SANG

Appendix S1: MEAS email response regarding additional information required

Joseph Dance

From: Joe Whittick <Joe.Whittick@sefton.gov.uk>
Sent: 07 December 2022 16:35
To: Joseph Dance
Subject: RE: Leverhulme planning applications at Sites A-G - Ecology response

Hi Joe

Actually, I am the person looking at this one now – so you've come to the right place.

I've had a look at all of the additional information and updated our response. I think the main outstanding issues prior to determination are:

- Requirement for the full completed Metric
- Non-breeding (winter) bird survey results to allow for the ALSE/HRA
- Bat surveys of any trees that will be removed in relation to the proposed car park
- Further information with regard to access across the site outside of proposed footpaths

Based on the ecology reports that have been submitted the following would need to be secured by condition:

- A Construction Environmental Management Plan (CEMP), primarily to protect the existing woodland areas
- RAMs for amphibians, including great crested newt (or as part of the CEMP)
- RAMs for badger and hedgehog, including a pre-commencement check/survey of the site (or as part of the CEMP)
- Breeding bird precautions (or as part of the CEMP)
- Invasive species method statement in relation to Japanese knotweed (either as a separate document or as part of the CEMP)
- Production of a Landscape and Ecological Management Plan (LEMP)

Outside of this application, it is still our position that the SANG is not adequate to mitigate recreational pressure impacts for the associated housing proposals, and that there should be an opt-in to the Wirral Recreational Pressure Interim Approach and associated commuted sum.

Let me know if you have any queries regarding the above

Best regards

Joe

Joe Whittick MCIEEM
Ecologist

Telephone: 0151 934 2365

Merseyside EAS
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Roby Road
Huyton
L16 3NA

General Enquiries: 0151 934 4951
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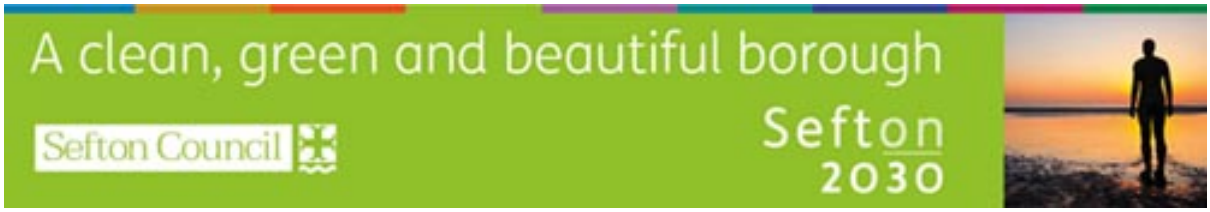

Development Management and Planning Applications email to measdcconsultations@sefton.gov.uk
General Enquiries email to EAS.info@sefton.gov.uk
Historic Environment Record email to Merseyside.HER@sefton.gov.uk
Local Environmental Record Searches email to info@merseysidebiobank.org.uk
Individual Officers email to name.surname@sefton.gov.uk or name.surname@eas.sefton.gov.uk

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From: Joseph Dance <joseph.dance@tylergrange.co.uk>
Sent: 06 December 2022 09:08
To: Joe Whittick <Joe.Whittick@sefton.gov.uk>
Cc: simon.handy@struttandparker.com; WATSON Edward <Edward.Watson@struttandparker.com>; Amy Sherwin <amy.sherwin@tylergrange.co.uk>
Subject: FW: Leverhulme planning applications at Sites A-G - Ecology response
Importance: High

Hi Joe,

Hope you're well? Appreciate you aren't the person looking at this one, but is there anything you can do to move things along for a response please?

The deadline for determination is today and the client would just appreciate how to go about a refusal or non-determination etc.

Kind regards,

Joe

Joseph Dance
Associate

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From: Joseph Dance <joseph.dance@tylergrange.co.uk>
Sent: 24 November 2022 13:57
To: measdcconsultations <measdcconsultations@sefton.gov.uk>; WATSON Edward <Edward.Watson@struttandparker.com>
Cc: simon.handy@struttandparker.com; Amy Sherwin <amy.sherwin@tylergrange.co.uk>
Subject: RE: Leverhulme planning applications at Sites A-G - Ecology response
Importance: High

Good afternoon,

Apologies for chasing, but I am informed that the application for the SANG application (APP/22/01502) which is related to the 8 Leverhulme resi sites (but a separate application) is due for determination on the 6th of December (with no extension anticipated). We'd obviously want to ensure you have all the information you need to make a decision so if there's anything I can supply you with just let me know.

As I understand it, you require the following information based on your response to the application (attached):

- A PEA report. It appears you may not have seen it, but I have attached an ecological assessment report produced by the Environment Bank. It's not badged as a PEA but it does everything that's required under BS42020 and the points raised in Para 34.
- Assessment of the SANG site's suitability as Functionally Linked Land (Para 34) – we are undertaking over-wintering bird surveys to this regard, although the results of this won't be available until next Spring. In any event (i.e. if birds are present, I suspect that even if qualifying birds are present it won't be across the whole site area, and the SANG design can be tweaked in due course in line with your comments regarding the areas of 'open access' i.e. dog walking. I do actually think that if birds are present in certain areas of the site, it could be a 'constraint' to work with by introducing screening, interpretation boards and bird viewing points with access restricted only to paths (and sealed off) in these areas.
- We are yet to receive feedback from NE on the SANG application, but expect it would align with your comments re: its suitability to act as FLL.
- I will send the raw BNG metric when I have it

I also attach additional documentation which you may or may not have seen to give further information regarding the proposed SANG. The size/principle of it is sound in my opinion and, subject to the results of the bird surveys, specific walking routes/open access areas can be re-designed once the results of the bird surveys available.

I'd appreciate it if you're able to review the attached and let me know if the documentation satisfies the PEA/BNG points at least whilst the additional bird work to confirm the specific design of the SANG can be ironed out. I have also relayed to the client the need for the SAMMs payments in addition to the SANG.

If you do need anything else just let me know.

Kind regards,

Joe

Joseph Dance
Associate

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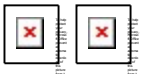

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From: Joseph Dance <joseph.dance@tylergrange.co.uk>
Sent: 22 November 2022 15:56
To: measdcconsultations <measdcconsultations@sefton.gov.uk>
Cc: simon.handy@struttandparker.com; Amy Sherwin <amy.sherwin@tylergrange.co.uk>; WATSON Edward <Edward.Watson@struttandparker.com>
Subject: RE: Leverhulme planning applications at Sites A-G - Ecology response

Afternoon all,

Is anyone able to get back to me on the below please? Our client is just quite keen to understand if there's any additional information you need to make a revised decision/comment on, which may otherwise be waiting and available.

Kind regards,

Joe

Joseph Dance
Associate

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From: Joseph Dance <joseph.dance@tylergrange.co.uk>
Sent: 09 November 2022 11:00
To: measdcconsultations <measdcconsultations@sefton.gov.uk>
Cc: simon.handy@struttandparker.com; Amy Sherwin <amy.sherwin@tylergrange.co.uk>; WATSON Edward <Edward.Watson@struttandparker.com>
Subject: FW: Leverhulme planning applications at Sites A-G - Ecology response
Importance: High

FAO Lucy Atkinson

Morning Lucy,

Thank you for your time on the phone just. As discussed, you'll be aware that the batch of 7 Leverhulme sites have recently been refused, which was expected, but the objective now as it heads to appeal is to minimise the RfR, of which ecology is one.

It appears that your holding objection on all of the sites is due to the lack of information submitted, which I believe is addressed with the information Simon has recently sent over and which I attach again for ease of reference.

In lieu of a formal review of the detail of each attachment, I'd be grateful if you or any of your other colleagues are able to confirm that the attached constitutes the information you've asked for – just let me know if you need anything else.

Kind regards,

Joe

Joseph Dance
Associate

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From: HANDY Simon
Sent: 17 October 2022 11:51
To: measdcconsultations@sefton.gov.uk
Cc: WATSON Edward (Edward.Watson@struttandparker.com) <Edward.Watson@struttandparker.com>; Sue Charlton <scharlton@environmentbank.com>
Subject: RE: Leverhulme planning applications at Sites A-G - Ecology response

FAO Lucy Atkinson and Nicola Hayes

Dear Lucy and Nicola,

Further to my email below, I write to provide you with the applicant's response to the ecological matters raised by MEAS in relation to the seven Leverhulme planning applications.

Please find attached a spreadsheet that details our responses or position on the matters that have been raised, alongside copies of the Great Crested Newt eDNA results for sites B, C and D in the form of appendices to the respective Environmental Statement ecology chapters.

As with our air quality submission from last week, I would be grateful if you could acknowledge receipt of these details and inform the planning officers at the Wirral if you feel these particular aspects of your previous consultation comments have been addressed.

Many thanks.

Simon Handy BA (Hons) MPlan MRTPI
Director – Head of Oxford Planning
Development & Planning

Strutt & Parker, 269 Banbury Road, Oxford, OX2 7LL
Direct: 01865 366673 | Mobile: 07587 038241 | Office: 01865 366666

From: HANDY Simon
Sent: 11 October 2022 12:02
To: measdcconsultations@sefton.gov.uk
Cc: WATSON Edward (Edward.Watson@struttandparker.com) <Edward.Watson@struttandparker.com>
Subject: Leverhulme planning applications at Sites A-G - Air quality response

FAO Lucy Atkinson and Nicola Hayes

Dear Lucy and Nicola,

My name is Simon Handy and I am the planning agent for the seven outline planning applications submitted by the Leverhulme Estate in the Wirral (refs. OUT/22/00941, OUT/22/00942, OUT/22/00943, OUT/22/00944, OUT/22/00945, OUT/22/00946 and OUT/22/00947).

Please find attached updated Environmental Statement chapters in relation to air quality that address your previous consultation comments that climate change had not been taken into account as part of the applications.

I would be grateful if you could acknowledge receipt of these updated chapters and inform the planning officers at the Wirral if you feel these particular aspects of your previous consultation comments have been addressed. I'm hoping to provide you with a response in relation to ecology matters for these seven applications later this week.

Many thanks.

Simon Handy BA (Hons) MPlan MRTPI
Director – Head of Oxford Planning
Development & Planning

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Appendix S2: Over-wintering bird survey report produced by Tyler Grange

Non-Breeding Bird Survey Report

Tyler Grange

SANG, Leverhulme
30th March 2023

TG Report No. 15466_R01_AS_CW

Report No:	Date	Revision	Author	Peer Review	Approved
15466_R01	30th March 2023	-	Amy Sherwin MBiol, ACIEEM	Joseph Dance BSc (Hons) MCIEEM	Joseph Dance BSc (Hons) MCIEEM

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Plans:

Plan 1: Wintering Bird Survey Results 15466/P01

Summary

S.1. This report has been produced by Tyler Grange Group Ltd. on behalf of Strutt and Parker for the Leverhulme Estate. It sets out the findings of a series of non-breeding bird surveys, which were undertaken to inform a full planning application for a Suitable Alternative Natural Green Space (SANG) Located off Barnston Road on the Wirral– hereafter referred to as 'the site'.

S.2. Following consultation response from Natural England (NE) and Mersey Environmental Advisory Service (MEAS), and given the site's relative proximity to the Mersey Estuary SPA/ RAMSAR and Dee Estuary SPA/Ramsar/SAC, a total of ten non-breeding bird surveys were undertaken, starting in November 2022 and finishing in March 2023, with two surveys per month.

S.3. A number of red list species were recorded during the surveys. Of these species, curlew were of particular note given their preference for open agricultural land and being a qualifying feature of the Mersey Estuary SPA/Ramsar and Dee Estuary SPA/Ramsar/SPA. The numbers and frequency of curlew recorded has resulted in the conclusion that the site is functionally linked to the Dee Estuary and Mersey Estuary for this species only. Individuals of other qualifying duck species were also recorded, but not in sufficient frequency or quantity to be functionally linked to the estuaries concerned. Other species of conservation concern associated with ditches, hedgerows and woodland copses were also recorded on each visit, but would not be impacted by the proposals.

S.4. Based on the surveys completed, it is considered that the site provides local ecological importance for winter birds. The proposals retain hedgerows, woodlands and ditches and therefore the majority of the species recorded during the surveys would continue to have access to this habitat and would remain unaffected post-development. Whilst curlew were regularly recorded within the site, open areas of agricultural are retained within the site, and through appropriate management would be able to accommodate curlew over-winter (see **15466_R02**) and provide enhancements *in perpetuity*.

S.5. Overall, the proposals would not impact upon the site's importance for over-wintering birds or any individual populations of birds within the site as it would not be in contravention of the conservation objectives of the Mersey Estuary SPA/ RAMSAR, Dee Estuary SPA/Ramsar/SAC or Mersey Narrows and North Wirral Foreshore Ramsar and SPA.

Section 1: Introduction and Context

1.1. This wintering bird survey report has been produced by Tyler Grange Group Ltd (TG) for Strutt and Parker on behalf of the Leverhulme Estate and relates to the development of a Suitable Alternative Natural Green Space (SANG) Located off Barnston Road on the Wirral. It is centred on OS Grid Reference SJ 27922 83120 and is hereafter referred to as 'the site'. The extents of the site are outlined below in **Figure 1,** and it is wholly located within Wirral Borough Council.

Figure 1: Site context and site boundary (red line). (Aerial imagery © Google Earth 2023)

1.2. The report assesses potential impacts in relation to wintering birds, particularly those identified as qualifying features of the Mersey Estuary SPA/Ramsar and Dee Estuary SPA/Ramsar/SAC arising from operation of the proposed SANG.

1.3. The extent of the proposed SANG is Shown in **Appendix 1.**

1.4. The site comprises a large area of open agricultural land dominated by species-poor pastures. Field boundaries comprise hedgerows, ditches and tree lines, with pockets of woodland and ponds both within and adjacent to the site. The surrounding land is similarly rural, comprising open agricultural land delineated by hedgerows and woodland copses, with urban development to the west.

Planning Background and Previous Studies

1.5. Consultation response from Natural England (NE) and Mersey Environmental Advisory Service (MEAS) on the planning application no (APP/22/01502) has advised that following the submission of the ecology reports written by Environment Bank (EB03130.19), further information should be submitted in relation to wintering birds to fully assess the impacts of the SANG. Specifically, this is in relation to the potential of the site to be functionally linked to the estuaries for one or more of the qualifying species.

Section 2: Legislation and Conservation Status

2.1. All birds are protected whilst actively nesting under the provisions of the Wildlife and Countryside Act (WCA) 1981 (as amended). Some receive additional protection under Schedule 1 of the Act. Several species are also listed as Species of Principal Importance (SoPI) under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

2.2. Reference is made to Birds of Conservation Concern (BoCC) by the royal society for the protection of birds (RSPB) / British Trust for Ornithology (BTO) . All breeding and wintering bird species in the UK, Channel Islands and the Isle of Man have been assigned to one of three groups (Red, Amber and Green) based on their conservation status. Each group is defined as follows:

- RED List species are those that are globally threatened according to the International Union for Conservation of Nature (IUCN) criteria; those whose population or range has declined rapidly (≥ 50%) in recent years; and those that have declined historically and not shown a substantial recent recovery;

- AMBER List species are those with an unfavourable conservation status in Europe, those whose population or range has declined moderately (25%-49%) in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations; and

- The remaining species are placed on the GREEN List, indicating that they are of low conservation priority, although population sizes should be monitored.

2.3. The site is situated in close proximity to three European-protected sites listed below:

- The Dee Estuary Ramsar, SPA and Special areas of Conservation (SAC) (2.5km west);

- The Mersey Estuary Ramsar and SPA (6.5km east); and

- Mersey Narrows and North Wirral Foreshore Ramsar and special protection area (SPA) (8.3km north).

