.4.13 As set out under CDF.

DBERR Application

10.6.4.14 As set out under CDF.

Terrestrial and Aquatic Invertebrates

- 10.6.4.15 After implementation of appropriate mitigation, the residual impact of the proposed development upon this group is predicted to be an increase in area of suitable, high-quality habitat within the application site from habitat creation, enhancement and management. The significance of this impact will be on a negligible positive scale at the site level.

CCC Application

- 10.6.4.16 As set out under CDF.

DBERR Application

- 10.6.4.17 As set out under CDF.

Other Species

- 10.6.4.18 No residual impacts.

10.6.5 Enforcement of Strategies

- 10.6.5.1 PPS9 (paragraph 1 (vi)) requires local authorities, when considering planning applications, to ensure that any significant adverse ecological effects are prevented, adequately mitigated or compensated. Authorities are also required to maximise opportunities for biodiversity in and around new developments. (Paragraph 14).

- 10.6.5.2 Planning conditions may be used to enforce actions needed to protect valuable features during site preparation and construction (for example the Construction Method Statement) and planning obligations to secure long-term management (e.g. the proposed Habitat Creation and Management Plan [see Appendix 10.20]).

10.6.6 Cumulative Impacts

- 10.6.6.1 As set out in other sections of this Environmental Statement a number of other developments have been considered as part of the cumulative assessment. In the light of the overall conclusion in ecological terms that the CDF, CCC, or DBERR applications give rise to positive impacts in Nature Conservation terms, and based on the information relating to other developments, cumulatively no significant impacts are considered to arise.

- 10.6.6.2 In terms of the SPA, having considered other development proposals there is no significant impacts arising either alone or in combination on the SPA integrity or conservation objectives.

10.7 PLANNING POLICY CONTEXT

10.7.1 National planning policy

Planning Policy Statement 9 (PPS9)

- 10.7.1.1 Guidance on national policy for biodiversity and geological conservation is provided by PPS9¹⁰, published in August 2005. PPS9 confirms the Government's commitment to the protection of biodiversity and geological conservation through the planning system.
- 10.7.1.2 PPS9 requires 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 interests within the wider environment.
- 10.7.1.3 It also considers the potential biodiversity and geological conservation gains which can be secured within developments, including the use of planning obligations.
- 10.7.1.4 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.

10.7.2 Regional policy

Regional Spatial Strategy for the North West (RSS) (published March 2003)¹¹

- 10.7.2.1 Formally the Regional Planning Guidance for the North West (RPG13).
- 10.7.2.2 Policies providing guidance on the relationship between development and nature conservation in the northwest are currently provided within the RSS.
- 10.7.2.3 There are three policies within the RSS (ER1, ER5 and ER6) that refer to the protection and enhancement of designated sites and the maintenance and enhancement of the region's biodiversity resources. Policy ER1 refers to management of the regions natural environment. Policy ER5 refers to Biodiversity and Nature Conservation within the region and Policy ER6 refers specifically to the region's woodland resources.

¹⁰ Office of the Deputy Prime Minister (August 2005), "*Planning Policy Statement 9: Biodiversity and Geological Conservation*". Her Majesty's Stationary Office, Crown Copyright.

¹¹ <http://www.gos.gov.uk/gonw/Planning/RegionalPlanning/RegionalPlanningGuidanceNW/>

10.7.3 County planning policy

Cheshire 2016: Structure Plan Alteration (adopted December 2005)

- 10.7.3.1 Planning policy at the County level is currently provided by the Cheshire 2016: Structure Plan Alteration¹², adopted in December 2005.
- 10.7.3.2 The Structure Plan contains three policies (Policies R1, R2 and R3) relevant to nature conservation. Policy R1 relates to protection of designated sites, R2 relates to protection of areas of county value and R3 relates specifically to developments near estuaries.
- 10.7.3.3 These policies reflect the guidance set out in PPS9 and relate to the protection and enhancement of biodiversity, including the protection of designated sites and areas and the creation and enhancement of habitats.

