

Ecology Baseline Assessment

Halsnead Masterplan SPD

January 2017

Knowsley Metropolitan Borough Council

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	09/09/2016	J Stephenson ACIEEM	T Oliver CEnv MCIEEM	A. Smith	First draft for comment
B	31/10/2016	J Stephenson ACIEEM	T Oliver CEnv MCIEEM	A. Smith	Final draft following client comment update
C	11/01/2017	J Stephenson ACIEEM	T Oliver CEnv MCIEEM	A Smith	Final draft following client comment update

Information class: Standard

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Executive Summary

Mott MacDonald and Turley have been commissioned by Knowsley Metropolitan Borough Council (KMBC) to produce a masterplan Supplementary Planning Document (SPD) to help guide delivery of a Sustainable Urban Extension (SUE), covering two sites formerly known as “Land south of Whiston” located to the north of the M62 as well as “Land south of the M62”. These two sites have collectively been termed ‘Halsnead’.

The site is centred on Ordnance Survey Grid Reference SJ 471 897.

The purpose of this Ecology Strategy Plan is to provide an initial assessment of the ecological importance of the habitats in the areas relevant to the redevelopment of the site and the potential for these areas to support protected ecological features and species.

No Statutory designated sites were within 2km of the site and therefore, pose no ecological constraint on the proposed plans. The Mersey Estuary SPA was within 10km of the site and habitats on site do have some potential to be used by designatable species. However, no further assessments are required regarding this designated feature. Seven non-statutory sites are located within the proposed masterplan site and as such it is recommended where possible, that the proposed design retain these features and habitats as well as limits the potential impact on these sites. If the development does impact these sites, early consultation with stakeholders would be prudent. A further nine non-statutory designated sites are present within 2km of the site, however due to their proximity to the proposed works no impact is anticipated. Therefore, the non-statutory sites outside of the masterplan sites pose no ecological constraints to the proposed plans.

The Site consists predominantly of widespread and broad habitats, with several high ecological receptors such as ancient woodland and BAP priority habitats including lowland meadows, wetland, and open mosaic areas. Several waterbodies including ditches, ponds and streams are noted within the site boundary. These feature form part of the LCR framework habitats and are included in core biodiversity areas and stepping stone areas.

Proposed plans should retain ancient woodland areas as these habitats are classified as irreplaceable and are a key strategic asset. A buffer zone of 15m surrounding the ancient woodland should also be retained to ensure root systems are not impacted by development activities. Where possible other BAP priority habitats should be retained

and connectivity to these habitats improved. This could include the use of wild flower road side verges, increased wetland areas for natural surface water storage and/or creation of tree line corridors. Many bird, bat, and mammal species, including water voles and badgers have been reported in the records and during species specific surveys within some of the areas discussed in this report.

The report refers to the site having potential for roosting bats, nesting birds and water voles in the vegetation as well as the presence of invasive species within the site. The report makes recommendations regarding further ecology surveys to update the ecology baseline for the site. In the first instance a Preliminary Ecological Appraisal (PEA) should be conducted to update the ecology baseline and inform on any further protected species surveys that may be required.