2.4. All three sites are designated for their internationally significant numbers of overwintering and migrating bird species. To inform an impact assessment of future development within the site on the Mersey Estuary, Dee Estuary and Mersey Narrows and North Wirral Foreshores and their qualifying bird features, non-breeding (passage and wintering) bird surveys have been carried out in 2022/2023. The following birds are noted as primary reasons for the selection of these sites, due to their internationally important numbers overwinter.

Dee Estuary Ramsar, SPA and SAC

- Bar-tailed godwit *Limosa lapponica*

- Sandwich Tern *Sterna sandvicensis*

- Redshank *Tringa totanus*
- Shelduck *Tadorna tadorna*
- Teal *Anas crecca*
- Pintail *Anas acuta*
- Oystercatcher *Haematopus ostralegus*
- Grey plover *Pluvialis squatarola*
- Knot Calidris *canutus islandica*
- Black-tailed godwit *Limosa limosa*
- Dunlin *Calidris alpine*
- Curlew *Numenius arquata*

Mersey Estuary SPA

- Golden Plover *Pluvialis apricaria*
- Redshank
- Shelduck
- Teal
- Pintail
- Dunlin
- Black tailed Godwit

Mersey Narrows and Noth Wirral Foreshore Ramsar and SPA

- Bar-tailed godwit
- Knot
- Common tern *Sterna hirundo*
- Little gull *Hydrocoloeus minutus*

Section 3: Methodology

3.1. The objective of the surveys was to identify important bird species and in what numbers, both in terms of number of species and quantities of those species present, and the areas that they favour.

3.2. Attention was paid to the presence of birds of conservation concern (species that are listed as either red or amber by the (RSPB)) and those species listed as Priority Species, as well as the species identified as qualifying features of the European Sites.

3.3. The areas indicated on **Plan 1** were surveyed for all bird species, including a visual assessment of land directly adjacent to the site. Two surveys per month were completed between November 2022 and March 2023 by experienced ornithologists. Standard methodologies were used[1,2,3], and involved undertaking a transect route across the site. Details of the ten survey visits are shown in **Table 1** below.

Table 1 Date, time and weather conditions during the 3 survey visits

Survey	Date	Time	Weather	Surveyor
1	22/11/2022	07:45-10:15	Temperature 7-8°C, wind 2, cloud 8-6, precipitation 0	Joshua Broster
2	01/12/2022	07:45-10:15	Temperature 5-6°C, wind 2-3, cloud 8-6, precipitation 0	Joshua Broster
3	08/12/2022	07:20-10:00	Temperature -2.5-0°C, wind 1, cloud 0-4, precipitation 0	Damion Young
4	19/12/2022	08:15-10:45	Temperature 13°C, wind 3, cloud 8, precipitation 0	Joshua Broster
5	05/01/2023	08:15-10:45	Temperature 9-10°C, wind 3, cloud 8, precipitation 0	Joshua Broster
6	26/01/2023	08:30-10:30	Temperature 3°C, wind 1, cloud 7, precipitation 0	Amy Sherwin
7	02/02/2023	08:05-10:00	Temperature 9°C, wind 3, cloud 7, precipitation 0	Nick Bell
8	21/02/2023	07:30-09:50	Temperature 8°C, wind 1, cloud 3, precipitation 0	Nick Bell
9	02/03/2023	07-20-08:45	Temperature 5°C, wind 1 cloud 8, precipitation 0	Joseph Dance

[1] Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S.H. (2000). *Bird Census Techniques*. Academic Press.

[2] Gilbert, G., Gibbons, D.W. and Evans, J. (1998). *Bird Monitoring Methods: A Manual of Techniques for Key UK Species*. RSPB.

[3] SNH (2014) *Recommended bird survey methods to inform impact assessment of onshore wind farms.*

Survey	Date	Time	Weather	Surveyor
10	15/03/2023	07:00-08:30	Temperature -1-2°C, wind 1, cloud 2-0, precipitation 0	Amy Sherwin
Wind – Beaufort scale, cloud cover expressed as Octas (8ths cover).				

3.4. The aim of the surveys was to assess the presence of non-breeding birds, in particular to assess if the site is functionally linked to any of the European Sites considered.

3.5. The identity and activity of all birds, either seen or heard, were recorded on maps of a suitable scale.

3.6. Although the same survey route was used during all visits, the starting point and survey direction were alternated during each survey so that all areas were covered at varied times after sunrise to ensure even coverage during the peak period of bird activity.

3.7. Over-flying birds such as corvids, pigeons and gulls were not recorded throughout the duration of these surveys.

3.8. The results of each visit were then transcribed onto a summary map in order to identify species showing fidelity to areas of habitat over several site visits.

3.9. The conservation status of the birds observed was ascertained through consultation with national, regional and local bird reports.

Limitations

3.10. Only one survey was conducted in November 2022 but three surveys were conducted in December 2022. This is not expected to have affected the results gained during the surveys.

Section 4: Survey Results

4.1. **Table 4.1** below outlines all the species of conservation concern (BoCC) recorded in the site during the ten surveys. An asterisk (*) specifies which species the survey visit to which the peak number is given while for those with the same peak count across all visits, the peak count is not highlighted.

Table 4.1: Species recorded onsite during surveys.

Species	**Survey Visit**	**Peak Numbe**	**SoPI[4]**	Qualifying Specie
Red Listed				
Curlew N*umenius arquata*	1, 2, 3, 4, 5, 6, 7*, 8, 9	122	Yes	Dee estuary SPA and Mersey Estuary SPA as part of an assemblage
Woodcock Scolopax rusticola	1, 2, 5	1	No	No
Herring Gull *Larus argentatus*	1*, 2, 3, 5, 7, 8	4	Yes	No
Skylark *Alauda arvensis*	1, 4, 5, 6, 8	1	Yes	No
Starling *Sturnus vulgaris*	1, 2, 3, 4*, 5, 7, 8, 9	17	Yes	No
Fieldfare *Turdus pilaris*	1, 2, 4*, 5	8	No	Yes
House sparrow *Passer domesticus*	1, 2*, 3, 4, 5, 6, 8	12	Yes	No
Green Finch *Chlaris chloris*	1	1	No	No
Linnet *Linaria cannabina*	1*, 2, 4, 5	3	Yes	No
Grey Partridge *Perdix perdix*	2	1	Yes	No
Mistle thrush *Turdus viscivorus*	3, 4, 5	1	Yes	No
Amber Listed				
Greylag Goose *Anser anser*	1,9*	2	No	No
Pink-footed Goose *Anser brachyrhynchus*	4*	838	No	No
Mallard *Anser platyrhynchos*	1, 2*, 3, 4, 5, 6, 7, 8, 9, 10	16	No	No
Teal *Anas crecca*	1, 5, 6*	2	No	Dee estuary SPA/ Ramsar and Mersey Estuary SPA/ Ramsar

[4] Species of Principal Importance

Species	Survey Visit	Peak Numbe	SoPI[4]	Qualifying Specie
Sparrowhawk *Accipiter nisus*	1, 4, 5	1	No	No
Moorhen *Gallinula chloropus*	1, 4. 5	1	No	No
Black-headed Gull *Chroicocephalus ridibundus*	1, 2, 3, 4*, 5, 6	5	No	No
Common Gull *Larus canus*	4	1	No	No
Wood pigeon *Columba palumbus*	1*, 2, 3, 4, 5, 6, 7, 9, 10	80	No	No
Rook *Corvus frugilegus*	1, 4	1	No	No
Wren *Troglodytes troglodytes*	1*, 2, 3, 4, 5, 6, 7, 8, 9, 10	4	No	No
Redwing *Turdus lliacus*	1, 2, 3, 4*, 5, 6, 7	42	No	Yes
Song thrush *Turdus philomelos*	1, 2, 4, 5, 6*, 9, 10	3	Yes	No
Meadow pipit *Anthus pratensis*	1*, 2, 4, 5	4	No	No
Dunnock *Prunella modularis*	1*, 2, 3, 4, 5, 7, 8,9	3	No	No
Grey Wagtail *Motacilla cinerea*	1, 4	1	No	No
Stock dove Columba oenas	2, 4, 5	1	No	No
Kestrel *Falco tinnunculus*	2, 4, 5, 6	1	No	No
Bullfinch *Pyrrhula pyrrhula*	4	1	No	No
Shoveler *Anas clpeata*	9	1	No	No
Shelduck *Tadorna tadorna*	9	1	No	Dee estuary SPA/ Ramsar and Mersey Estuary SPA/ Ramsar

4.2. Additionally, the following Green listed species were recorded across the ten surveys;

- Buzzard *Buteo buteo*
- Collared dove *Streptopelia decaocto*
- Great Spotted Woodpecker *Dendrocopos major*
- Jay *Garrulus glandarius*
- Magpie *Pica pica*
- Jackdaw *Coloeus monedula*

- Carrion crow *Corvus corone*
- Coat tit *Periparus ater*
- Blue tit *Cyanistes caeruleus*
- Great tit *Parus major*
- Long-tailed tit *Aegithalos caudatus*
- Goldcrest *Regulus regulus*
- Nuthatch *Sitta europaea*
- Treecreeper *Certhia familiaris*
- Blackbird *Turdus merula*
- Robin *Erithacus rubecula*
- Pied Wagtail *Motacilla alba*
- Chaffinch *Fringilla coelebs*
- Goldfinch *Carduelis carduelis*
- Siskin *Spinus spinus*

4.3. 11 red list species were recorded during the wintering bird surveys: curlew, woodcock, herring gull, skylark, starling, fieldfare, house sparrow, greenfinch, linnet, grey partridge and mistle thrush.. Additionally, 21 amber-list species were also recorded across the ten visits, of these, pink-footed goose, teal, common gull, redwing and shelduck are over-wintering birds, whereas all other amber list species are resident to the UK and will utilise the site year-round.

4.4. Two birds for which the Mersey/ Dee Estuary SPA/Ramsar are designated were recorded within the site during the ten surveys. Of these shelduck had a peak count of one and teal had a peak count of two. These do not constitute more than 1% of the Mersey/Dee Estuary population (nor does it regularly support such species) and therefore the site is not considered to be functionally linked for either species.

4.5. An additional species for which the Dee Estuary is designated was regularly recorded onsite. Curlew were recorded during nine of the survey visits (See **Plan 1**), with a peak count of 122 birds on visit seven. The number of curlews onsite regularly constituted more than 1% of the Dee Estuary population (five-year mean average 3,553[5]) meaning that the site is considered functionally linked to the Dee Estuary SPA/ Ramsar.

4.6. Other species which were regularly recorded within the site are those species which are commonly associated with using arable habitats and hedgerows. Meadow pipits and skylark were regularly recorded on the ground within the site. Fieldfare, linnet, starling, house

[5] https://app.bto.org/webs-reporting/numbers.jsp

sparrow and redwing were all recorded in large flocks associated with hedgerows and woodland copses.

4.7. Additionally a number of wildfowl including greylag goose, mallard, moorhen, shoveler and shelduck were recorded in and around the onsite pond in the northwest of the site. Pink-footed geese were regularly noted to pass over the site, landing on one survey with a peak count of 838 in the field to the southwest of the site. The site is not considered to regularly support large numbers of pink-footed geese as they were only recorded once.

4.8. All other species with the exception of the wood pigeon which is common and widespread within the area were recorded in small numbers across the surveys.

Section 5: Potential Impacts, Mitigation and Enhancements

5.1. Surveys carried out in 2022/2023 found that the site is considered functionally linked to the Dee Estuary SPA/ Ramsar and Mersey Estuary SPA/Ramsar for curlew only. However, with the implementation of the management plan (**15466_R02**), a 3.3ha parcel of land has been proposed within the SANG which will guarantee enhancements for curlew are secured in perpetuity.

5.2. The assemblage of other wintering birds within the site is considered to be of local ecological importance. The majority of species recorded were associated with hedgerows, ponds, ditches, tree lines and woodland copses which would remain unaffected as a result of the proposals, other than temporary disturbance during the construction phase of the proposed works creating paths and a carpark onsite.

Appendix 1: Site Proposals

SANG Site Area - 22.6ha

Existing Trees to be Retained

Propcsed Trees
A variety of trees selected for their form, site suitability. To be plantec within new and existing hedgerows where appcrcriate. To be determined on site to ensure minimal impact on existing vegetation.
Acer camoestre, 12/-14cm heavy standarc, RB
Betula pendula, 12-14cm heavy standard, RB
Fagus sylvatica, 12-14cm heavy standard, RB
Quercus robur, 12-14cm heavy standard, RB
Sorbus aucuparia, 12-14cm heavy standard, RB

Propcsed Woodland
New woodlanc groups copsies to be planted at 1.5m spacings with native species in the following size and ratio:
Alnus glutinosa, 60-90cm, 10%
Betula pendula, 60-90cm, 15%
Corylus avellana, 60-90cm, 10%
Crataegus monogyna, 60-90cm, 20%
Fagus sylvatica, 60-90cm, 20%
Quercus robur, 60-90cm, 25%
Note: 10% of mix to be 10-12cm selected standard tree.

NB: All instances of proposed woodland within a non grazed field to be protected with Rabbit proof fencing.

Existing Hedgerows
Hedgerows to be routinsly managed and to be gapped up where necessary with native species hedgerow mix (see below).

Propcsed Native Species Hedgerows
To be planted as whips within existing hedgerows and along new lines of hedgerows. 5 plants per lnear meter on a double staggered row.To be protected by spiral rabbit guards and supports and stock proof fence where appropriate. Species to include:
Corylus avellana, 60-90cm, BR
Crataegus monogyna, 60-90cm, BR
Ilex aquifolium, 3 Litre, CG
Prunus spinosa, 60-90cm, BR
Ulex eurcpaeus, 60-90cm, BR

NB: All instances of new hedgerow with fields to be grazed to be protected with stock proof fence.

Existing Field Ponds
Selected partial clearance of existing vegetation as specified by project ecologist.

Existing Agricultural Fields
Existing fields to be enhanced to create native meadow

Propcsed Grassland
Propcsed Grassland Margins to be to be managed as long grasses with one or two annual cuts.

Propcsed Car Park
To be constructed using permeable sub base and wearing course to be compacted gravel. Parking bays to be demarcated using reclaimed setts. Trees and hedges to be planted to integrate and screen.

Propcsed Stock Proof Fence
To be post and wire fence with stock proof mesh. with Barbed straining wire to top of posts

Propcsed Field Gates
- Pedestrian gates to be self closing timber pedestrian access gates
- Proposed single leaf steel field gate.

Propcsed Gates
DDA corrcilant kissing gates to be used on field boundaries. To ensure individual fields remain enclosed and secure.

Propcsed Footpaths
To be DDA compliant. Surface to be compacted gravel/hoggin with timber edges. Litter and dog bins to be placed in strategic points. Benches to be positioned intermittently along path.

Propcsed Footpath Crossing Points
Sections of concrete surfacing to allow the crossing of agricultural vehicles.

Propcsed Footbridges
Timber footbridges with handrails and anti-slip strips on surface boards.