10.7.4 Local planning policy

Ellesmere Port and Neston Borough Local Plan (2002)¹³

- 10.7.4.1 The Local Plan is a detailed framework for Ellesmere Port and Neston Borough's housing, employment, green belt, natural and built environment, hazard and pollution, recreation and tourism, town centres and shopping and transport.
- 10.7.4.2 The adopted Local Plan contains six policies that relate in whole or in part to nature conservation (policies ENV1, 2, 3, 4, 5 and 9).
- 10.7.4.3 These policies reflect those set out in the Structure Plan
- 10.7.4.4 Policies 1-4 relate to protection of designated sites down the hierarchy of designations. Policy ENV5 relates to identification of ecological interest and protection of ecological features and protected species within developments. ENV9 relates to protection of landscape and habitat features.
- 10.7.4.5 The Local Plan will be replaced by the Local Development Framework (LDF) when it is complete.

10.7.5 Guidance other than planning policy

Biodiversity Action Plans (BAPs)

- 10.7.5.1 The UK Biodiversity Action Plan (BAP) lists over 40 habitats and around 400 species that are of the highest priority for conservation in the UK.

¹² http://www.cheshire.gov.uk/Planning/ForwardPlanning/FP_SP_dl_structureplan2016unpub.htm

¹³ http://www.epnbc.gov.uk/epnbclocalplan/loc_plan.htm

- 10.7.5.2 *Countdown – The Cheshire Region Biodiversity Action Plan*¹⁴ lists habitats and species from this list that are of importance in the County of Cheshire.
- 10.7.5.3 A number of these habitats and species are considered in relation to the application site in the relevant sections within this ES chapter.

Discussion

- 10.7.5.4 There are no statutory designated sites of nature conservation importance within the application site boundary.
- 10.7.5.5 The nearest statutory site is the Mersey Estuary SSSI, which is also designated as an SPA. This site lies approximately 80m to the north of the application site boundary.
- 10.7.5.6 There is one non-statutory site located partly within the application site boundary, Frodsham, Helsby and Ince Marshes Site of Biological Interest (SBI).
- 10.7.5.7 A comprehensive avoidance and mitigation strategy, including enhancement measures, has been developed in consultation with Natural England and Cheshire Wildlife Trust to ensure that the proposals prevent detrimental impacts on designated sites. Therefore the development proposals conform to Policy ER5 within the RSS, Policies R1, R2 and R3 of the Cheshire 2016 Structure Plan Alteration, and Policies ENV1, ENV2, ENV3, ENV4 and ENV5 within the Ellesmere Port and Neston Borough Local Plan.
- 10.7.5.8 This site supports a range of habitat types, the most ecologically valuable being small areas unimproved grassland, areas of woodland and trees and running water (high quality ditches). Some areas of semi-natural habitat will be permanently lost to the proposed development (see impact assessment above) however a substantial part of the site (approximately 31.5 hectares) will be retained, enhanced and managed for ecological mitigation (detailed in Appendix 10.20) and mitigation practices will be put in place to conserve other retained areas of habitat within the application site during construction. This will provide for a net enhancement in the diversity and quality of habitats present within the application site boundary.
- 10.7.5.9 The development proposals therefore conform to Policies ER1, ER2, ER5 and ER6 within the RSS, Policy R2 within the Cheshire 2016: Structure Plan Alteration and Policies ENV4, ENV5 and ENV9 within the Ellesmere Port and Neston Borough Local Plan.
- 10.7.5.10 Badgers *Meles meles*, bats, Water Vole and both breeding and over-wintering birds utilise the application site. These are all

¹⁴ <http://www.ukbap.org.uk/lbap.aspx?ID=435#5>

protected species (all bird species are protected whilst nesting) and have been fully mitigated for in this chapter.

- 10.7.5.11 In addition, enhancements will be made to improve wildlife habitats present within the application site, with specific regard had to Water Vole, over-wintering wading birds and farmland passerines. Therefore the development proposals conform to Policies ER1, ER2 and ER5 within the RSS, Policy R2 within the Cheshire 2016: Structure Plan Alteration and Policy ENV5 within the Ellesmere Port and Neston Borough Local Plan.
- 10.7.5.12 On the basis of the above information, it is considered that the development proposals conform to those policies relating to nature conservation at the national, regional, county and local levels.