1 Introduction

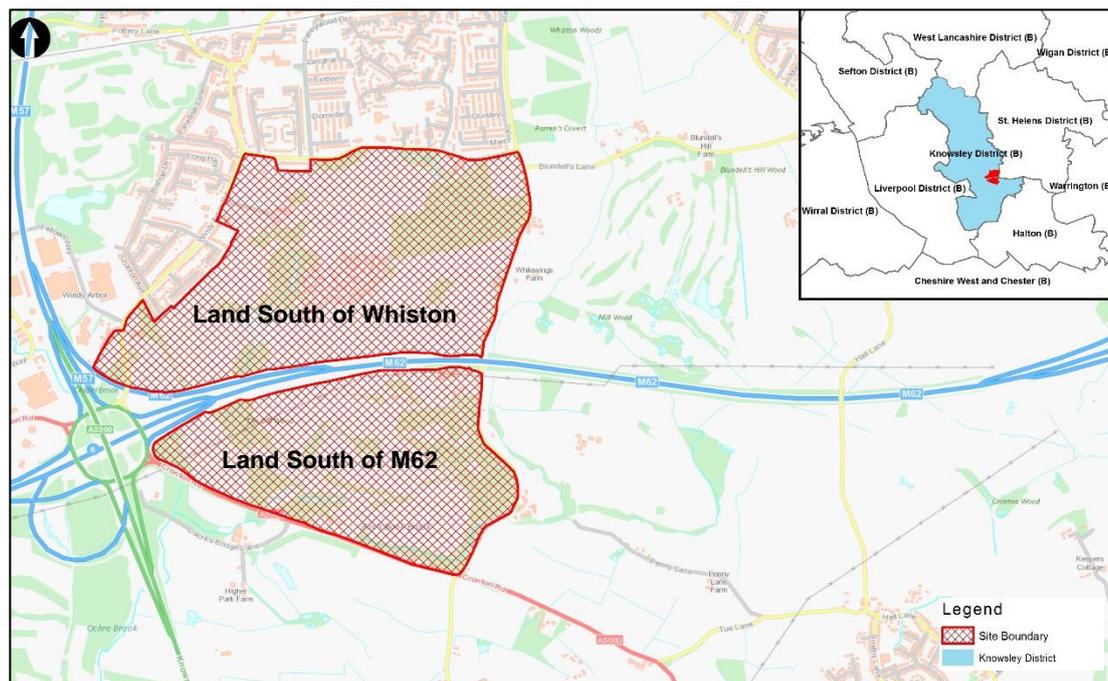
1.1 Background

- 1.1.1 Mott MacDonald and Turley have been commissioned by Knowsley Metropolitan Borough Council (KMBC) to produce a masterplan Supplementary Planning Document (SPD) to help guide delivery of a Sustainable Urban Extension (SUE), covering two sites formerly known as “Land south of Whiston” located to the north of the M62 as well as “Land south of the M62”. These two sites have collectively been termed ‘Halsnead’.
- 1.1.2 The SUE was until recently designated as Green Belt land however on adoption of the Local Plan Core Strategy (2016) it was allocated for development. The Local Plan Core Strategy (SUE2) identifies the largest SUE locations as needing additional planning guidance and the site under consideration in this report forms the largest and most complex SUE. The Local Plan identifies that this SUE has the capacity to accommodate upwards of 1,500 new homes, at least 22.5 hectares of employment land, and a new country park.
- 1.1.3 The preparation of the masterplan is currently at baseline stage and a range of evidence has been collected from a number of different disciplines to inform an up to date evidence base for the study area. This evidence is presented within a series of coordinated studies which ensure the constraints and opportunities are fully understood to inform the development of a deliverable masterplan.

1.1 Site Location

- 1.1.4 The site consists of two parts, a northern part and a southern part, with the two separated by the M62. There are multiple land ownerships across the SUE making a comprehensive masterplan important to ensure that development expectations are managed and there is a common design framework to make best use of the site. The final masterplan will practically function as a planning instrument, both as a guide to developers and as a material planning consideration to help bring development proposals into conformity. Together the two parts of the site total 176 hectares of development land. The site can be seen in Figure 1.1 overleaf.

Figure 1.1: Site Location



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- 1.1.5 The northern part of the site is bounded by existing residential development to the west and north and by Fox's Bank Lane to the east, a rural road which provides an underpass under the M62. The southern part of the site is bordered by the A5080 Cronton Road, with the south eastern corner of the site being bounded by the former Cronton Colliery. Currently in the centre of the northern part of the site is Halsnead Park, a mobile home park. Adjacent to this is a medium sized lake and surrounding woodland.
- 1.1.6 The Site is centred around Ordnance Survey Grid reference SJ 471 897 and covers an area of 175ha, with the area comprising of old industrial land, deciduous woodland, and open farmland. Industrial estates, open farmland, and residential development dominate the wider landscape.

1.2 Methodology

1.2.1 The following methods in line with guidance provided in the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines on Preliminary Ecological Appraisal (2013) have been adopted in the assessment of this area:

- A review of the existing designated sites, habitats, and protected and notable species records within 2km of the development. Identify Natura 2000 sites and Special Areas of Conservation (SAC) designated for bats within 10km of site;
- A review of the information regarding local and national species, and action plan habitats and areas of protected status from the Multi-Agency Geographic Information for the Countryside (MAGIC) (<http://magic.defra.gov.uk/>), the Joint Nature Conservation Committee (JNCC) (<http://jncc.defra.gov.uk/>) websites; and
- A review of the existing information provided, including; existing ecological information from the Liverpool City Region (LCR) ecological framework, including stepping stone areas, Core Biodiversity areas (CBA), Search areas for habitat expansion (SAPHE), Strategic Asset regions and connectivity zones.
- A review of local wildlife site citations and existing survey reports for the Cronton Country park project, by The Ecology Partnership (TEP, 2015) of the land surveyed south of the M62 and South Whiston and Land South of M62 Part 1: Extended Phase 1 Habitat survey report and Part 2: Phase 2 Ecology Survey and Habitat Assessment Report (MEAS 2014a and b).
- Produce an ecological constraints map (Appendix A).

1.3 Scope of the Report

1.3.1.1 The purpose of this report is to provide an initial assessment of the ecological importance of the habitats in the areas relevant to the redevelopment of the South Whiston Site and the potential for these areas to support protected ecological features and species.

1.3.1.2 This Ecological Strategy Plan report follows the NPPF in relation to Biodiversity and Conservation. All relevant areas within the site boundary,

and, where visible, habitats and features immediately adjacent to the site were reviewed. features immediately adjacent to the site were reviewed.

1.3.1.3 The aims of this assessment are to:

- Identify and assess the nature conservation value of the habitats and species near and adjacent to the site; and
- Provide recommendations on surveys, constraints as well as any mitigation and compensation measures as appropriate to the development.

The structure of this report is as follows:

- Section 1 – Introduction including background to the report;
- Section 2 – Results, interpretation, and assessment; and
- Section 3 – Conclusion, Strategy, and recommendations.

1.4 Limitations

1.4.1 The information provided in this report is based on the sources stated above and on the habitat descriptions provided by reports in the area (MEAS 2014a and b and TEP, 2015). No survey work has been conducted on the site as part of this assessment and therefore, features and habitat may have changed since the reports were published. To that effect, this report is to provide information only and does not negate the need for survey work to fully assess the baseline conditions present on Site.

1.4.2 Information provided allows a picture of the ecological features. However, as this information is not specific to this Site, there may be gaps in the data sourced.