Existing Public Footpath
Shown in yellow/buff colour to be resurfaced in hoggin to match new paths

Existing Farm Track

north

PLANTING SCHEDULES

Native Species Tree Planting

SPECIES	SIZE/ SPEC	Total No.
Acer campestre	12-14cm heavy std	12
Betula pendula	12-14cm heavy std	12
Fagus sylvatica	12-14cm heavy std	12
Quercus robur	12-14cm heavy std	12
Sorbus aucuparia	12-14cm heavy std	12

Native Species Woodland Planting

SPECIES	SIZE/ SPEC	NW1 Area 836 m² 0.44no plants/sq m	NW2 Area 6345 m² 0.44no plants/sq m	NW3 Area 276 m² 0.44no plants/sq m	NW4 Area 861 m² 0.44no plants/sq m	NW5 Area 3208 m² 0.44no plants/sq m	NW6 Area 1129 m² 0.44no plants/sq m	NW7 Area 1506 m² 0.44no plants/sq m	NW8 Area 1350 m² 0.44no plants/sq m
Alnus glutinosa - 10%	60 - 90cm br transp	33	252	11	34	127	45	59	53
	10 - 12cm selected std	4	28	2	4	14	5	7	6
Betula pendula - 10%	60 - 90cm br transp	33	252	11	34	127	45	59	53
	10 - 12cm selected std	4	28	2	4	14	5	7	6
Corylus avellana - 10%	60 - 90cm br transp	37	280	13	38	141	50	66	59
Crataegus monogyna - 20%	60 - 90cm br transp	74	557	24	76	282	99	133	118
Fagus sylvatica - 10%	60 - 90cm br transp	33	252	11	34	127	45	59	53
	10 - 12cm selected std	4	28	2	4	14	5	7	6
Prunus spinosa - 15%	60 - 90cm br transp	55	418	18	57	211	74	100	90
Quercus robur - 25%	60 - 90cm br transp	82	627	27	86	318	112	149	135
	10 - 12cm selected std	9	69	3	9	35	12	17	15

Native Species Hedgerow Planting

SPECIES	SIZE/ SPEC	H1 Length 289m 5no plants/lin m	H2 Length 148m 5no plants/lin m	H3 Length 50m 5no plants/lin m	H4 Length 111m 5no plants/lin m	H5 Length 155m 5no plants/lin m	H6 Length 177m 5no plants/lin m	H7 Length 4m 5no plants/lin m	H8 Length 28m 5no plants/lin m
Corylus avellana - 15%	60 - 90cm br transp	216	111	38	83	116	133	3	21
Crataegus monogyna - 40%	60 - 90cm br transp	578	296	100	222	309	354	8	56
Ilex aquifolium - 5%	3 Litre CG	73	37	12	28	39	44	1	7
Prunus spinosa - 25%	60 - 90cm br transp	362	185	62	139	194	221	5	35
Ulex europeaus - 15%	60 - 90cm br transp	216	111	38	83	116	133	3	21

Metres
10 20 30 40 50 60 70 80 90 100
SCALE 1:1250

NB: For detailed information on Furniture, Gates and Hardworks, see drawing M2738-PA-12-V5 SANG Layout, Detail Location Plan

V8= Notation revision _22/08/22_JT
V9= Amendment to site area _23/09/22_HB
V10= Seasonal diversion added _13/02/23_HB
V11= Drawing date amended _13/02/23_HB
V12= Key amended _15/02/23_HB

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DWG TITLE. SANG Layout, Including Landscape & Footpath Proposals
PROJECT TITLE. SANGS
DRAWN BY: JT
CHECKED BY: NF
DWG NO. M2738-PA-11-V12
CLIENT. Leverhulme
DATE. 03.2023
SCALE. 1:1250@A1
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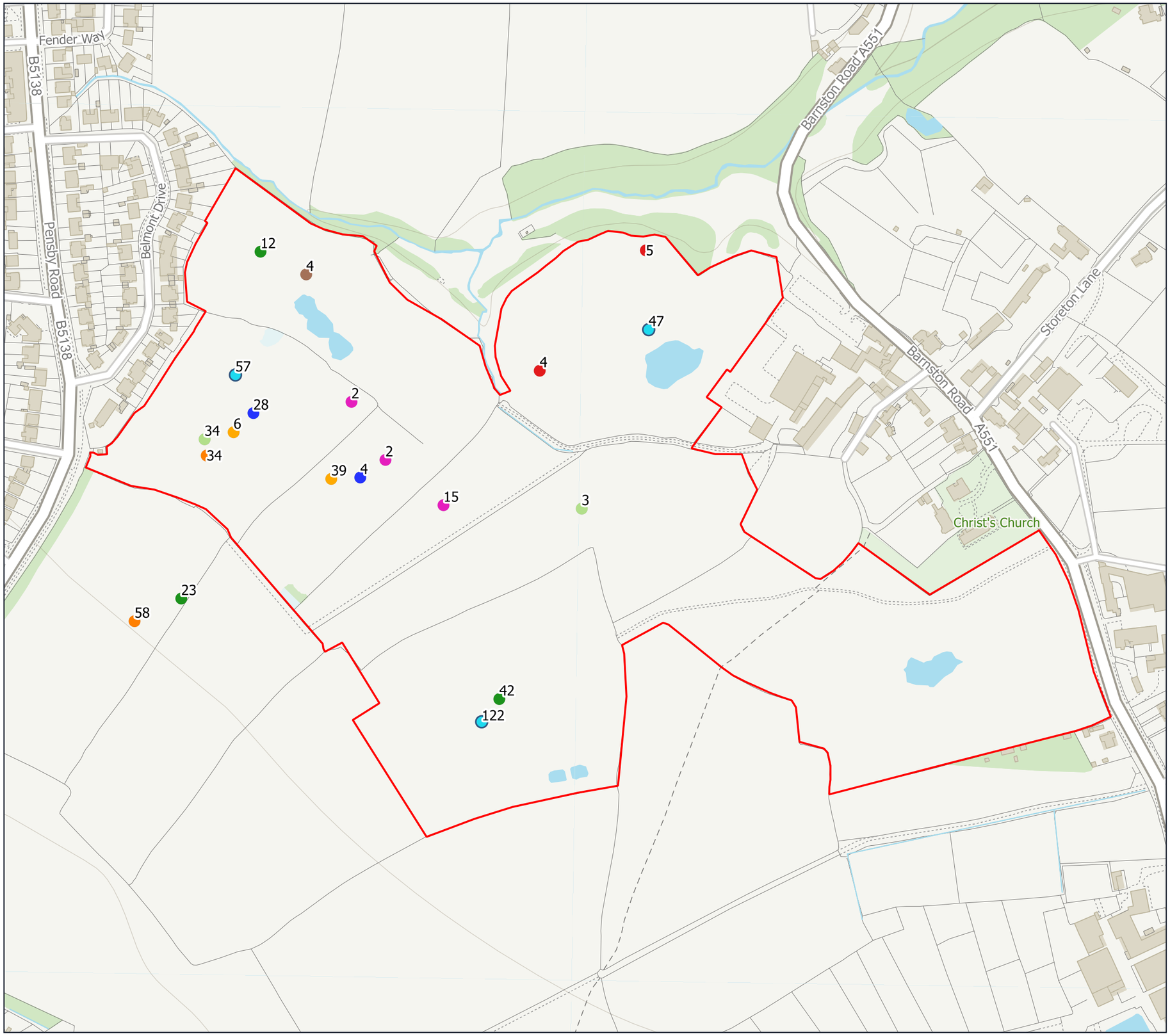
Plans:

Plan 1: Wintering Bird Survey Results 15466/P01



Redline Boundary

Peak Curlew Count per visit

- 22/11/22 (Visit 1)
- 01/12/22 (Visit 2)
- 08/12/22 (Visit 3)
- 19/12/22 (Visit 4)
- 05/01/23 (Visit 5)
- 26/01/23 (Visit 6)
- 02/02/23 (Visit 7)
- 21/02/23 (Visit 8)
- 02/03/23 (Visit 9)

N

0 75 150 m

Project	Leverhulme SANG Application
Drawing Title	Wintering Bird Survey Results
Scale	As Shown (Approximate)
Drawing No.	15466/P01
Date	28th March 2023
Checked	AS/JD

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Appendix S3: Identification of Functionally Linked Land supporting SPA waterbirds in the North West of England (NECR361)

Identification of Functionally Linked Land supporting Special Protection Areas (SPAs) waterbirds in the North West of England

First published October 2021

Natural England Commissioned Report NECR361

www.gov.uk/natural-england

Identification of Functionally Linked Land supporting Special Protection Areas (SPAs) waterbirds in the North West of England

Bowland Ecology

Published October 2021

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Author

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Keywords

Functionally Linked Land, Significance, Regularity

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Further information

This report can be downloaded from the Natural England Access to Evidence Catalogue: http://publications.naturalengland.org.uk/. For information on Natural England publications contact the Natural England Enquiry Service on 0300 060 3900 or email enquiries@naturalengland.org.uk.

Executive summary

‘Functionally linked land’ (FLL) is a term often used to describe areas of land or sea occurring outside a designated site which is considered to be critical to, or necessary for, the ecological or behavioural functions in a relevant season of a qualifying feature for which a Special Areas of Conservation (SAC)/ Special Protection Area (SPA)/ Ramsar site has been designated. These habitats are frequently used by SPA species and supports the functionality and integrity of the designated sites for these features.

There is a requirement for competent authorities to consider the importance of functionally linked habitats in Habitats Regulation Assessments (HRAs) when assessing new plans or projects to ensure the Conservation Objectives for the site can still be delivered. The impact of the loss of functionally linked land on European sites can be difficult to determine as there is often limited information available.

This project has been commissioned to map potential areas of Functionally Linked Land used by water birds in the North West. The aim of this project is to collate evidence from existing bird records to create maps showing important supporting habitats and improve understanding of which bird species are using these sites. This report will help to ensure the current geographical spread of supporting habitats across the north west are maintained and enhanced to ensure the integrity of the SPA sites are protected in the long term.

Bowland Ecology has undertaken this project in partnership with Natural England.

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Foreword

Natural England commission a range of reports from external contractors to provide evidence and advice to assist us in delivering our duties. The views in this report are those of the authors and do not necessarily represent those of Natural England.

1. Introduction

Functionally linked land (FLL) is supporting habitat beyond the boundary of a focal area, such as a designated site, that is connected to the life and reproduction of a population for which a site has been designated or classified. This land will be important to the continuing survival, reproduction and viability of the species population associated with a designated site.

This study aims to map potentially important FLL at a regional scale connected to six SPAs in the North West, using existing bird data collated from various sources, to improve Natural England's understanding of where FLL is located and which species are using these areas.

The following Special Protection Areas (SPA) are included study:

- Dee Estuary SPA;
- Mersey Narrows & North Wirral Foreshore SPA;
- Mersey Estuary SPA;
- Liverpool Bay SPA;
- Ribble & Alt Estuaries SPA; and
- Morecambe Bay & Duddon Estuary SPA.

2. Methodology

2.1 Definitions

For the purpose of this study, FLL is defined as: **areas of land occurring within 20 km of an SPA, that are regularly used by significant numbers of qualifying bird species**.

This definition has been developed and agreed with Natural England. A buffer of 20 km has been used based on the distance Pink-footed Geese tend to travel from their roost sites within an SPA site (see Section 2.3.a for more information).

For the purpose of this study:

A **significant** number of birds has been defined as 0.5% of the GB population or 1000 individuals.

The first of four Stage 1 criteria for designating SPAs states an area must support 1% of the GB population of a qualifying species. In collaboration with Calum Booth (RSPB) and Natural England it was decided that, for the purposes of this project an area should support at least 0.5% of the GB population of a qualifying species, or 1000 birds, to be considered FLL.

This provides a good threshold for data inclusion when applied to the suite of data used in this project.

A threshold of 0.5% of the **whole** GB population has been used, rather than 1% of the qualifying population for **each separate SPA**. Because the SPA population of individual species varies across the North West, using a separate threshold for each SPA would require associating each area of land in the North West with a specific SPA based on distance and would therefore not take account of birds moving between SPA's. For example, Pink-footed Geese, can travel up to 20 km in a day and it would be reasonable to suggest that these birds can cross over boundaries of different SPA associated FLL. While this study is limited by not considering the varying SPA populations, using a single threshold simplifies the approach, making the analysis much less time-consuming and resulting in a single set of outputs.

Regular usage is defined as being used by significant numbers of birds for 7 or more years since 2010.

Defining regular usage means counting the number of times a significance threshold is surpassed. Stroud *et al.* (2001) defined 'regular' as when a threshold is met in two thirds of the season for which adequate data are available. This project includes data from 2010, so 7 or more years has been used as a regularity threshold as this covers roughly two thirds of the seasons for which data is available, in accordance with Stroud *et al.* (2001). However, this proved to be a high threshold for this study as most of the data available had not been collected in a regular way. Therefore, areas have been mapped as moderate or low FLL even if the threshold for regularity was not met.

The definition of **qualifying bird species** includes both non-breeding qualifying species and assemblage qualifying species, as mentioned in the citations of the SPAs included in this study (Appendix 2). The species list has been decided on with help from Paul Ellis (Fylde Bird Club).

2.2 Methodology

The steps taken to carry out this project are as follows:

1. Data holders were contacted, including: British Trust for Ornithologists (BTO), Royal Society for the Protection of Birds (RSPB), Wetland Bird Survey (WeBS) counters and local bird groups, and existing available data was collated (please see Appendix 1 for copyright and licencing information). The datasets used in this study are as follows:
   - BTO WeBS Core Counts;
   - BTO BirdTrack Data;
   - Fylde Bird Club Data;
   - Data held by the Lancashire County Bird Recorder;
   - Lancaster and District Birdwatching Society (LDBWS) maps and data;
   - Supplied maps and data for the Dee Estuary from Colin Wells, Richard Smith and Neil Friswell;
   - Habitat data from the Centre of Ecology and Hydrology (CEH), specifically the Land Cover Map 2015 (LCM15).
2. This data was analysed to extract any usable records and converted into formats for use in GIS systems. This process involved filtering data to fit the definitions of significant and regular, as described above. If a recorded count was greater than or equal to the threshold for that particular species, it was included in the data set.
3. Individual data sets were used alongside habitat data, in order to create a final FLL vector layer showing polygons of FLL, labelled as high, moderate and low confidence FLL. This final layer can be scrutinised in GIS systems in order to show which species regularly visit these sites in significant numbers.

The data handling process for each dataset is discussed in more detail below.

2.3 Data Handling

This study into FLL looks at several different data sources as evidence for FLL. There are a number of caveats associated with each data source, these are outlined in the 'Results and Discussion' section of the report.

a) Vector (polygon) data:

WeBS core count data since 2010 was provided by the BTO and has been verified according to the definition of FLL described in the methodology. This data is considered to be of a high quality, as it is generally collected in a systematic way, meaning any WeBS sectors found to have significant and recurring counts were considered to have high confidence as FLL.

1. The WeBS sector boundaries polygon layer was acquired from the BTO. This was then examined in QGIS 3.16.3, and any WeBS sectors outside the SPA's, and within 20 km of the SPA's, were extracted. A 20 km limit due to time constraints was chosen with help from Calum Booth and Steve White, based on the distance Pink-footed Geese tend to travel from their roost sites within an SPA site. In the future, all WeBS sectors outside the 20 km boundary should also be considered.
2. The WeBS monthly core count data associated with these sectors was downloaded from the BTO WeBS database. The core counts were chosen to reflect the non-breeding counts relevant for this study.
3. Not all WeBS sectors had data from within the last 10 years. These sectors are shown as 'no data' on the maps, with a recommendation of further survey needed.
4. The data was then verified according to the thresholds of significance described above. Then, for each WeBS sector, the number of significant counts for each species and for each year was tallied for each WeBS sector using pivot tables in excel.
5. The total number of years where significant numbers of any species occurred was also counted, to identify those sectors that have not been visited regularly by a single species, but rather an assemblage of birds.
6. Those sectors with significant counts associated, and with regularly returning species, either individual species or assemblages, were uploaded into QGIS as high potential FLL. Any sectors with significant counts only were labelled as moderate FLL. Any sectors with no significant counts were labelled as low FLL, and the two types of no data – either not existing in the BTO database, or not requested at all (as they are outside the scope of this study), were defined accordingly.

b) Other polygon data

For some areas, FLL was mapped by other organisations, which provided local insight and higher spatial accuracy. Lancaster and District Birdwatching Society provided Bowland Ecology with hand drawn paper maps of potential FLL covering the entirety of their area, evidenced by their own bird data collected over the last 10 years. These were then digitised by Bowland Ecology to create the maps shown in this report (Appendix 3). The areas are labelled according to the following criteria provided by LDBWS:

1. High – regularly surveyed areas known to be FLL with precise field level data to evidence this.
2. Moderate - less well-watched areas known to be FLL anecdotally, sometimes with few specific counts to evidence it, but with a reasonably good overview of species presence / absence.
3. Low - thought to be FLL but better access / further surveys needed.