10.8 SUMMARY & CONCLUSIONS

- 10.8.1 Ecology Solutions was commissioned by Peel Environmental Ince Ltd in November 2007 to collate all existing ecological information for the proposed Ince Resource Recovery Park and prepare the Ecology chapter of the Environmental Statement for the proposed development at Ince Marshes, Cheshire (see Figure 10.1) (GR SJ 470 770).
- 10.8.2 The ecological assessment is based on results from field surveys undertaken by various consultants between 2004 and 2007. Further information has been obtained through consultation with the recognised bodies involved in nature conservation in the local area.
- 10.8.3 The nearest statutory site is the Mersey Estuary SSSI, which is also designated as the Mersey Estuary SPA. This site lies approximately 80 metres from the northern boundary of the application site, abutting the northern edge of the Manchester Ship Canal (see Figure 10.2).
- 10.8.4 This site is valuable on a national and international level and receives the highest level of protection through the Conservation (Natural Habitats) Regulations 1994.
- 10.8.5 There is one Site of Biological Importance (SBI) located within the application site boundary (see Figure 10.2). Frodsham, Helsby and Ince Marshes SBI is a Grade A site designated for ornithological interest and some limited botanical interest in the ditch system.
- 10.8.6 This site is of value on a county level.
- 10.8.7 Habitats identified within the application site boundary include semi-natural broadleaved woodland, broadleaved plantation woodland, dense and scattered scrub, hedgerows and mature trees, unimproved and semi-improved neutral grassland, improved grassland, arable, tall ruderal and swamp vegetation, standing water (ponds and temporal pools), running water (ditches and canal) and existing buildings. Of these habitats, the most ecologically interesting are the areas of unimproved grassland and the ditch system.
- 10.8.8 Protected, rare or notable fauna identified within the application site boundary includes Badger, bats, Water Vole, over-wintering wader species, such as Curlew, Redshank and Golden Plover, and breeding bird species, such as Reed Bunting, Linnet and Bullfinch.
- 10.8.9 With the implementation of the mitigation strategy detailed in this chapter, there are predicted to be no impacts upon the Mersey Estuary SSSI/SPA statutory designated site as a result of the proposed development.
- 10.8.10 Impacts on the SBI located partly within the application site boundary include permanent loss of area of SBI and short-term disturbance to remaining areas of habitat but a long-term improvement in the condition and diversity of habitats present within the remaining area of SBI in the application site boundary from habitat creation, enhancement and management.

- 10.8.11 The impact of the proposed development on habitats within the application site boundary, pre-mitigation, is predicted to be a loss of semi-natural habitat, including areas of semi-improved and improved grassland, ditches, hedgerows and arable, disturbance to remaining areas of habitat, both during and after construction, and potential for pollution incidences within watercourses on or adjacent to the application site.
- 10.8.12 Post-mitigation, the impacts of the proposed development on habitats are predicted to be a permanent loss of semi-natural area but an increase in the quality and diversity of habitats present within the application site, through habitat creation, enhancement and management.
- 10.8.13 The impact upon faunal species on site, pre-mitigation, is predicted to be a small-scale loss of suitable habitat, disturbance to remaining areas of habitat, both during and after construction and, in the case of Badger and Water Vole, potential to kill or injure animals during site clearance work.
- 10.8.14 With the implementation of appropriate mitigation, as detailed in this report, the predicted residual impacts on Badger, bats, Water Vole and bird species include a positive enhancement of the site for these species through habitat creation, enhancement and appropriate management.
- 10.8.15 Taking into account possible impacts and off-setting these, where possible, with appropriate mitigation and enhancement measures, the proposed development complies with environmental policies contained within PPS9, the Regional Spatial Strategy for the North-west, Cheshire 2016: Structure Plan Alteration and the Ellesmere Port and Neston Borough Local Plan.
- 10.8.16 Proposed ecological enhancements act towards achieving aims for habitat and species contained within both the National and Local BAP.
- 10.8.17 In conclusion, all relevant ecological issues have been addressed within this ES Chapter. On the evidence of the specific ecological surveys undertaken to date, and with the implementation of avoidance, mitigation and enhancement recommended in this report, the impact of the proposed development upon the natural environment will be a small-scale loss of semi-natural habitat of low ecological value however habitat creation, enhancement and management on site will more than offset this loss. The net impact is therefore predicted to be a long-term increase in the ecological value of the site and biodiversity overall.