2 Legislative Context and Policy Framework

- 2.1.1 At national level, Section 11 of the National Planning Policy Framework (NPPF) (which relates to conserving and enhancing the natural environment) requires Local Authorities in England to take measures to:
- Protect the habitats of these species from further decline;
 - Protect the species from the adverse effect of development; and
 - Refuse planning permission for development that harms these species unless the need for, or benefit of, the development clearly outweighs that harm.
- 2.1.2 The species and habitats listed by these measures are legally protected to varying degrees through the Wildlife and Countryside Act 1981 (as amended) (WCA). Together this Act and The Conservation of Habitats and Species Regulations 2010 (as amended) form the cornerstone for species and habitat protection in England and Wales. Species legislations relevant to this report are provided in Appendix B.
- 2.1.3 The UK Post-2010 Biodiversity Framework covers the period from 2011 to 2020. Its aim is to address the underlying causes of biodiversity loss and improve and enhance biodiversity and ecosystem services. However, the UKBAP priority habitats and species background information is still widely used in the UK. UKBAP priority habitats and species have been considered and enhancement measures have been suggested within this report.
- 2.1.4 The Natural Environment and Rural Communities (NERC) Act 2006 requires public bodies, including local authorities, 'to have regard to the conservation of biodiversity in England' when carrying out their normal functions. Also under Section 41 of this Act a list of species of 'principal importance to biodiversity within England' was drawn up which acts as an aid to guide public bodies in implementing their duty. Local Authority must, therefore, consider the impact of the proposed redevelopment on species and habitats of principal importance. The enhancements described in the recommendations section of this report illustrate ways in which this biodiversity duty can be met.
- 2.1.5 At a local level, Core Strategy 8 'Green Infrastructure' Policy for Knowsley Local Plan aims to protect, enhance, sustain, and mitigate Knowsley's Existing Green Infrastructure. As well as contributes to the sub-regional planning of Green Infrastructure to maximise benefits for the borough and its surrounding

areas. To achieve this planning powers encourage the protection and enhancement of important green spaces, promote effective movement of wildlife, and work collaboratively with other districts, relevant bodies and communities.

3 Results, Interpretation, and Assessment

3.1 Results

3.1.1 A desk study was undertaken to identify key habitats near and adjacent to the Site. The results are presented in the following sections.

Statutory Designated Sites

3.1.2 There are no statutory designated sites for nature conservation within 2km of the Site (<http://magic.defra.gov.uk/>), or; SACs designated for bats within 10km of the Site.

3.1.3 However, there is one Special Protection Area (SPA)/Natura 2000 site present within 10km of the Site. The SPA details are given in the table below.

Table 3.1: Statutory Designated sites within 10km of site.

Name	Status and details	Location and direction
Mersey Estuary	Special protection area (SPA) and Natura 2000 site. Qualifying features include; Black-tailed godwit (<i>Limosa limosa</i>), Dunlin (<i>Calidris alpina</i>), Golden plover (<i>Pluvialis apricaria</i>), Pintail (<i>Anas acuta</i>), Redshank (<i>Tringa totanus</i>), Shelduck (<i>Tadorna tadorna</i>), Teal (<i>Anas crecca</i>), Water bird assemblage.	10km south of site

Source: <http://magic.defra.gov.uk/>

Non Statutory Designated sites

3.1.4 There are sixteen non-statutory designated sites within 2km of the Site. Seven local wildlife sites are within the site boundary, with a further seven are local wildlife sites and two are local geological sites within 2km of the Site. These sites are given in the table below.

Table 3.2: Non-statutory designated sites within 2km of the masterplan sites

Name	Status and details	Location and direction
Mine waste	Local Wildlife Sites (LWS) 43ha derelict	Within the site

Name	Status and details	Location and direction
Cronton	landscape since 1984. Contains mature woodland to along the south western boundary with two ponds. It also contains a mix of dry and wet acid grasslands and post-industrial mosaic habitats. Identified as a site of Biological Interest.	boundary
The Old Wood – North	Local Wildlife sites (LWS), ancient semi-natural woodland	Within the site boundary
The Old Wood - South		
Strettles Bog, Tarbock	LWS. A small area of broadleaved woodland, neutral grassland, and Chapel Brook. Area identified as a Site of Biological Interest.	Within the site boundary
Big water and Big water wood, Halsnead	LWS. A lake with a good mix of aquatic and emergent vegetation. Broadleaved woodland borders the site. Area identified as a Site of Biological Interest.	Within the site boundary
Lickers lane wood	LWS. A long, narrow broadleaved woodland with a dense canopy and associated neutral grassland. Area identified as a Site of Biological Interest.	Within the site boundary
Woodland, Sandfields Park	LWS. A mature, predominantly broadleaved woodland with a pond, acidic grassland, and scrub. Area identified as a Site of Biological Interest.	Within the site boundary
Daggers Bridge wood	LWS. An area of broadleaved woodland with two brooks as well as some wetland areas. Area identified as a Site of Biological Interest.	Within 1km of the site boundary
Land east of Fox's Bank Brook	LWS. A stream valley with broadleaved woodland on the east bank, potentially of ancient origin. Area identified as a Site of Biological Interest.	Within 1km of the site boundary
Rough Head	LWS. A semi-natural broadleaved woodland	Within 1km of

Name	Status and details	Location and direction
Wood	with ponds and stream. Dead wood has been left to provide hibernacula potential. Area identified as a Site of Biological Interest.	the site boundary
Ox Lane wood, Tarbock	LWS. Mature broadleaved woodland with ponds and ditches. Site identified as a Site of Biological Interest.	Within 1km of the site boundary
Ochre Brook, Tarbock	LWS. Fast flowing stream. Area identified as a Site of Biological Interest.	Within 1km of the site boundary
Stadt Moers Park	Local Geological Site.	Within 1km of the site boundary
Cronton Mineral Line, Windy Arbor, Whiston	Local Geological Site.	Within 1km of the site boundary
Blundell Hill golf course	LWS. A mix of grassland and scrub.	Within 1km of the site boundary
Stadt Moers	LWS. A mix of grassland, scrub and woodland habitats forming part of the country park.	Within 1km of the site boundary
Coppice Lane council depot, Huyton	LWS. A mix of grassland and scrub habitat with areas of damp grassland. Area identified as a Site of Biological Interest.	Within 1km of the site boundary

Source: Mersey Biobank 2015

Protected and Notable species records

Mammals

- 3.1.5 From the records provided in the report by Mersey Biobank for the Cronton County Park assessment by MEAS 2014a and b and TEP, 2015 report; several mammal species were reported within a 2km radius of the Site. These

include: brown hare (*Lepus europaeus*) and water vole (*Arvicola amphibius*), as well as numerous bat species, such as common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's bat (*Myotis daubentonii*) and soprano pipistrelle (*Pipistrellus pygmaeus*).