Maps were also provided by local experts for the Dee Estuary area. These consisted of polygons drawn on paper maps outlining areas that they knew anecdotally to be FLL, supported by a description and maximum counts. This anecdotal evidence has been mapped using GIS systems (Appendix 8).

The areas mapped that were associated with significant numbers of qualifying species were included in the Final FLL layer.

c) Point data

Fylde Bird Club and West Lancs Flora and Fauna Society provided their bird data for the species included in this study for the last 10 years, and this has been used alongside the BTO BirdTrack data to create maps showing significant bird counts. This data has poor spatial accuracy so can only be displayed at tetrad level.

The excel spreadsheets containing the point data were first filtered to include only SPA qualifying species since 2010, with the significance thresholds applied. Next, the spatial information associated with each significant record was interrogated to identify the spatial resolution. On the whole, the point data had poor spatial resolution, and thus the majority could only be plotted at tetrad level. The data was plotted by counting the total number of significant visits occurring in each tetrad. These maps are shown in Appendix 5-7.

Where more accurate 6 figure grid references were available (841 points) for the Fylde and County Bird Recorder datasets, these data were uploaded separately into the GIS system for further interrogation at field level to support the final FLL map layer.

d) Habitat data

The Centre for Ecology and Hydrology (CEH) Land Cover Map 2015 (LCM15) habitat vector layer was analysed to extract suitable habitats for water birds. The habitats included in the final FLL maps are arable and horticulture, and improved grassland.

The analysis of the habitat data involved counting the number of point data with accurate grid references that were located within each habitat type, in order to identify the habitats that are used most by water birds. The results of this calculation showed that ~80% of the 841 points were located in either arable or improved grassland, therefore these habitats have been shown in the final FLL maps.

e) Final Functionally Linked Land Map

Point data records with 6 figure grid references accurate to 100m were extracted from the Fylde Bird Club and County Bird Recorder datasets (841 points in total). These were used alongside the WeBS maps to draw polygons around any fields containing significant counts. All the fields that overlapped the 100 m square containing the point (the area covered by the grid square reference provided) were included in the polygon, as it can be assumed that that point could be located anywhere within that area. If polygons overlapped or were touching, they were combined to create a larger polygon. A series of rules were used to determine the ‘functionality’ level of each polygon:

1) Regularity – whether a polygon contains counts covering more than two thirds of the seasons of this study – minimum 7 years (Stroud and others, 2001)
2) Location accuracy – whether there is confidence that the significant count occurred within that polygon; and
3) Multiple counts – whether a point contains more than 1 significant count (see explanation below).

If a polygon meets the criteria of a rule, using the WeBS/point data as evidence, ‘Yes’ is written in the adjacent column, and 1 point would be given to the final ‘Functionality Score’. If the point does

not meet the criteria, then 'No' is inputted and 0 points are given. This method results in an overall functionality score between 0 and 3. Any polygons with a functionality score of 3 are definitely FLL, scores of 0, 1 or 2 increase in likelihood, but more data is needed to confirm this as definite FLL.

Multiple counts – this column differentiates between polygons containing 1 significant count, and polygons containing multiple significant counts. This has been included to lower the functionality score of areas only visited once, as this is most often a single Great White Egret count, which is an assemblage species.

More information about each polygon of FLL can be found in the attribute table when viewed in a GIS system. This includes a list of data sources used to map each individual polygon, a list of species that regularly visit that FLL polygon, and a list of occasional visitors to that polygon. A 'Justification/comments' column has also been included, which explains when decisions have been made to map polygons in that way, and a 'Further Recommendations' column, which offers advice on how to improve the maps in the future.

A distinction has been made between areas of FLL visited in significant numbers for 7 or more years by a single species, and areas of FLL visited in significant numbers for 7 or more times in total, but by an 'assemblage' of species. The former means that the area of FLL is important for the life cycle of one or more specific species, whereas the latter means that the area of FLL is important as it regularly supports a variety of different birds in significant numbers, yet no single species meets the regularity threshold on its own. This difference is shown in the 'Regular Species' column of the attribute table, either by listing the different species regularly using the site, or by writing 'assemblage'.

3. Results and Discussion

The **first** output of this study is a set of maps showing the individual datasets mapped separately, with FLL labelled either as high, moderate and low potential areas for the polygon data, or the number of significant visits to a tetrad for the point data. An example of each map is shown in this report and is further explained below (the full maps can be found in Appendix 3-9).

3.1. Drawing title: LDBWS FLL Plans (Figure 1)

a) Overview

These maps show coloured polygons representing different levels of potential FLL at individual field level:

- Dark pink showing high potential;
- Pink showing medium potential; and
- Pale pink showing low potential.

These maps have been produced on paper by the Lancaster and District Bird Watching Society, and have been digitised by Bowland Ecology.

Individual fields are classified as high, moderate and low potential FLL based on the number of birds recorded by the LDBWS. The map location is shown in the bottom left corner of each map. These maps also link to an excel spreadsheet which records the maximum number of each SPA qualifying

species that has been recorded in each field since 2010. The associated data can be viewed in GIS systems.

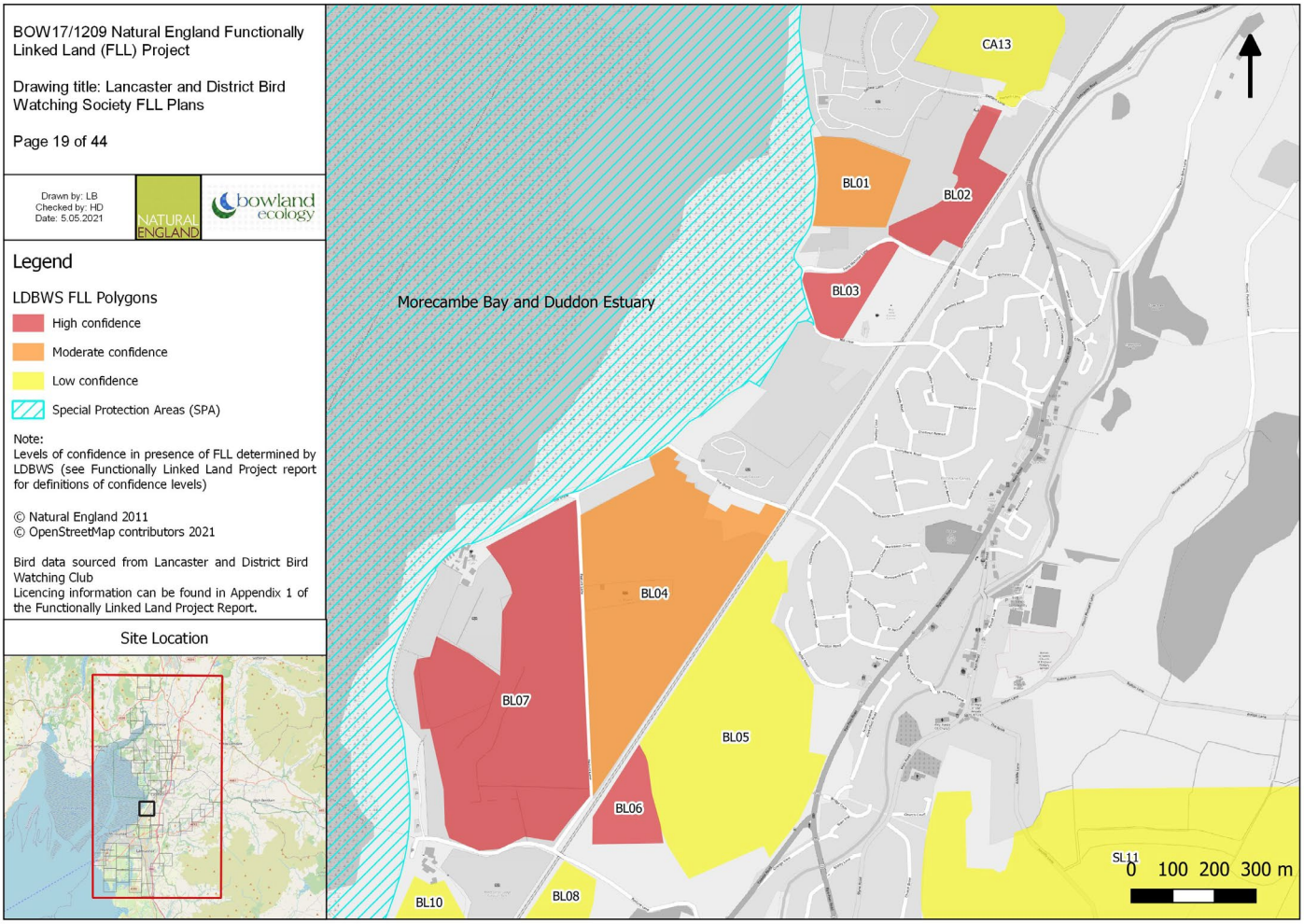

Figure 1 - LDBWS FLL map

a) More information

While the levels of potential have been determined by LDBWS, Bowland Ecology can filter this data to reflect their standard definition of significant and regular, i.e. 0.5% of GB population, this filtered data has been used to produce the Final FLL map.

3.2. Drawing title: WeBS sector FLL (Figure 2)

a) Overview

These maps show the WeBS sectors for the Northwest, categorised as high (red), moderate (orange) and low (yellow) potential FLL, and no data WeBS sectors. The low data WeBS sectors are either: outside of the 20 km study area so not requested (green) or within the study area but data was missing from the BTO database (blue). The data for these maps comes from the BTO WeBS monthly core counts since 2010.

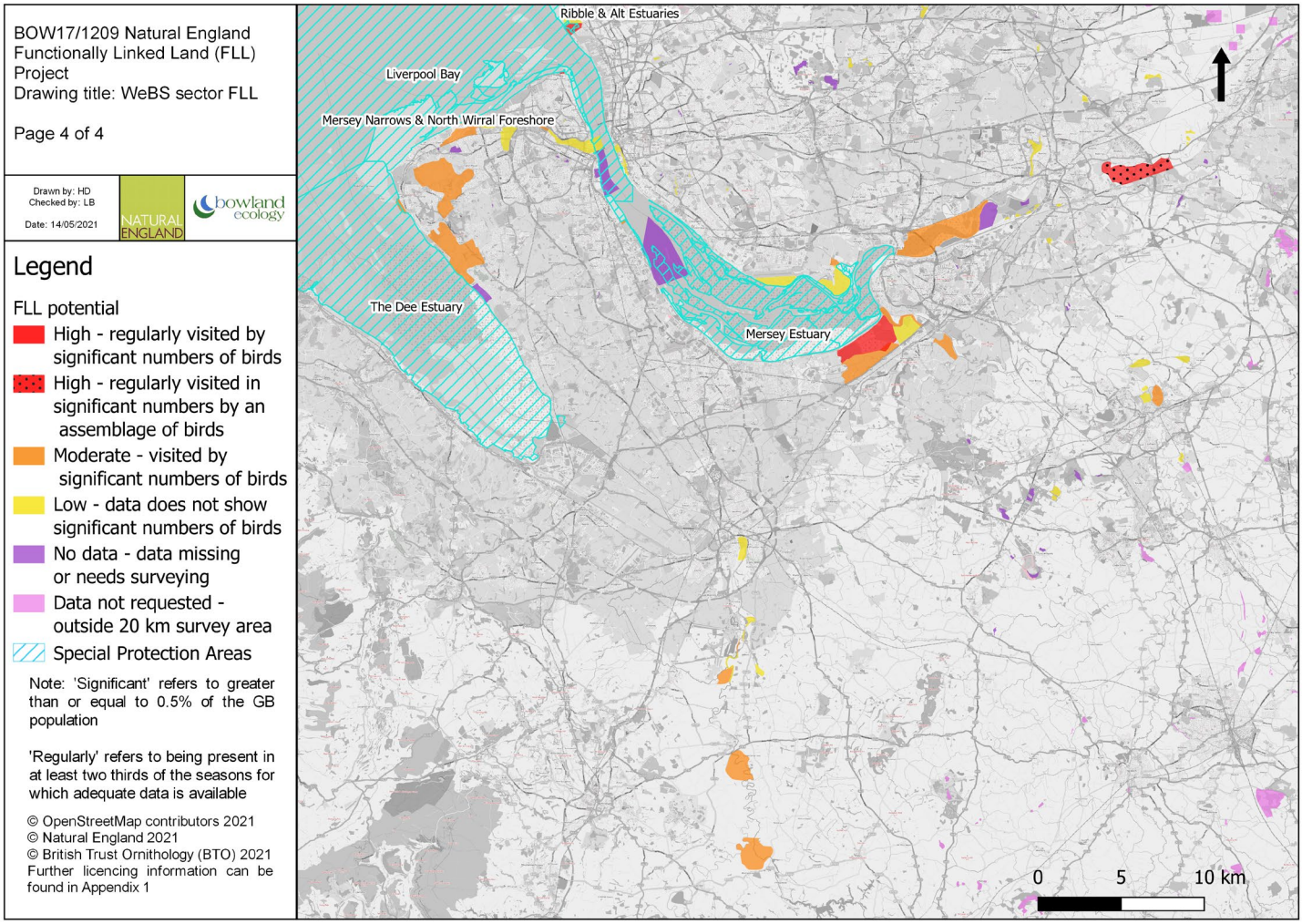

Figure 2 - WeBS sector FLL map example

a) More information

The WeBS sector monthly core count data was filtered to show only SPA qualifying species. The number of times each sector showed a count that met the 0.5% GB threshold was then calculated.

- The red sectors show areas that are regularly visited by significant numbers of species and have therefore been given a label of high FLL potential. This means that these sectors have been visited by SPA qualifying waterbirds in numbers of at least 0.5% of the GB population, in 7 or more years since 2010.
- Orange sectors have significant counts associated with them, however the data suggests

they haven't been visited as regularly as the high potential areas. This means that these sectors have been visited by at least 0.5% of the GB population of SPA qualifying species, but have been visited in less than 7 years since 2010.

- The yellow sectors show low potential for FLL, this means the data suggests there are no significant counts meeting the 0.5% GB threshold since 2010.
- Finally, the blue sectors show 'no data' areas, for which the counts could not be accessed so no comment on FLL potential could be made. The no data polygons also cover areas outside of 20km from the SPA (green sectors), which was the original cut off point for requesting WeBS data due to limited time.

These maps show the WeBS sectors labelled as varying degrees of potential FLL, with a solid evidence base to support this label. They are also useful to identify which WeBS sectors are well counted, and which are not.

3.3. Drawing title: BirdTrack Data FLL Tetrads (Figure 3)

a) Overview

This map shows the total number of significant counts within each tetrad from the BTO BirdTrack data set, meeting the 0.5% GB population threshold shown at tetrad level (2 x 2 km squares). Darker colours represent greater numbers of significant counts recorded since 2010. The data is from the BTO BirdTrack data set.