Birds

- 3.1.6 Records from the area also show a few bird species within the Site, which include: kingfisher (*Alcedo atthis*), skylark (*Alauda arvensis*), reed bunting (*Emberiza schoeniclus*) and song thrush (*Turdus philomelos*). No SPA designated bird species were present in the records.

Amphibians and reptiles

- 3.1.7 Amphibian and reptile species were observed both during the TEP survey and reported within the biological records (MEAS 2014a and b and TEP 2015a and 2015b). These include common toad (*Bufo bufo*), common frog (*Rana temporaria*), great crested newt (*Triturus cristatus*) and smooth newt (*Lissotriton vulgaris*).

Invasive species

- 3.1.8 Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*) were both found to be present within the Site boundary from survey reports (MEAS 2014a and b and TEP 2015).

Habitats of Conservation Importance

Priority habitat – Woodland

- 3.1.9 From a review of the information reports and the Liverpool City Region (LCR) framework several areas of broad-leaved woodland, which include some areas of ancient woodland, are noted in the Site. These habitats are highlighted as Section 41 habitats of principal importance under the Natural Environment and Rural Communities (NERC Act, 2006), see constraints plan in Appendix A. MEAS 2014b refers to the retention of these areas, as they are of national importance.

Priority habitat – Lowland Meadow

- 3.1.10 Several lowland meadows areas were recorded on the LCR framework and within the associated reports, present in areas of the north and south of Site. This habitat is highlighted as BAP priority habitat and a core biodiversity area for LCR ecology framework, see constraints plan in Appendix A.

Priority habitat – Wetland

- 3.1.11 Several areas of purple moor grassland rush pasture are recorded within the Site. This habitat is a BAP priority habitat and is a core biodiversity area for LCR ecology framework, see constraints plan in Appendix A.

Priority habitat – Open Mosaic (Inland Rock)

- 3.1.12 Several areas of open mosaic habitats were reported as being present, predominantly within the south side of the Site, see constraints plan in Appendix A. These habitats provide a range of opportunities for many protected and notable species and are normally associated with disused/derelict land. Post-industrial habitats create features and floral assemblages which support for a range of invertebrates, ground nesting birds like oystercatchers (*Haematopus ostralegus*) as well as interfaces for basking reptiles. MEAS 2014b also make reference to the retention of the majority of this area, as there are a number of complex mosaics which would be difficult to recreate. However, some loss in these areas is possible if the management of the areas as a whole was retained.

Stepping stone areas

- 3.1.13 Several stepping stone areas were also identified as part of the review, see constraints plan in Appendix A. These features predominantly included waterbodies such as ponds, ditches, and streams. These habitats provided areas for many priority species include amphibians and reptiles to move through the Site.

3.2 Interpretation

Statutory and Non-statutory designated sites

- 3.2.1 There are no statutory designated sites within 2km of the Site or SACs designated for bats within 10km.
- 3.2.2 There is one SPA/Natura 2000 site designated for wading birds within 10km of the masterplan sites. Whilst there are habitats present within the site that can be used by designatable species no further assessment (Habitat regulation assessment (HRA)) is required. Proposed plans for South Whiston will not impact this designated site.
- 3.2.3 There are sixteen non-statutory designated sites within a 2km radius of the proposed area. Seven local wildlife sites are within the site boundary and therefore further consideration and consultation will be needed with the relevant bodies to develop the area. Where possible these sites and features should be retained and adverse impact avoided in the first instance, particularly areas of ancient woodland as these habitats are classified as irreplaceable by NPPF and are difficult to replicate. In the event these sites are impacted by the development, mitigation, and compensation for loss of habitat may be required.

Protected or notable species

- 3.2.4 The results of the desk study and review of the existing information, determined that the following species and habitats are present or have the potential to be present on or adjacent to the Site.

Birds

- 3.2.5 Several notable bird species have been recorded near the Site. The vegetation on Site has the potential to support a range of nesting and breeding birds and therefore, birds may be impacted by any proposed development. Once further development plans are known further surveys including breeding bird surveys will be needed to assess the level of impact the development will have on bird populations.

- 3.2.6 At present, the records show no SPA designable bird species using the site. However, as several areas of open mosaic habitat are present with the site boundary the site has the potential to be used by SPA designated species.

Mammals

- 3.2.7 Many mammal species have been reported within the Site, or within the local vicinity.
- 3.2.8 Evidence of badgers have been noted during the field survey 2008; however, the field signs were ruled to be old/disused as no recent activity was recorded. Given the size of the Site and the combination of habitats badgers are likely to be present and may present constraints to individual developments. Further surveys, on a development by development basis, would identify any specific setts and highlight any need for mitigation.
- 3.2.9 Bats have been recorded within the Site and are highly likely to be present at numerous locations across the area and, therefore, present an ecological constraint to any proposed development. Habitats most likely to be associated with roosting, commuting and foraging bats are the broadleaved woodland and any development within the Site should undertake initial bat survey to assess the potential of any given area for roosting/commuting and foraging bats.
- 3.2.10 Water voles have been recorded within 1km of site. Further water vole surveys were conducted 2008 and 2014 found water voles to be presence along a number of watercourse including Fox's Bank Brook. As water voles are mobile species further water vole surveys along these watercourses would be recommended considering proposed plans. These surveys would inform on additional mitigations and/or licencing requirements.

Amphibians and reptiles

- 3.2.11 Several areas of good habitat to support amphibians and reptiles were recorded within the Site and numerous amphibian records have been recorded in this locality, these included Great crested newts (European Protected species) and Common Toad (Priority species). However, amphibian surveys have been undertaken within the Site and found no great crested

newts; although great crested newts are recorded within the Site. Despite the fragmented habitat and major barrier to dispersal, amphibian surveys are recommended on the waterbodies present on site due to the mobility of these protected species.

- 3.2.12 Reptile species have been noted for the area, therefore further reptile surveys are also suggested particularly in areas of open mosaic, lowland wetland meadow as well as interfaces between habitats, to determine the reptile population on the site.

Invasive species

- 3.2.13 Several invasive species have been report by MEAS 2014a and b and TEP 2015a. To limit the spread of these invasive species and invasive species management plan would be prudent for the Site. This management plan would document the method of treatment and/or removal of the invasive plants to reduce further spread around the masterplan sites. Treatment programmes could last more than 5 years depending on the level and maturity of infestation on the Site.

Habitat of Conservation importance

- 3.2.14 Most habitats recorded on the Site hold some ecological potential for protected/notable flora and fauna. As most of the habitats present on the Site are widespread, proposed plans should be sympathetic to these communities. Development plans should limit their impact on these habitats, but where this is not possible, replication and enhancement to other areas of similar floristic characteristics should be encouraged and is in line with the NPPF guidance of 'no net loss' of biodiversity.

Priority habitat - woodland

- 3.2.15 Under paragraph 118 of the NPPF, planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland, unless the need and benefits of, the development in that location clearly outweigh the loss.

- 3.2.16 Proposed plans and development should limit works in areas of semi-natural broad-leaved woodland, including ancient woodland, as these ecological receptors are defined as irreplaceable and will be difficult to replicate in other areas of the Site, in line with recommendation made by MEAS 2014b. Where possible, plans should aim to retain as much of, if not all, of these woodland habitats. Development plans should aim to include woodland and create connecting corridors to fragmented areas of these habitats, with sympathetic and native tree planting. This could be included through tree line walkways, roads and cycle routes. Incorporating these enhancements into stepping stone areas, the search areas for habitat expansion and connectivity zones, would aid in increasing a more comprehensive use of habitats on site, see constraints plan in Appendix A, for these areas.
- 3.2.17 If incorporated correctly this type of design can provide biodiversity enhancement and gains in line with the objectives set out in the Knowsley Local Plan CS8 2a, c and d. As part of the design stage, plans should include a minimum 15m buffer surrounding this habitat to prevent damage and/or disturbance to the root systems.

Priority habitat – Lowland Meadows

- 3.2.18 Several areas of lowland grassland are recorded within the Site. Where possible, plans should aim to retain as much of, if not all, of these grasslands. Development plans should incorporate lowland meadows into designs as they can be used to provide open recreational spaces as well as areas for common grazing. Where feasible, designs are encouraged to create connections through road side verges, to these habitats. Designs should encourage native seed mixtures of similar floristic character to be used in the planting schemes. Use of the stepping stone areas, the search areas for habitat expansion and connectivity zones would aid in increasing a more comprehensive use of this habitat, see constraints plan in Appendix A, for these areas.

Priority habitat – wetland

- 3.2.19 Wetland areas present within the Site are predominantly to the south of the M62. These areas comprise of wet grassland and rush pasture within proximity to ponds and ditches. These habitats provide features and floral

assemblages that can be utilised by many protected and notable species including amphibians, reptiles and breeding birds. These habitats also provide additional storage for surface water and plant communities can withstand being submerged for longer periods of time compared to other communities. Where possible proposed plans should aim to retain these habitats, and use them within their plans as a natural receptor for water storage. Increasing the wetland habitat to provide naturalised drainage storage for surface water is encouraged. Use of the stepping stone areas, the search areas for habitat expansion and connectivity zones would aid in increasing a more comprehensive use of this habitat, see constraints plan in Appendix A, for these areas.

Priority habitat – Open mosaic (inland rock)

- 3.2.20 This habitat is predominantly present around the old colliery and associated disused industrial units. Open mosaic habitats provide features for many bird, reptiles, and invertebrate species. Where possible this habitat should be retained and enhanced, in line with recommendations made by MEAS 2014b.

Stepping stones areas

- 3.2.21 Stepping stone areas included pond, ditches, and streams. These features all many protected species to move across the site. Where possible proposed plans should retain these features, and create additional areas to facilitate and improve movement of notable species throughout the site. Creation of stepping stone areas could include tree line corridors, wild flower road side verges, additional water bodies and green roofs/bridges. Proposed plans should also include a buffer zone for riparian habitats to prevent degradation. Standard methodology consists of:
- 5m for streams <1m wide
 - 10m for streams 1-2m wide
 - 20m for streams >2m wide
- 3.2.22 Where buffer zones are greater than 20m it is unlikely to result in further significant benefits to the aquatic zones.