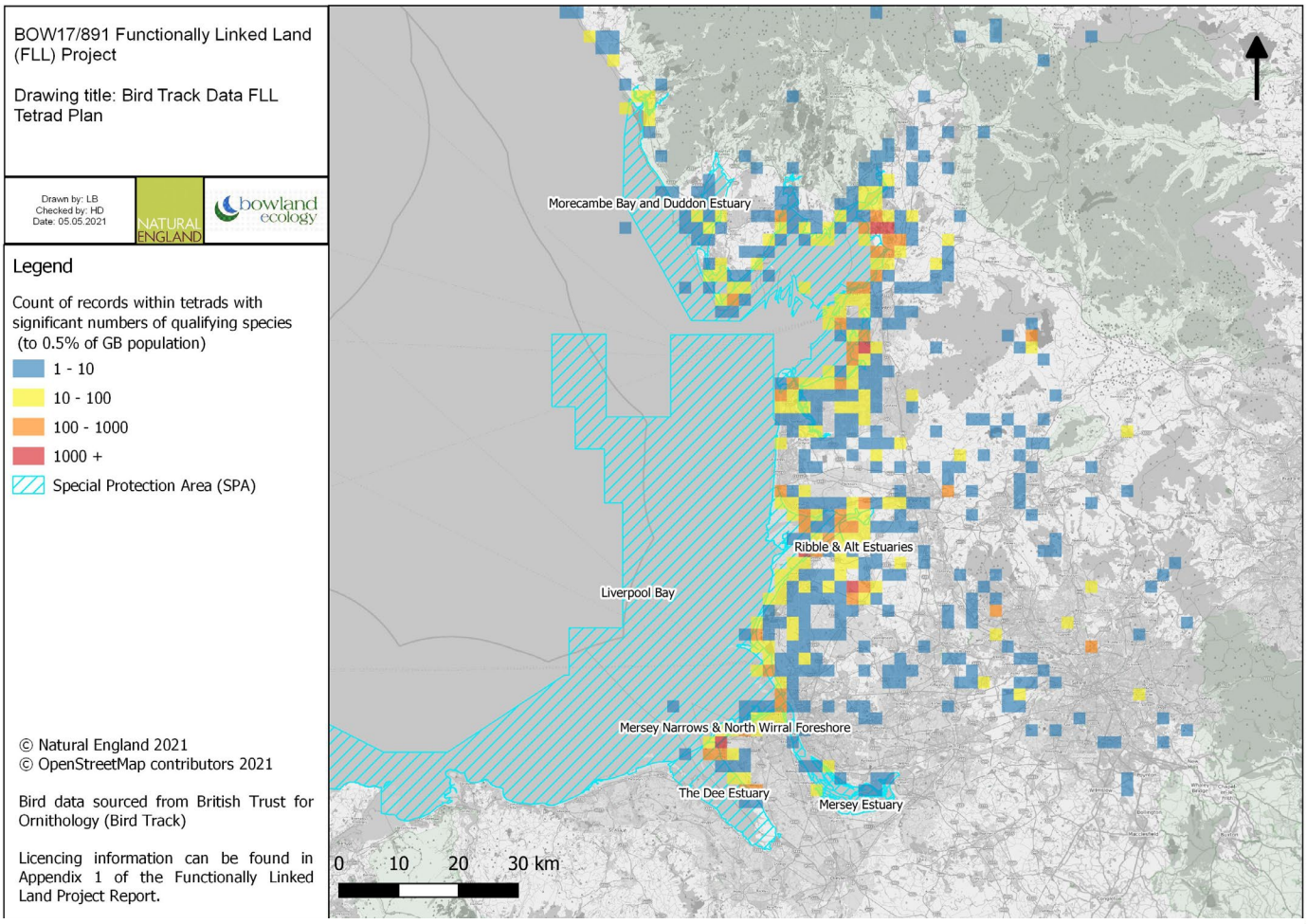

Figure 3 - Bird Track Data FLL

b) More information

Significant bird counts at the 0.5% significance level were extracted for all the SPA qualifying species, and plotted on a map. The number of points within each tetrad has then been counted, with the number of significant counts displayed as a graduated colour scheme shown in the legend. The BirdTrack data has poor spatial resolution and thus has been portrayed at tetrad level (2x2km squares).

Regularity is not included in these maps, however it can be assumed that darker tetrads are likely to be visited regularly by at least one species or an assemblage of birds.

3.4. Drawing title: Fylde FLL Tetrads (Figure 4)

a) Overview

Similar to the BTO BirdTrack data, this map shows the Fylde bird club data, displayed at tetrad level. The data has also been filtered to only show SPA qualifying species, with the total number of counts meeting the 0.5% GB population threshold shown for each tetrad.

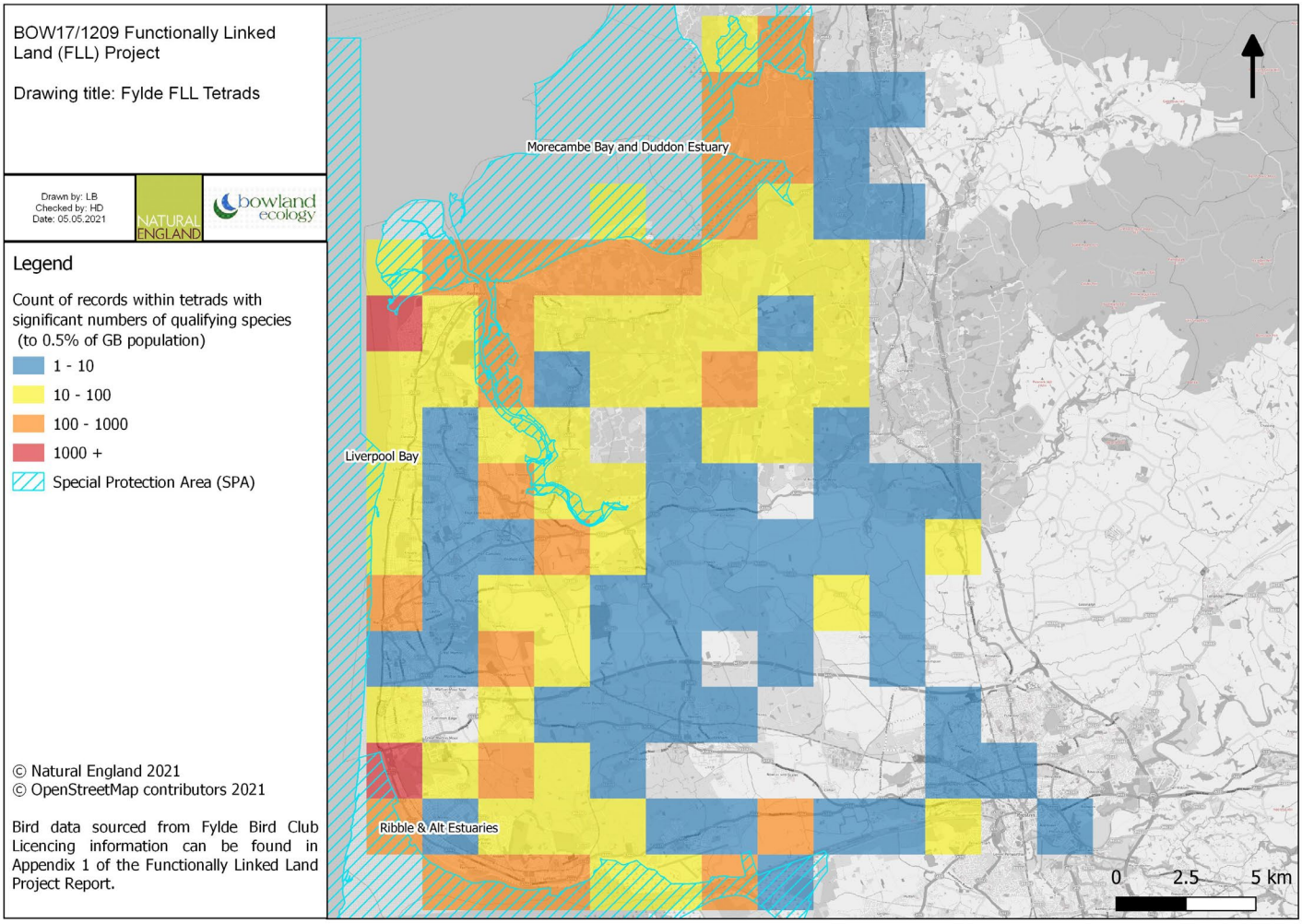

Figure 4 - Flyde Bird Club FLL map

3.5. Drawing title: County Bird Recorder Data (Figure 5)

a) Overview

This map shows the County Bird Recorder Data, displayed at tetrad level. The data has been filtered to only show SPA qualifying species and counts with spatially data accurate to tetrad level, with the total number of counts meeting the 0.5% GB population threshold shown for each tetrad.

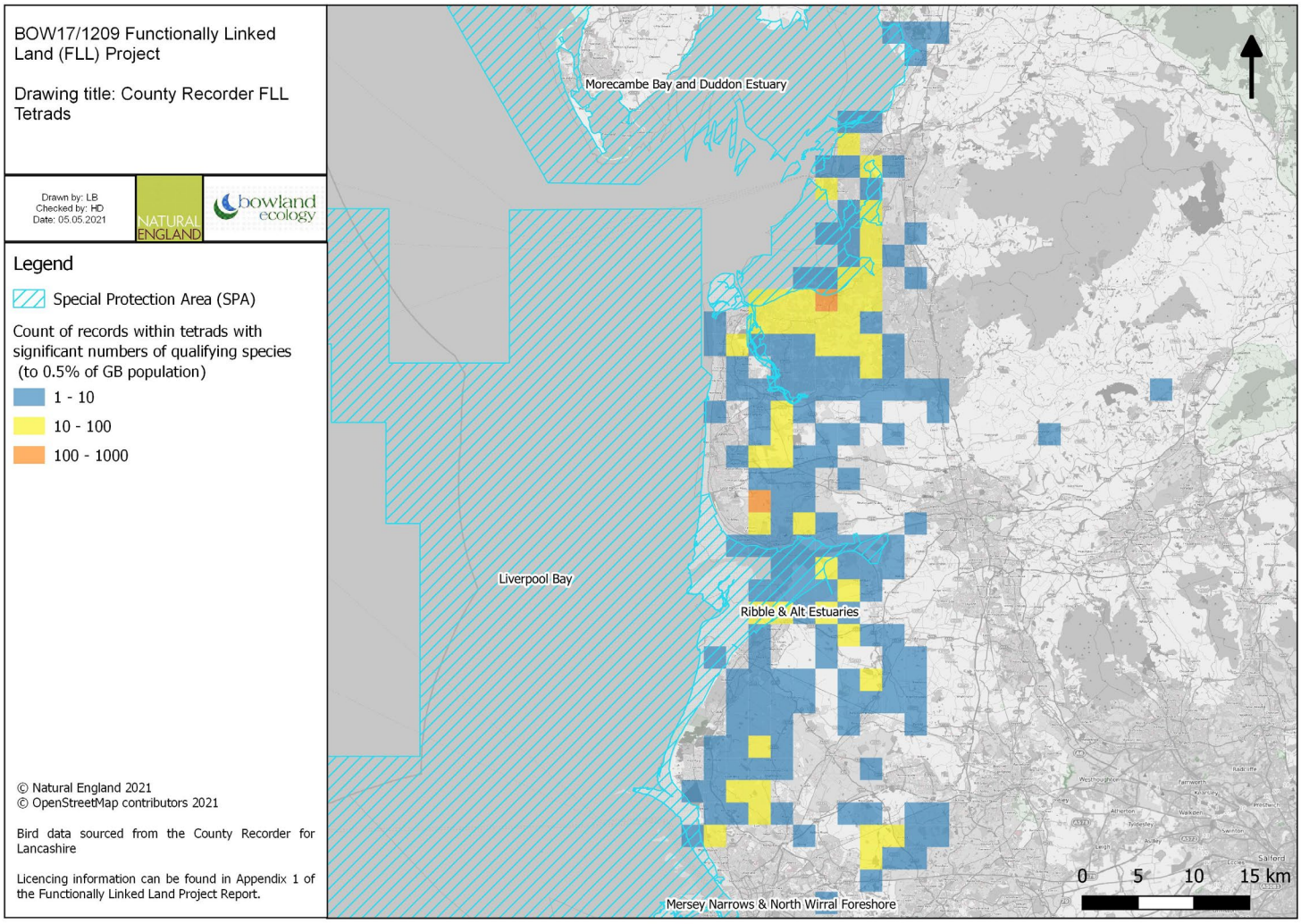

Figure 5 - County bird recorder FLL map

3.6. Drawing title: Dee Estuary maps (Figure 6)

a) Overview

This map shows land around the Dee Estuary, identified by a local expert as being FLL. The polygons were first mapped on paper, before being digitised by Bowland Ecology. These areas have been chosen as they are known to be visited by qualifying species.

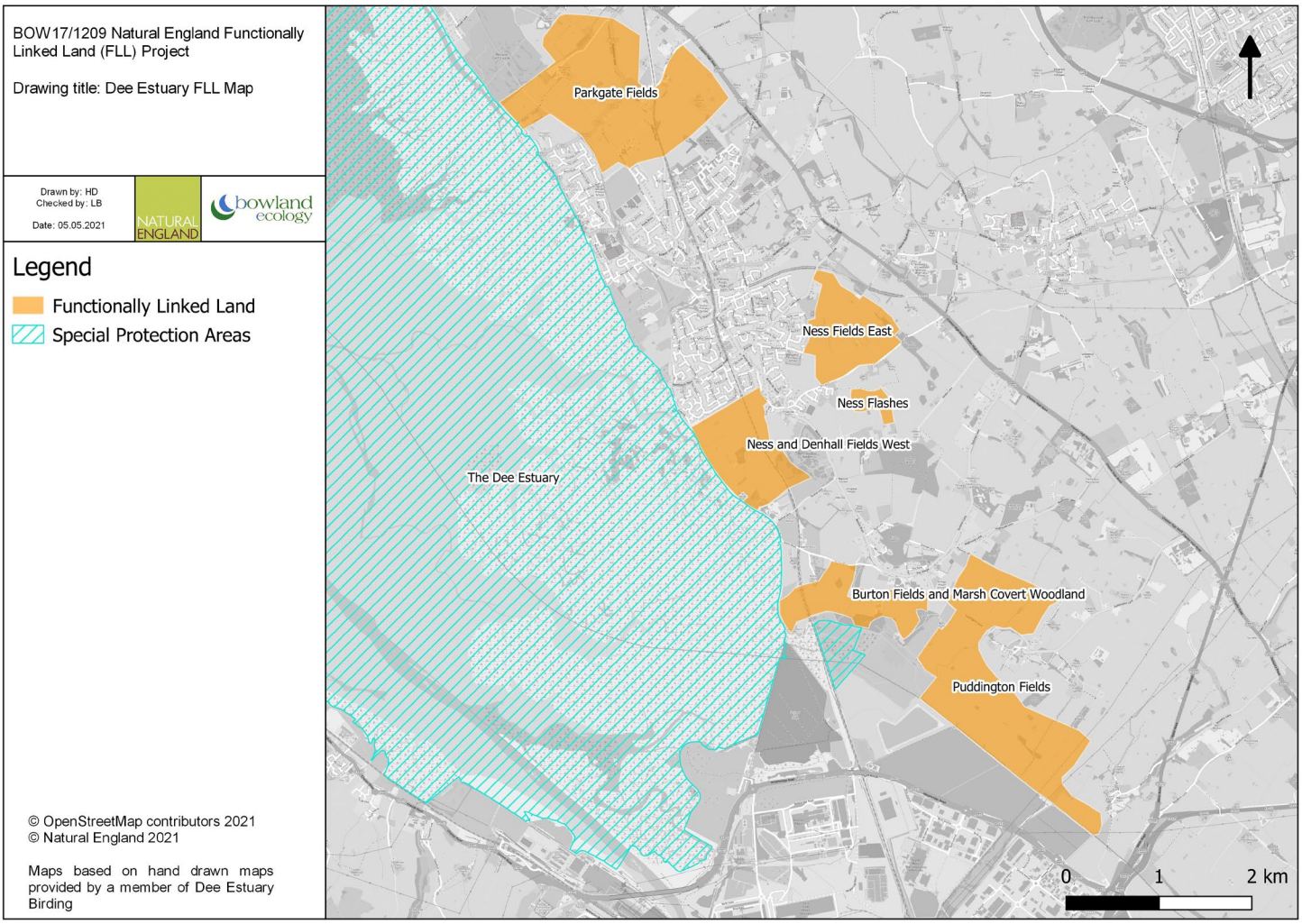

Figure 6 - FLL as mapped by a local expert (Dee Estuary Birding)

The **second** output of this project is the final FLL map, which combines these datasets and highlights areas with associated significant counts.