3.3 Assessment

- 3.3.1 The proposed development of the masterplan sites will have some impact on protected or notable habitats as indicated in the summary Table below:

Table 3.3: Assessment of ecological feature present on masterplan sites

Feature	Location	Level of Protection	Assessment
Habitats within the site			
Semi-natural broad leaved woodland, including ancient woodland	Several areas located throughout the site.	Possible TPOs, potential for roosting bats, nesting birds, and rich/rare botanical communities. Irreplaceable habitat under NPPF.	Determine whether any of the trees on site are subject to TPOs and act accordingly. Potential for protected and locally important species (e.g. breeding birds) and roosting bats. UK Priority habitat, NPPF refers to this habitat as irreplaceable and therefore should be retained. A minimum of 15m buffer zone should be places surrounding the site to prevent damage or disturbance to root systems.
Standing water and waterbodies	Number of waterbodies within the site	BAP priority habitat	Potential for breeding amphibians including great crested newts and water voles. Pollution prevention guidelines will need to be implemented if the water bodies are to impacted by the masterplan sites. A buffer zone should be placed around waterbodies as outlined in the previous section.
Lowland wetland meadows	Several areas throughout the site	BAP priority habitat	Potential for breeding birds, commuting amphibians, foraging bats, and reptiles. UK priority habitat, where possible these areas should be retained. Connectivity

Feature	Location	Level of Protection	Assessment
			between fragmented areas can be achieved by wild flower road side verges.
Wetland	Many areas, normally associated with waterbodies	BAP priority habitat	Potential for breeding amphibians, breeding birds, foraging bats, invertebrates, and reptiles. UK priority habitat, where possible these areas should be retained. Use of wetland areas as natural surface water storage is encouraged and therefore increasing areas of these habitats could improve local surface water drainage.
Open Mosaic	Areas associated with the disused colliery and other derelict industrial units	BAP priority habitat	Potential for invertebrates, breeding birds and reptiles. UK priority habitat, where possible these areas should be retained. Nationally, these habitats are rare.
Protected Species			
Bats	Woodland and trees	Bat species and their roosts are fully protected under the Conservation of Habitats and Species Regulations 2010 and the WCA	Semi-natural broadleaved woodland, plantation woodland and ancient woodland have the potential for roosting, commuting and foraging bats.
Breeding birds	Hedgerows, trees, woodland and shrubs/tall ruderal	All breeding birds are fully protected under the Wildlife and Countryside Act 1981 (as amended)	There is habitat suitable to support breeding birds on site.

Feature	Location	Level of Protection	Assessment
	habitats.		
Amphibians	Standing water/waterbodies and marshy grassland	<p>WCA covers amphibians and reptiles in the following ways; protection against killing, injuring and sale apply to common lizard, slow-worm, grass snake, and adder. Although common toads are not protected under WCA, they are a BAP priority species.</p> <p>Conservation of Habitats and species Regulations 2010 (as amended) and WCA give full protection applies to great crested newts, natter jack toads, sand lizards and smooth snake.</p>	There is habitat suitable to support breeding amphibians on site, including great crested newts.
Mammals (Badgers, Water voles and Otters)	Woodland, waterbody banks and grassland	<p>Badgers – Badger Act 1992 and Bern Convention. Protection against disturbing and destroying setts, whilst badgers are occupying them.</p> <p>Water voles – WCA protects against the intentional killing or injuring of water voles. As well as damage, destroy or disturb to their place of shelter.</p> <p>Otters – Conservation of Habitats and species Regulations 2010 (as amended), WCA.</p>	There is habitat suitable to support mammals on site, including water voles and badgers.

4 Conclusions, Strategy, and Recommendations

4.1 Conclusion

- 4.1.1 From the desk study assessment undertaken and the review of the existing baseline information regarding ecological constraints, this report concludes that many protected/notable habitats and species have been found to be within or near the Site. The development provides suitable habitats to support a range of protected and notable flora and fauna.
- 4.1.2 Where possible, retention of these habitats to avoid adverse impacts is recommended. These habitats could be incorporated into the design plans as part of 'green spaces'. If habitat loss is unavoidable mitigation may also be incorporated within the development during the design stage to aid planning applications and further consultation with governing bodies and stakeholders. Any mitigation required for the development will be informed by the results of any ecological assessments conducted on the site as part of the detailed design scheme, in addition to the consideration of any comments from the local County Ecologist.
- 4.1.3 It would be prudent to incorporate mitigation, compensation, and enhancements within the proposed design to take into consideration the species currently supported on the Site.
- 4.1.4 A strategy to understand and consider the constraint present on site are as details in the below table.

4.2 Strategy Plan

- 4.2.1 The following table details a strategy to deal with the constraints present on site.

Table 4.1: Strategy plan for ecological features and constraint present on masterplan sites

Constraint	Survey	Requirement/ Level of protection	Propose	Timing and survey constraint
Habitats and protected species on site (PHASE 1)	Preliminary Ecological Appraisal (PEA)	Required as part of any planning application	Inform on any protected and/or notable habitats and species as well as designated sites. Previous survey now out of date.	No timing constraints – optimum timing between March to October due to the presence of floristic species.
Protected species surveys (PHASE 2)	A range of surveys may be required pending the outcome of the PEA.	Required as part of any planning application and to inform on any licensing requirements, mitigation, and enhancement in the construction phase.	Inform on the usage of site by protected and notable species. Further species specific licences may be required, pending the results of the surveys	Great crested newts – March to June Bat inspection – no timing constraints Bat Activity (including emergence) – March to October Water vole and Otters – March to September (two surveys may be required) Breeding birds – March to August Badgers – throughout the year. Best time for Bait marking/Activity – late February to late April and/or early September to mid-October. Reptiles – April, May and September.

Constraint	Survey	Requirement/ Level of protection	Propose	Timing and survey constraint
Environmental Impact	Environmental Impact Assessment (EIA)	Required as part of any planning application, as the Site is 175ha.	Assess the level of impact the masterplan sites will have of the surrounding environment.	No timing constraint – must be complied after all environmental surveys have been completed.
Statutory designated sites	No further survey requirement.	No further survey requirement	No further consideration	None
Non-statutory designated sites	No survey requirement, further consultation is required with stakeholders. Further assessment should review plans in line with local wildlife citation.	Receives protection under policy CS8 Knowsley Local Plan. Required as part of any planning application.	Earlier consultation regarding the masterplan sites will facilitate discussion about the notable features.	No timing constraint – early consultation preferred.

4.3 Recommendations

- 4.3.1 Following the review of the existing information conducted on the site the following recommendation are made with regards to the ecological constraints present on site.
- 4.3.2 In the first instance a Preliminary Ecological Appraisal (PEA) is recommended for the whole of the masterplan sites. This will update the existing baseline information conducted on site. As protected species are highly mobile, constraints present during the TEP survey may have moved or now not be using the site. A PEA report will inform on the ecological constraints present on site as well as inform on any further species surveys needed to comply with planning and protected species legislation.
- 4.3.3 To comply with planning legislation an Environmental Impact Assessment (EIA) will be required as part of a planning application. An EIA will investigate how the development will impact the surrounding environmental conditions and detail any mitigations/compensations that may be required to offset the impact of the development.
- 4.3.4 Further to this, several stands of invasive species have been noted during the site surveys and within the records. To limit the spread an invasive species management plan is recommended. This management plan would detail the methods of removal or maintenance to limit the spread of invasive plants. Some method programmes can take up to 5 years to complete.
- 4.3.5 From the information provided this assessment has recommended it would be prudent for development designs to retain semi-nature broadleaved woodland, including ancient woodland, present on site as these receptors are classified as irreplaceable in the NPPF and are difficult to replicate elsewhere. A buffer zone of a minimum of 15m should be placed surrounding this habitat to prevent root damage and disturbance.
- 4.3.6 Several BAP priority habitats have been located within the site, these include wetland, lowland meadows, and open mosaic. Where possible these habitats should be retained and incorporated into design plans. Improving habitat

connectivity is encourage, these can be achieved by include tree line corridors, wild flower road side verges and or replication of habitats elsewhere on the Site. Where possible waterbodies and watercourses should be maintained and/or enhanced within the site to improve amphibian habitats and water storage.

- 4.3.7 No statutory sites will be impacted as part of the proposed masterplan sites. Several non-statutory sites are present within the proposed masterplan sites, consultation with stakeholders regarding these local wildlife sites are recommended at the earlier possible stage. Further assessments and plans should review designs to make sure wildlife citations and objectives are still met/maintained, where habitats are impacted or removed compensation maybe required.