3.7. Drawing title: Functionally Linked Land (Figure 7)

a) Overview

This final map shows FLL as high, moderate and low confidence, defined by a 'functionality score' of 0-3. This map has been produced using the BTO WeBS sector data, the Fylde Bird Club data, data from the Lancashire county bird recorder, the LDBWS and Dee Estuary polygons containing significant counts according to the 0.5% of GB population threshold and the LCM2015 habitat data.

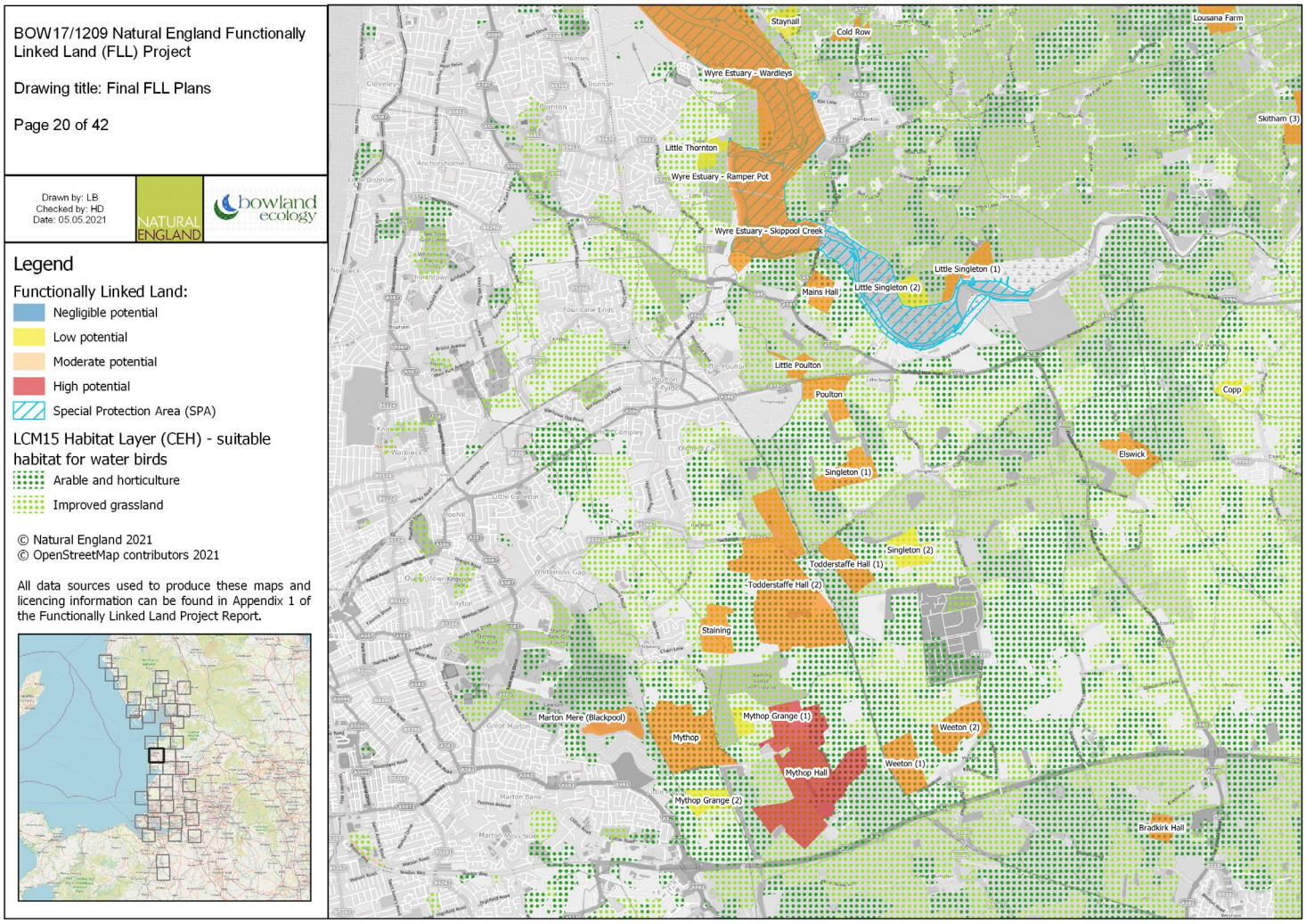

Figure 7 - Functionally Linked Land (datasets combined) example

a) More information

High potential areas, with a score of 3 and shown as red polygons, are areas where significant numbers of SPA qualifying species are regularly visiting, and there is high confidence in both the reliability of the data and the accuracy of the location of the polygon.

Moderate potential areas with a score of 2 and displayed as orange polygons show where significant numbers of water birds are visiting, but where a piece of information is missing that would otherwise yield a high degree of confidence. This could be that there is not enough data to suggest that the site is being visited regularly, or confidence is low in the exact location of this polygon.

Low potential areas with a score of 1, mapped as yellow polygons, show where some aspect of the evidence base suggests that there is a potential for FLL, as there are one or more significant counts recorded in the area. However, some information relating either to regularity of use or location accuracy is missing, and there may be only one significant record located in the polygon.

Negligible potential areas with a score of 0, mapped as blue polygons, show areas with a single significant count and poor location accuracy. More data is needed to identify the FLL potential.

The LCM15 habitat layer from CEH shows arable and horticulture, and improved grassland habitats. This layer can be used to infer functional linkage by users of these maps, for example if a cluster of fields containing significant counts occur within a larger area of the same habitat, the user might infer that those species could also be using the surrounding fields.

This map is most useful when used within a GIS system. Clicking on a polygon brings up the attribute table showing how the functionality score of that polygon has been decided, the species visiting, further recommendations on how to improve confidence in this data, and many other pieces of information.

4. Conclusions

The maps produced by this study can be used to help improve Natural England's understanding of the spatial distribution of qualifying SPA bird populations utilising FLL and as part of the evidence base used when advising on casework applications. This information will help Natural England to provide advice to local planning authorities and developers on the potential impacts of development on FLL. It will also inform strategic mitigation/compensation areas, targeting of biodiversity net gain and habitat creation and enhancement opportunities.

The information does not negate the requirement to undertake a Habitat Regulation Assessment in compliance with the Conservation of Habitats and Species (Amendment) Regulations 2019. In addition to the information included in this report, local authorities and developers will still be required to provide evidence to demonstrate a development proposal would not result in an adverse effect on the SPA site whether it be inside or outside FLL areas, for example, undertake a desk-based study and/or conduct bespoke bird surveys. The limitations set out below need to be considered when using the maps.

5. Limitations

5.1. Definition of FLL

The definition of FLL used in this study was designed to take account of the project aims, distribution of sites and birds, availability of data, and time constraints. Other ways of defining FLL may be more appropriate if circumstances differ. This includes the LDBWS FLL definition, which takes account of survey effort and local knowledge, and identifies more areas of potentially important FLL. However, it does not systematically apply numeric thresholds based on national population levels to indicate if areas of land are functionally linked to SPAs at a regional scale and is more subjective as it relies on expert judgement.

5.2. Species list

This study was based on the qualifying species listed for six SPAs in the North West. This would likely differ if a different suite of SPAs was being considered. To ensure the correct species are included, it is important that SPA citations are carefully consulted. Consideration should be given to the inclusion of additional species/populations that have been recommended through the SPA Review process (https://jncc.gov.uk/our-work/special-protection-areas-overview/#spa-reviews) (JNCC, 2020).

Areas of FLL mapped in the study vary in terms of how many and which species they are likely to be important for. Some areas are based on records of multiple species and multiple counts, whereas some are based only on a single species count, which in some cases is for a species that forms part of the qualifying assemblage rather than an individually listed qualifying species. Further, some species included in this study are only featured in one of the six SPA citations, so may not be appropriate when mapped in regions other than that particular SPA. Users can interrogate the GIS maps to determine which species underpin each area of FLL.

5.3. Regularity

Regularity of use is strongly influenced by the size of sites that have been recorded. Large WeBS sectors are more likely to have records of birds visiting for more than 7 years, compared to individual fields, as they provide a larger area of suitable habitat. Combining smaller adjacent polygons helps address this, however where there are gaps between polygons it is uncertain how best to map the larger area without making assumptions. Clusters of significant fields that are regularly visited would show up on the final maps if these were combined into a single larger polygon, but this might include areas of FLL that are of low importance, which the final maps do not show.

Further, the definition of regularity is one of two definitions proposed by Stroud and others (2001), so in the future it is recommended that both definitions are used together to provide a more comprehensive understanding of regularity.

5.4. Limitations of data

The maps of FLL produced in the study are dependent on the availability and completeness of the underpinning bird records. It is known that recording has not been systematic and survey effort has varied significantly from area to area, with many areas under-recorded. It is important that the maps produced should be seen as indicative rather than comprehensive; there are undoubtedly others important areas of FLL for birds that are not shown. For example, much of the arable land south of Chester is critical feeding habitat for Pink-footed Geese, which are regularly spotted flying away from the Dee SPA in this direction and seen feeding on the arable land here (in discussion with Neil Friswell). It is important to emphasise that gaps in the maps do not mean a lack of birds, but rather, a lack of data, and gaps should be viewed as areas where survey effort should be focussed. Further, some of the bird counts used in the reports may be overflying records, and while an effort has been made to remove these during data analysis, in some cases they are not identified as overflying and therefore may still be included in the data.

Land use change means that FLL is constantly changing as well. Different crops are planted each year, dog walking, recreation or other activities may disturb birds, and habitats may have changed since the 2015 land cover map used in this study. Displaying FLL as a static habitat could therefore

be misleading. The maps can be updated when new data becomes available, supplemented by knowledge provided by local bird experts.

The different data sets used within this study have differing levels of survey effort. For example, some, such as the WeBS data, are regularly and systematically surveyed, while others are more opportunistic, such as the BirdTrack counts. Variation exists within data sets as well, with some WeBS sectors not being visited for some years. This was not accounted for in the map of FLL produced but should be taken into consideration.

Many of the WeBS sectors cover a large area, meaning smaller scale sites within WeBS sectors cannot be interrogated separately. Breaking these WeBS sectors down into smaller areas could be useful, particularly those where only part of the sector falls within an SPA. In these cases, it is impossible to know whether the significant counts are only occurring within the SPA itself, or whether there are FLL areas adjacent to the SPA that potentially could be included within the SPA boundary.

6. Recommendations for future study

While lots of water bird data exists, only a small percentage of records could be used for this study, due to a lack of accurate spatial data. Many records only identify the tetrad they were counted in, and in order to map FLL at field level, at least a 6-figure grid reference is required. It is recommended that bird clubs, WeBS counts and BirdTrack place an emphasis on recording accurate grid references with bird count data in the future.

The LDBWS maps are the most useful maps as they comprehensively cover the Lancaster area. Detailed FLL maps require local knowledge of an area, and so another recommendation is to provide funding for other bird clubs to repeat LDBWS's approach and map the areas visited by their members, along with a confidence rating of potential for FLL.

This study only focuses on the presence of data, however there are lots of aspects of FLL that should be investigated. In discussion with Kane Brides (WWT), the importance of bird tagging was emphasised as the best way to understand bird behaviour and patterns. Tagging different species and seeing how they use different habitats inland would aid understanding of functional linkage. Further, this study looked only at non-breeding bird data, therefore future study could incorporate supporting habitats for breeding waders and seabirds.

Data from local records centres was not included due to potential overlap and time constraints, however, these could be a good resource to include if the data has good grid references associated and can be checked for repeated records. Additional data sets such as the cropped habitat data (UKCEH Land Cover® *plus*: Crop) could be used to get an insight into how crop type can affect different bird species presence and provide detailed information on the supporting habitat type.

Finally, there is potential to map habitat creation and enhancement opportunities where the maps show high bird usage and/or suitable habitat.

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Royal Society for the Protection of Birds (RSPB) The RSPB Wildlife Charity: Nature Reserves & Wildlife Conservation

Joint Nature Conservation Committee (JNCC) JNCC - Adviser to Government on Nature Conservation, in association with The Wildfowl & Wetlands Trust (WWT) WWT (Wildfowl & Wetlands Trust) | WWT, with fieldwork conducted by volunteers.

BirdTrack Data were provided by the British Trust for Ornithology (BTO). BirdTrack | BTO - British Trust for Ornithology BirdTrack is organised by the BTO for the BTO, RSPB, BirdWatch Ireland, SOC and WOS.

Data and maps were contributed by the Lancaster and District Birdwatching Society.

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Appendix S4: SANG Management plan produced by Tyler Grange

SANG Management Plan

Tyler Grange

SANG Site, Barnston
30th March 2023

TG Report No. 15466_R02a_JD_CW

Report No:	Date	Revision	Author	Peer Review	Approved
15466_R02a	30th March 2023	A	Joseph Dance BSc (Hons) MCIEEM	Amy Sherwin MBiol QCIEEM	Duncan Murray BSc (Hons) MSc MIEMA MCIEEM CEnv

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Appendix 1: Original SANG Masterplan
Appendix 2: Revised SANG Masterplan

Summary

S.1. This Management Plan has been prepared by Tyler Grange Group Ltd. (TG) on behalf of Leverhulme Estate. It provides habitat management objectives and broad prescriptions to ensure appropriate management of a parcel of land proposed to act as a Suitable Alternative Natural Greenspace (SANG), which is subject to a full planning application within Wirral Borough Council (WBC) – application reference APP/22/01502.

S.2. It is located off Barnston Road in The Wirral (OS Grid Reference SJ 27740 83292) and is hereinafter referred to as the 'site'. It is intended that this document will inform a more detailed habitat management plan and monitoring/maintenance schedule for the site, to be secured via planning condition.

S.3. The purpose of this document is to demonstrate how the habitat intervention measures proposed as part of the original application submission will achieve the following:

- Deliver an overall uplift in biodiversity value in accordance with the Defra metric;
- Ensure continued use of the site by qualifying species of the European sites noted within the Zone of Influence;
- Enable the site to remain within agricultural use; and
- Allow dog walkers to access open 'off-lead' areas.

S.4. It does not constitute a fully detailed management plan as this will be the subject of a planning condition. Any subsequent detailed management plan will need to fully detail prescriptions for initial ground preparation/habitat creation, yearly management procedures and monitoring/remedial measures.

Section 1: Introduction

1.1. This Management Plan has been prepared by Tyler Grange Group Ltd. (TG) on behalf of Leverhulme Estate. It provides habitat management objectives and broad prescriptions to ensure appropriate management of a parcel of land proposed to act as a Suitable Alternative Natural Greenspace (SANG), which is subject to a full planning application within Wirral Borough Council (WBC) – application reference APP/22/01502. It is located off Barnston Road in The Wirral (OS Grid Reference SJ 27740 83292) and is hereinafter referred to as the 'site'.

1.2. **Figure 1** below outlines the extent of the site.

Figure 1 - SANG site

Background

1.3. The SANG has been proposed by The Leverhulme Estate as a way of partly mitigating for anticipated recreational pressure brought about by residential planning applications sought by the Estate, which are identified as:

- **Site A) Land east of Glenwood Drive, Irby.**
  LPA Ref: OUT/22/00946

- **Site B) Land east of Dale View Close, north of Gills Lane, Pensby.**
  LPA Ref: OUT/22/00941

- **Site C) Land east of Thorncroft Drive, north of Gills Lane, Pensby.**
  LPA Ref: OUT/22/00942

- **Site D) Land west of Barnston Road, north of Gills Lane, Pensby.**
  LPA Ref: OUT/22/00944

- **Site E) Land at Milner Road and Barnston Road, Heswall**
  LPA Ref: OUT/22/00943

- **Site F) Land west of Raby Hall, Raby Hall Road, Raby Mere.**
  LPA Ref: OUT/22/00945

- **Site G) Land east of Raby Hall, Raby Hall Road, Raby Mere.**
  LPA Ref: OUT/22/00947

1.4. The SANG application is accompanied by a 'Design and Access Statement'[1], which fully details the background to the SANG and should be read in conjunction with this report. It is also accompanied by an ecological assessment produced by The Environment Bank[2], which should also be read in conjunction with this report. The outcomes of the Biodiversity Net Gain (BNG) assessment undertaken by The Environment Bank are summarised in **Section 2** of this report.

1.5. Following on from the submission of the DAS and ecological assessment, TG have also undertaken a suite of non-breeding bird surveys to assess the usage of the site by qualifying bird species of the European sites within the Zone of Influence (ZoI), and ground-level preliminary roost assessment surveys of trees proposed for removal. This report should be read in conjunction with the non-breeding bird survey report produced by Tyler Grange (15466_R01).

1.6. The outcomes of these assessments are summarised in **Section 2** of this report and have been used to inform the scope and approach of this management plan.

[1] Suitable Alternative Natural Greenspace, Barnston Road, Barnston Road – The Leverhulme Estate, August 2022
[2] EB03130.19 SANG Updated – Land at Barnston Road, Barnston – Issue 160822

Purpose and Scope

1.7. The purpose of this report is to set out the objectives of the SANG and the broad management prescriptions required to achieve these objectives.

1.8. It is not intended to act as a detailed habitat management plan for the duration of the SANG but more as a framework for a subsequent more detailed management plan to adhere to.

1.9. The prescriptions outlined in this plan, and any further detailed management plans, will be secured *in perpetuity*, which is defined as a minimum of 80 years.

Section 2: Aims and Objectives

Site Context and Baseline

2.1. The site is an open expanse of agricultural land comprising species-poor grassland interspersed with field ponds and delineated by field hedgerows and ditches. Full detail regarding the habitat composition of the site is provided in the accompanying ecological assessment produced by The Environment Bank.

2.2. The site is considered to be of negligible importance to the majority of protected/notable wildlife species but has been screened in for the need for non-breeding bird surveys. This is due to the fact that the habitats present have the potential to support some of the qualifying bird species of the European sites in the ZoI around the site. TG have undertaken such surveys between 2022 and 2023 and confirmed that the site supports sufficient numbers of curlew *Nunemius arquata* to be considered 'functionally linked' to both the Dee and Mersey Estuary Special Protection Area (SPA) and Ramsar sites for this species only. Full details of the survey results are presented in report 15466_R01 produced by Tyler Grange.

2.3. Ground-level preliminary roost assessments of trees proposed for removal have also been undertaken by TG. In summary, several trees have been identified as providing moderate bat roost potential. These trees are boundary trees which were only recommended for removal due to their status as 'Category U' trees (i.e. unsuitable for retention given poor health), rather than to directly facilitate the creation of the SANG. To avoid impacts on roosting bats, these trees are now retained within the development and this is reflected in a revised Arboricultural Impact Assessment and Tree Protection and Removal Plan produced by Tyler Grange.

2.4. A BNG assessment has also been undertaken by The Environment Bank, which confirms that the site has a baseline value of 47.02 habitat units. The habitat interventions proposed within the SANG broadly comprise:

- Woodland creation;
- Grassland enhancements;
- Pond enhancements; and
- Hedgerow enhancements

2.5. With these interventions (which are detailed further in this report), the proposals would result in an uplift of 42.18 biodiversity units (BU - equating to 89.29% net gain).

2.6. The existing management of the site centres around a 'beef' unit, with the grass bailed for feed and sold also to equestrian users. It is understood that cattle are present between mid-Spring through to autumn/winter and are housed over-winter. The existing cutting regime is a first cut in mid-spring and then regular cuts throughout the year depending on weather.

Some fields are left uncut entirely and left for hay. No spraying is undertaken currently apart from targeted spot treatment[3].

Objectives

1. To provide a measurable increase in biodiversity value as a result of the proposals, in accordance with the interventions proposed and the BNG calculations undertaken by The Environment Bank;

2. To ensure the SANG provides long-term enhancements for curlew and fulfils the Conservation Objectives of the Mersey Estuary and Dee Estuary SPA/Ramsar;

3. To ensure the SANG remains within agricultural use; and

4. To provide specific access for 'off-lead' dogs.

Management Constraints

2.7. The site is assessed as 'functionally linked' to both the Mersey Estuary and Dee Estuary SPA/Ramsar sites in relation to curlew only. Full details are provided in the accompanying non-breeding bird survey report produced by TG. For this reason, the primary constraint regarding the management and operation of the SANG is ensuring that the Conservation Objectives of the Estuaries are met. These ensure that the integrity of the European sites are maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features, and;
- The distribution of the qualifying features within the site.

2.8. Specific habitat interventions are proposed within the SANG to provide enhancements for curlew *in perpetuity* in line with the Conservation Objectives, and this requires the provision of a specific 3.27ha parcel of the SANG managed specifically for curlew. This area is detailed in the following sections of this report, and detail is given of how this area will operate as a publicly accessible SANG whilst still providing enhancements for curlew.

2.9. Management cannot be undertaken that would result in an offence under current and future protective legislation. As such, the proposed management would ensure conformity with all relevant legislation, including the Wildlife and Countryside Act (WCA) 1981 and the Natural Environment and Rural Communities (NERC) Act 2006.

[3] Personal communication with representative from the estate and tenant farmer

2.10. This would involve the protection of active birds' nests, should they become present on site.

Section 3: Management Prescriptions

Context

Objective 1 – To provide a measurable increase in Biodiversity value (reported via Defra metric)

3.1. The existing ecological assessment report for the site produced by The Environment Bank concludes a measurable increase in biodiversity value of the site by 42.18 BU, which equates to an 89.29% net gain. Full yearly prescriptions for detailed management are not provided in this plan, but the following section sets out the broad management prescriptions and initial interventions required per habitat type:

Woodland creation

3.2. Woodland creation within the site comprises 1.56ha of '*moderate*' condition broad-leaved woodland planting. Whilst the species mix of the woodland planting is not available yet, nor is it within the scope of the current application, a minimum of three native species will be required.

3.3. Each tree will be protected with biodegradable rabbit/deer guards and planted late Autumn or Spring to avoid human activity which may disturb curlew (see Objective 2). Where necessary, a watering regime will also be considered.

Grassland enhancements

3.4. The most significant uplift in biodiversity value across the site results from the proposed grassland enhancements. It is proposed that all of the existing species-poor grassland is enhanced to a '*poor*' condition neutral grassland. Wildflower margins are proposed along each footpath which will fall under a more relaxed cutting regime and detailed in a fully detailed LEMP, but would comprise the same species mix as the rest of the grassland fields across the site.

3.5. For best results it is considered necessary for the ground to be prepared prior to sowing a new seed mix. This initial ground preparation will comprise a topsoil inversion or deep plough to release the less nutrient rich sub-soil. This will be undertaken in early spring i.e. March/early April to avoid disturbance to curlew which utilise the site over-winter. Significant agricultural activity over-winter presents the risk of disturbing curlew and must be avoided. The data obtained from the non-breeding bird surveys completed would support the fact that by March, curlew numbers within the site and estuary in general are not significant, and numbers generally begin to build again in the estuary[4] from September onwards and peak in December before reducing sharply in March[4].

3.6. Once this is done, the land will be harrowed to a medium tilth in order to provide a suitable substrate for accepting the seed mix. A suggested seed mix is Emorsgate EM1, which is a standard meadow mixture. Once the seed mix has been broadcast at an appropriate density

[4] https://app.bto.org/webs-reporting/numbers.jsp

(i.e. 4gm^2), the land will be rolled to ensure a good seed contact with the soil. For the remainder of the first year following sowing the mix, the land will be monitored and cut as necessary depending on growing rates. It is expected that initially there will be a flush of weeds and other undesirable species (i.e. docks), which should be regularly topped to allow the slower-germinating grasses and forbs chance to develop. Targeted spot-treatment should be utilised where flushes of weeds are localised. Spraying should be avoided.

3.7. The grassland within 10m of each pond will only be cut once every third year to ensure there is an undisturbed, thick sward at all times. This will provide enhancements for pond wildlife and ensure the ponds achieve a higher biodiversity value.

3.8. Once the grassland is established (expected from Year 2/3), the land will fall into traditional hay management, whereby a hay crop will be taken in late summer (i.e. late July after the peak nesting season) and then again in autumn (i.e. late September). It is recommended that agricultural activity is not undertaken any later than September, as this is when curlew are most likely to be present within the site and therefore potentially subject to disturbance. Once the grass has been cut, it will be left to dry and set seed for a week before all arisings being removed. The removal of arisings is important as it will ensure that new grass can develop.

3.9. To ensure that there are no conflicts with dog walkers and agricultural activity, the proposed interpretation boards will provide details on the rationale of the hay management and to advise to keep dogs on leads across the site when agricultural activity is taking place. This will be repeated as temporary signs on gates as well when the agricultural activity is taking place, to further encourage people to keep their dogs on leads in the affected field compartment. It is not expected that the entirety of the site will be subject to agricultural activity at once, but will be a staged approach over the course of a number of days. This will ensure that there will still remain areas available for dog walking off-lead at all times.

3.10. **Table 1** below summarises the condition assessment criteria for neutral grassland and also demonstrates how the grassland and management proposed above complies with each criteria. It must be made clear that the grassland only needs to comply with one of these criteria to achieve the targeted '*poor*' condition.

Criteria	**Compliance**
The appearance and composition of the grassland closely matches characteristics of the specific grassland habitat type. Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and visible throughout the sward.	The land will be sown with an appropriate seed mix (suggested Emorsgate EM1) which, when established should closely match habitat Neutral Grassland identified in the UKHab definitions. **Expected to pass this criteria once established. Remedial action can rectify.**
Sward height is varied (at least 20% <7cm and 20% >7cm.	This will be achieved via ongoing management.

	Expected to pass this criteria and can be remedied via management practices.
Cover of bare ground is between 1% and 5%.	This will be achieved via ongoing management. **Expected to pass this criteria via management.**
Cover of bracken is less than 20% and cover of scrub is less than 5%.	Scrub/bracken presence is not an existing issue across the grassland so is not expected to be an issue. Any future issues will be controlled via management. **Expected to pass this criteria via management.**
Absence of invasive non-native species. Combined cover of species indicative of sub-optimal condition and physical damage accounts for less than 5% of total area.	This will be controlled via the initial topsoil inversion and weed topping, followed by regular spot-treatment where necessary. **Expected to pass this criteria via management and regular weed control, but is not relied upon to achieve 'Poor' condition given likely high nutrient content of soil.**
There are greater than 9 species per metre squared.	If the seed mix establishes successfully, this should be achievable but is not relied on. **Not relied upon to achieve 'Poor' condition**

Table 1 – Compliance with grassland condition criteria

Hedgerow enhancements

3.11. Hedgerow enhancements are proposed across all hedgerows within and along the boundaries of the SANG to enhance them from '*poor*' to '*moderate*' condition. As detailed in The Environment Bank ecological assessment, this will be achieved through underplanting with scrubby species, relaxing the management and introducing tree planting. The latter of these points is particularly relevant to the hedgerow which sits in the centre of the site and separates the parcel of land intended specifically for curlew enhancements (see Objective 2).

3.12. Ongoing management of each hedgerow will then comprise late winter rotational cuts so not all sections are cut at the same time. This will ensure continued undisturbed habitat of value to roosting/foraging birds. The timing of the cut (i.e. mid-late February) to avoid conflicts

with nesting birds from March is proposed to ensure that birds and other small mammals can forage upon the berry-producing hedgerow species, which provide a valuable winter resource. Each section will only be cut as necessary every three years given that all the hedgerows are already established. This will also allow the hedgerows to grow and provide even greater value habitat to wildlife. Excessive cutting will not be undertaken, and informed by monitoring. The hedgerows will be allowed to grow to at least 2m in height.

3.13. New native hedgerows are also proposed, which will be planted over-winter at an appropriate density and saplings protected with rabbit/deer guards. They will remain uncut for the first 5 years, and grass/weeds within will be controlled regularly to allow the saplings to develop.

Pond enhancements

3.14. There are a number of existing ponds across the site, which range from '*poor*' to '*moderate*' condition. It is proposed that each will be enhanced to *'moderate'* and *'good'* condition respectively. The full detail of how this will be achieved will be presented in a fully detailed management plan, as it will be specific to each pond and is beyond the scope of this document. Generally, however, a 'minimalist' approach will be undertaken to ensure that there are not significant works to the pond, which may detract from their attractiveness within the SANG and also value to wildlife. The following interventions and management are considered, but are not an exhaustive list:

- Scrub/tree removal where appropriate to ensure there are open margins;
- Plug planting with marginal plants to improve visual quality of pond and value to wildlife; and
- Ensuring there are areas of 'natural' (i.e. unmanaged) grassland habitat around each pond at a minimum of 10m.

Objective 2 – To ensure the SANG provides enhancements for curlew

3.15. Based on the non-breeding bird surveys completed by TG, the site is considered 'functionally linked' to both the Mersey and Dee Estuaries (SPA/Ramsar). The locations of curlew within the site fluctuated between the surveys, but were generally in the south and west of the site. The accompanying non-breeding bird report produced by TG should be read alongside this plan for full context.

3.16. From these surveys, it is apparent that curlew are not reliant on one field alone. It is evident that the site in general provides an overall foraging resource for curlew. Curlew were generally present as one flock within the site, and the field compartments which they were recorded in are 2.49ha in size on average, and all are contained by tree lines and hedgerows.

3.17. If the SANG were to operate in the absence of any consideration for curlew, the increase in human presence would likely disturb curlew and force a flight response away from the site. For this reason, a single field within the SANG has been chosen to provide long-term enhancements for curlew. The field chosen is a boundary field which extends west beyond

the SANG boundary as part of the same field compartment. It is shown in **Figure 2** below. The size of the field within the SANG proposed is 3.3ha, so is equivalent in size to the fields which curlew have been recorded utilising within the site.

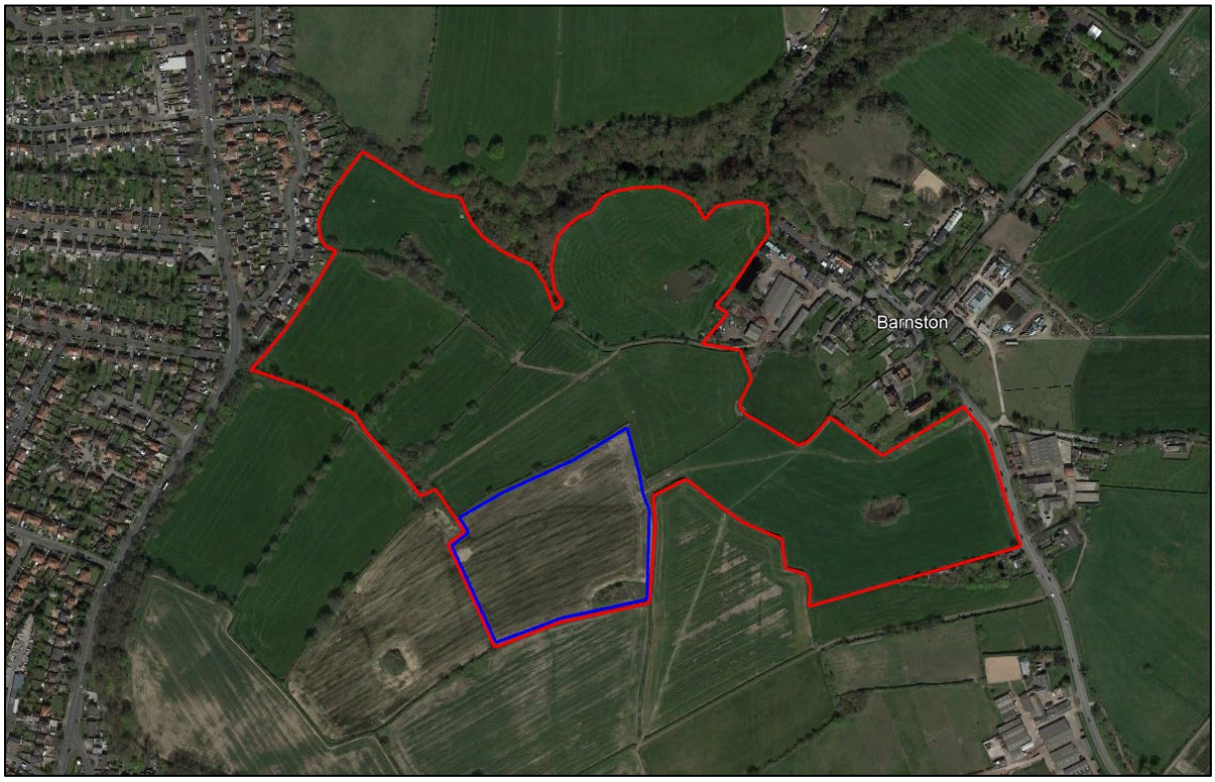

Figure 2 – Field proposed for curlew enhancement (edged blue)

3.18. The initial ground preparation and ongoing management of this field will be the same as the prescriptions proposed for the grassland elsewhere in the site, although in this field the grass must be cut to 150mm in the last season cut in Autumn, as research shows their preference to shorter grass over-winter when foraging[5].