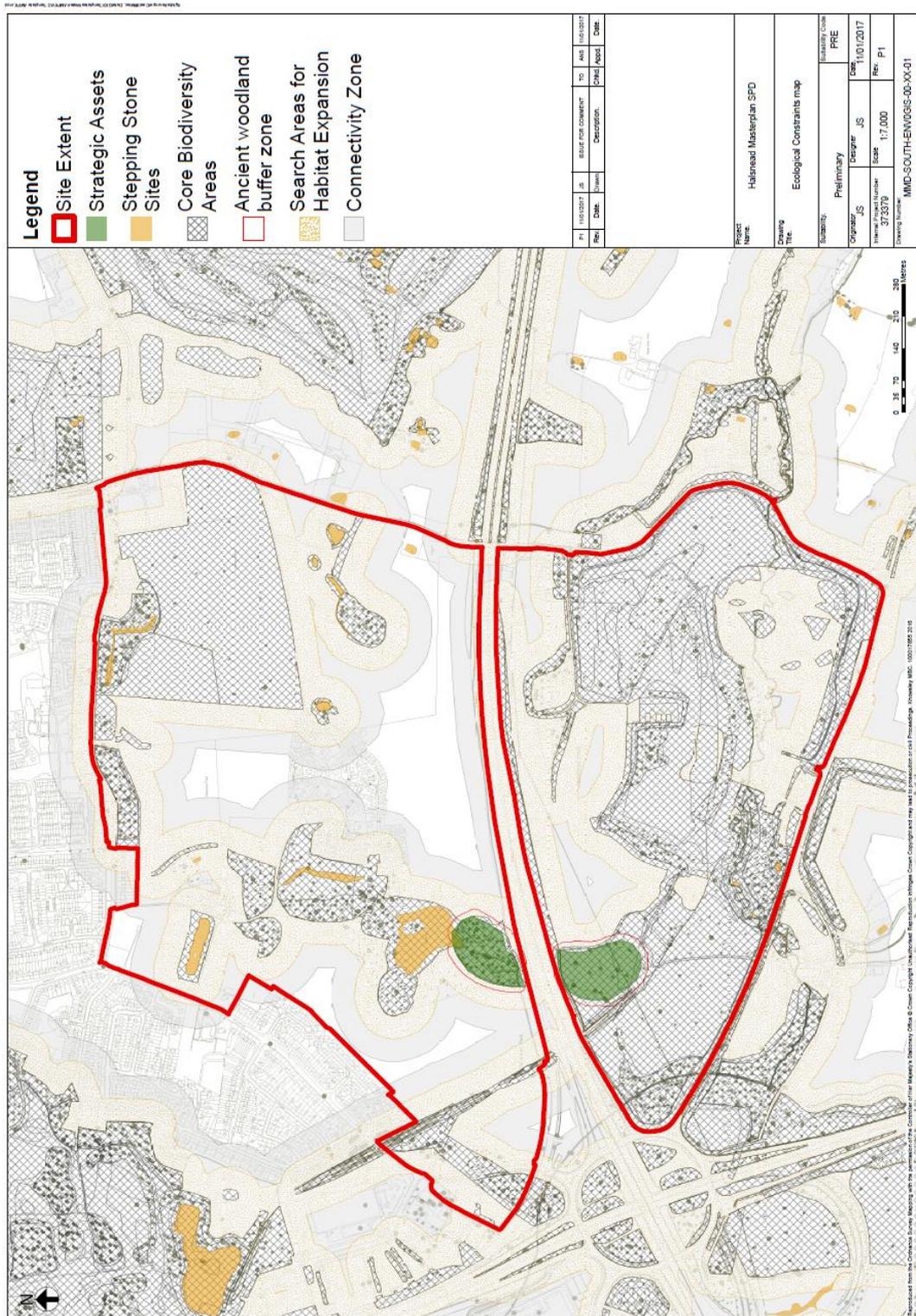
5 References

- 5.1.1 CIEEM (2013). Guidelines for Preliminary Ecological Appraisal. Chartered Institute of Ecology and Environmental Management, Winchester.
- 5.1.2 Joint Nature Conservation Council (JNCC) website: <http://jncc.defra.gov.uk/>
- 5.1.3 Multi-Agency Geographic Information for the Countryside (MAGIC) website: <http://magic.defra.gov.uk/>
- 5.1.4 Merseyside Environmental Advisory Services (MEAS) (2014a). Ecological Appraisal Part 1: Extended Phase 1 Habitat Survey Report.
- 5.1.5 Merseyside Environmental Advisory Services (MEAS) (2014b). Ecological Appraisal Part 2: Phase 2 Ecology Survey and Habitat Assessment report.
- 5.1.6 TEP, 2015a, Cronton Country Park, Knowsley, Merseyside, Ecological Assessment
- 5.1.7 TEP, 2015b. Cronton County Park, Knowsley, Merseyside, Ecological Management Plan
- 5.1.8 Where's the path website: <http://wtp2.appspot.com/wheresthepath.htm>
- 5.1.9 UK Biodiversity Action Plan (UKBAP) website: <http://jncc.defra.gov.uk/default.aspx?page=5155>
- 5.1.10 UK Grid Reference Finder website: <http://gridreferencefinder.com/>

Appendices

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A. Constraints Plan



B. Species specific legislation

The key United Kingdom section of legislation relating to ecology and the environment is the Wildlife and Countryside Act 1981 (as amended) which consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) in Great Britain. It is complemented by the Conservation (Natural Habitats, etc.) Regulations 1994 (as amended), which implements Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive). The Regulations provide for the designation and protection of 'European sites', and the protection of 'European protected species'.

The species and habitats listed by these measures are legally protected to varying degrees through the WCA. Together this Act and The Conservation of Habitats and Species Act 2010 they form the precedent for species and habitat protection in England and Wales.

The key policies which influence the ecology and nature conservation assessments are the:

- Planning Policy Statements and Supplementary Planning guidance: (PPS 2) Planning and Nature Conservation

Developers must ensure that they comply with the above legislation by fully assessing the potential impacts on protected species and habitats from the proposed masterplan sites. This assessment must be completed prior to the submission of the planning application and included in the application as a supporting document. The Planning Authority can then ensure that the necessary protected species and habitats surveys have been completed.

Species-specific legislation relevant to this report is outlined below:

B.1 Badgers

Badgers and their setts are protected under the Badgers Act 1992. This makes it an offence to:

- Directly or indirectly kill, injure or take badgers,
- Cruelly ill-treat a badger,

- Dig for badger,
- Intentionally or recklessly damage or destroy a badger sett, or obstruct access to it,
- Cause a dog to enter a badger sett, and:
- Disturb a badger when it is occupying a sett.

B.2 Bats

All 17 species of UK bats and their roosts are fully protected under Section 9 of the WCA and the Conservation of Habitats and Species Regulations 2010 (as amended) and regulation 41 for European Protected Species plus all are UK BAP priority species. It is an offence to;

- Intentionally or recklessly kill, injure or take a bat,
- Intentionally or recklessly damage,
- Destroy or obstruct access to any structure or place used for shelter or protection by a bat, and;
- To intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for that purpose.

B.3 Otter

Otter are European Protected species and are full protected under Section 9 of the WCA and the Conservation of Habitats and Species Regulations 2010 (as amended). It is an offence to;

- Intentionally or deliberately kill,
- Injure or take an otter,
- Intentionally or deliberately damage,
- Destroy or obstruct access to any structure or place used for shelter or protection by an otter, and;
- To intentionally or deliberately disturb an otter while it is occupying a structure or place which it uses for that purpose.

B.4 Reptiles and Amphibians (including Great Crested Newts)

Reptile and amphibian species are generally wide-spread species throughout the whole of UK reptiles and amphibians are listed in Schedule 5 and 9 of the WCA. It is an offence to:

- Trade and/or sell

Reptiles are further protected and it is an offence to, also:

- Kill and injure.

Great Crested Newts

Further to the protection afforded to amphibians and reptiles under Schedule 5 and 9 of the WCA, Great Crested Newts are also afforded protection as a European protected species. Therefore, it is an offence to:

- Kill, injure or capture a great crested newt,
- Disturb a great crested newt in its place of shelter or breeding,
- Obstruct, damage or destroy areas of habitation, and;
- Possess, control transport, sell, exchange or offer for sale or exchange any dead or live great crested newts.

B.5 Breeding birds

All wild birds are afforded protection under Part 1 of the WCA. It is an offence to:

- intentional or reckless killing, injuring and taking.
- Active nests are protected from intentional or reckless taking, damage and destruction.

Birds listed under Schedule 1 have further protection from disturbance during the breeding season.

B.6 Water voles

The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species. Therefore, it is an offence to:

- Intentionally capture, kill or injure water voles
- Damage, destroy or block access to their places of shelter or protection (on purpose or not taking enough care)
- Disturb them in a place of shelter or protection (on purpose or by not taking enough care)
- Possess, sell, control or transport live or dead water voles or parts of them (not water voles bred in captivity)