3.19. The most important consideration of the management of this field parcel, however, is conflicts between curlew presence and the proposed footpath which runs along the western and southern boundary of this field – see **Figure 3** overleaf. This conflict will only be prevalent between the months of September and March, however, this is the period in which curlew are present over-winter and on migration around the Wirral peninsula.

3.20. Between the months of September and March, this field compartment will be locked via the gates proposed around the boundaries of this field – see **Figure 3** overleaf. The interpretation boards to be installed around the site will explain the rationale for this field compartment being locked, and signage will be installed on the gates themselves to outline that this field is not accessible between September and March and that the footpath is 'suspended' until March. This signage will be installed prior to the SANG being operational.

3.21. As this will effectively disrupt the circular walk proposed, an alternative footpath is proposed around this field, as shown in **Figure 4** overleaf. This will still ensure that the public has access

[5] https://curlewlife.org/2021/11/what-do-curlew-do-in-the-winter-months/

to an appropriately sized circular walk at all times of the year, whichever route is ultimately taken, thus ensuring that the SANG conforms with Natural England's guidelines on SANG design. The main circular walk which will be available April – August measures 3.25km and in winter when the alternative route is required, this measures 2.36km as a full 'loop', so still complies with SANG guidelines for a minimum of 2.3 – 2.5km. Additional internal paths are included, however, to extend this. The 'loop' follows the perimeter of the site and avoids pinch points and the need for users to 'retrace steps', which is a preference when designing SANGs. Each of these plans are reproduced in **Appendix 1** and **Appendix 2** respectively.

Figure 3 – Previous landscape masterplan

Figure 4 – Amended landscape masterplan showing alternative footpath

3.22. The existing hedgerow which separates this field from the remainder of the SANG provides a suitable visual screen (see **Photograph 1** below), which will ensure that members of the public walking along the other side of this hedgerow will not disturb any curlew present within the field.

Photograph 1 – Hedgerow separating main body of SANG site from fields proposed for curlew mitigation

3.23. This new walk will require minor hedgerow removal to facilitate the path, and a wooden bridge over the ditch present but is not considered to result in a significant impact beyond those already considered as part of the ecological assessment. The removal of this and other hedgerows would need to remain cognisant of the presence of bird nests and undertaken between September and February inclusive.

3.24. Given the exclusion of the public from this field during the most sensitive months, curlew will retain access to adequate habitat which will be managed specifically for curlew benefits *in perpetuity.* The existing use of the site does not permit this. Standard agricultural rotation which is otherwise permissible means that the suitability of the site for curlew is not secured short or long-term. For example, turning the land to sheep grazing or other less suitable cropland could render the site unsuitable for curlew.

3.25. The long-term management to be secured via the adoption of the site as a SANG secures the enhanced curlew habitat *in perpetuity*, which would otherwise be absent.

Objective 3- To retain the land within agricultural use

3.26. As detailed in Section 2 of this report, the existing agricultural use of the site comprises beef cattle and hay production. Whilst the beef cattle grazing would be removed to deliver the SANG, the site is already under a hay crop regime, and this would continue during the SANG's operation. It is evident, therefore, that even though there would be an increase in public use across the site, the productivity of the land in terms of hay crop production would not be diminished.

Objective 4- To provide specific access for 'off-lead' dogs

3.27. With the exception of the area proposed for curlew enhancements over-winter (which would be inaccessible to the public anyway), the entirety of the SANG area would allow dogs off-leads. Interpretation board information would, however, encourage that dogs are kept on leads to minimise impacts on local wildlife.

Section 4: Work Schedules, Roles and Responsibilities

4.1. Management of the created habitats will commence in Year 1 of planting, and will generally comprise the measures detailed in **Table 2.** This is not considered an exhaustive list, however, and further more detailed yearly prescriptions will be required per habitat type.

Habitat Type	**Management Schedule**
Woodland	Trees planted in autumn or spring to avoid conflicts with curlew presence. Supported with stakes and rabbit guards. A watering schedule will be introduced for periods of drought. Until Year 5, each tree will be checked to ensure rabbit guards remain in place and then removed after this point. After Year 5, trees will be left to grow and dead specimens removed during maintenance visits. Once established, the ground flora will be managed to ensure open areas remain and undesirable/invasive species (i.e. rhododendron) will be removed.
Grassland	Once established, all grassland across the site will be cut once in late summer and again in Autumn before the over-wintering curlew period. Arisings will be left to dry and set seed for a week before removal.
Existing hedgerows	Pruned on rotation once over three years.
New hedgerows	Saplings supported by rabbit guards and mulched to prevent weed growth, which will be treated yearly. The plants will not be cut until they have reached the desired height and width, other than removal of dead specimens.
Ponds	Initial scrub removal (where necessary) followed by maintenance to restrict scrub encroachment.

Table 2 – Management Schedule

4.2. It will be the responsibility of The Leverhulme Estate and their contractors to deliver the management requirements of the SANG. The Leverhulme Estate will be responsible for appointing a Suitably Qualified Ecologist (SQE), who will monitor the SANG to ensure the objectives are being delivered.

4.3. The SQE will advise on any remedial measures identified, and it will be the responsibility of The Leverhulme Estate to deliver such measures at the direction of the SQE.

Section 5: Conclusion

5.1. This management plan has set out the objectives of the SANG and the broad management prescriptions required to achieve these objectives. This includes:

- Ensuring there is an overall measurable net gain in biodiversity value via widespread grassland enhancements, woodland/hedge creation and pond/hedgerow enhancements;
- Ensuring that the Conservation Objectives of the Mersey/Dee Estuaries are met by providing a 3.3ha field which will be specifically managed for non-breeding curlew and will be free of public disturbance during the winter months;
- Ensuring that the land remains agriculturally productive. The existing regime comprises beef grazing and hay crop, the latter of which will continue *in perpetuity* with adoption of the SANG; and
- Providing open access for dogs across the SANG, but with information required on interpretation boards to encourage dogs to be kept on leads for wildlife welfare reasons.

5.2. It is expected that with the adoption of the SANG and implementation of a fully detailed yearly management plan (based on the recommendations within this report) that all of the objectives would be met.

5.3. In particular, the site is under no current obligation to consider curlew or the Conservation Objectives of the estuaries. The SANG and the prescriptions outlined in this plan provide an opportunity to provide a parcel of land which will guarantee enhancements for this species which can be secured *in perpetuity*.

Appendix 1: Original SANG Masterplan

Potential future footpath link.

Pedestrian refuge island on Pensby Road

Bike storage located on entry to route. To have 5no Sheffield Stands for 10no bikes.

Information and interpretation boards to be located on the walking route adjacent to the car park. Boards to include route options and distances along with heritage interpretation associated with Barnston Village Conservation Area and Christ Church

Bike storage located on entry to carpark. To have 5no Sheffield Stands for 10no bikes.

Removable/ retractable bollards to secure site out of hours

NW1 NW2 NW3 NW4 NW5 NW6 NW7 NW8

H1 H2 H3 H4 H5 H6

Metres
10 20 30 40 50 60 70 80 90 100
SCALE 1:1250

SANG Site Area - 22.6ha

Existing Trees to be Retained

Propcsed Trees
A variety of trees selected for their form, site suitability. To be plantec within new and existing hedgerows where appropriate. To be determined on site to ensure minimal impact on existing vegetation.
Acer campestre, 12-14cm heavy standard, RB
Betula pendula, 12-14cm heavy standard, RB
Fagus sylvatica, 12-14cm heavy standard, RB
Quercus robur, 12-14cm heavy standard, RB
Sorbus aucuparia, 12-14cm heavy standard, RB

Propcsed Woodland
New woodland groups copses to be planted at 1.5m spacings with native species in the following size and ratio:
Alnus glutinosa, 60-90cm, 10%
Betula pendula, 60-90cm, 15%
Corylus avellana, 60-90cm, 10%
Crataegus monogyna, 60-90cm, 20%
Fagus sylvatica, 60-90cm, 20%
Quercus robur, 60-90cm, 25%
Note: 10% of mix to be 10-12cm selected standard tree.

NB: All instances of proposed woodland within a non grazed field to be protected with Rabbit proof fencing.

Existing Hedgerows
Hedgerows to be routinely managed and to be gapped up where necessary with native species hedgerow mix (see below)

Propcsed Native Species Hedgerows
To be planted as whips within existing hedgerows and along new lines of hedgerows, 5 plants per lnear meter on a double staggered row.To be protected by spiral rabbit guards and supports and stock proof fence where appropriate. Species to include:
Corylus avellana, 60-90cm, BR
Crataegus monogyna, 60-90cm, BR
Ilex aquifolium, 3 Litre, CG
Prunus spinosa, 60-90cm, BR
Ulex eurcpaeus, 60-100cm, BR

NB: All instances of new hedgerow with fields to be grazed to be protected with stock proof fence.

Existing Field Ponds
Selective/partial clearance of existing vegetation as specified by project ecologist.

Existing Agricultural Fields

Propcsed Grassland
Proposed Grassland Margins to be to be managed as long grasses with one or two annual cuts.

Propcsed Car Park
To be constructed using permeable sub base and wearing course to be compacted gravel. Parking bays to be demarcated using reclaimed setts. Trees and hedges to be planted to integrate and screen.

Propcsed Stock Proof Fence
To be post and wire fence with stock proof mesh. with Barbed straining wire for top of posts

Propcsed Field Gates
- Pedestrian gates to be self closing timber pedestrian access gates
- Propcsed single leaf steel field gate.

Propcsed Gates
DDA corrcilant kissing gates to be used on field boundaries. To ensure individual fields remain enclosed and secure.

Propcsed Footpaths
To be DDA compliant. Surface to be compacted gravel/hoggin with timber edges. Litter and dog bins to be placed in strategic points. Benches to be positioned intermittently along path.

Propcsed Footpath Crossing Points
Sections of concrete surfacing to allow the crossing of agricultural vehicles.

Propcsed Footbridges
Timber footbridges with handrails and antislip strips on surface boards.

Existing Public Footpath
Shown in yellow/buff colour to be resurfaced in hoggin to match new paths

Existing Farm Track

PLANTING SCHEDULES

Native Species Tree Planting

SPECIES	SIZE/ SPEC	Total No.
Acer campestre	12-14cm heavy std	12
Betula pendula	12-14cm heavy std	12
Fagus sylvatica	12-14cm heavy std	12
Quercus robur	12-14cm heavy std	12
Sorbus aucuparia	12-14cm heavy std	12

Native Species Woodland Planting

SPECIES	SIZE/ SPEC	NW1 Area 836 m² 0.44no plants/sq m	NW2 Area 6345 m² 0.44no plants/sq m	NW3 Area 276 m² 0.44no plants/sq m	NW4 Area 861 m² 0.44no plants/sq m	NW5 Area 3208 m² 0.44no plants/sq m	NW6 Area 1129 m² 0.44no plants/sq m	NW7 Area 1506 m² 0.44no plants/sq m	NW8 Area 1350 m² 0.44no plants/sq m
Alnus glutinosa - 10%	60 - 90cm br transp	33	252	11	34	127	45	59	53
	10 - 12cm selected stc	4	28	2	4	14	5	7	6
Betula pendula - 10%	60 - 90cm br transp	33	252	11	34	127	45	59	53
	10 - 12cm selected stc	4	28	2	4	14	5	7	6
Corylus avellana - 10%	60 - 90cm br transp	37	280	13	38	141	50	66	59
Crataegus monogyna - 20%	60 - 90cm br transp	74	557	24	76	282	99	133	118
Fagus sylvatica - 10%	60 - 90cm br transp	33	252	11	34	127	45	59	53
	10 - 12cm selected stc	4	28	2	4	14	5	7	6
Prunus spinosa - 15%	60 - 90cm br transp	55	418	18	57	211	74	100	90
Quercus robur - 25%	60 - 90cm br transp	82	627	27	86	318	112	149	135
	10 - 12cm selected stc	9	69	3	9	35	12	17	15

Native Species Hedgerow Planting

SPECIES	SIZE/ SPEC	H1 Length 289m 5no plants/lin m	H2 Length 148m 5no plants/ lin m	H3 Length 50m 5no plants/lin m	H4 Length 111m 5no plants/lin m	H5 Length 155m 5no plants/lin m	H6 Length 177m 5no plants/lin m	H7 Length 4m 5no plants/lin m	H8 Length 28m 5no plants/lin m
Corylus avellana - 15%	60 - 90cm br transp	216	111	38	83	116	133	3	21
Crataegus monogyna - 40%	60 - 90cm br transp	578	296	100	222	309	354	8	56
Ilex aquifolium - 5%	3 Litre CG	73	37	12	28	39	44	1	7
Prunus spinosa - 25%	60 - 90cm br transp	362	185	62	139	194	221	5	35
Ulex europeaus - 15%	60 - 90cm br transp	216	111	38	83	116	133	3	21

NB: For detailed information on Furniture, Gates and Hardworks, see drawing M2738-PA-12-V3 SANG Layout, Detail Location Plan

north

V4= Updated red line boundary and amendments to the key and schedule_ 18/07/22_JT
V5= Added Pensby Road to north and updated red line_ 19/07/22_JT
V6= Additional bike store on Pensby road entrance_21/07/22_JT
V7= Omission of shelter for bike store _ 17/08/22_JT
V9= Amendment to site area_23/08/22_HB
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DWG TITLE.
SANG Layout, Including Landscape & Footpath Proposals

PROJECT TITLE.
SANGS

DRAWN BY:
JT

CHECKED BY:
NF

DWG NO.
M2738-PA-11-V9

CLIENT.
Leverhulme

DATE.
04.2022

SCALE.
1:1250@A1

WORK STAGE.
Planning

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BARNES WALKER

Appendix 2: Revised SANG Masterplan

SANG Site Area - 22.6ha

Existing Trees to be Retained

Propcsed Trees
A variety of trees selected for their form, site suitability. To be plantec within new and existing hedgerows where appcrcriate. To be determined on site to ensure minimal impact on existing vegetation.
Acer camoestre, 12/-14cm heavy standarc, RB
Betula pendula, 12-14cm heavy standard, RB
Fagus sylvatica, 12-14cm heavy standard, RB
Quercus robur, 12-14cm heavy standard, RB
Sorbus aucuparia, 12-14cm heavy standard, RB

Propcsed Woodland
New woodlanc groups copsies to be planted at 1.5m spacings with native species in the following size and ratio:
Alnus glutinosa, 60-90cm, 10%
Betula pendula, 60-90cm, 15%
Corylus avellana, 60-90cm, 10%
Crataegus monogyna, 60-90cm, 20%
Fagus sylvatica, 60-90cm, 20%
Quercus robur, 60-90cm, 25%
Note: 10% of mix to be 10-12cm selected standard tree.

NB: All instances of proposed woodland within a non grazed field to be protected with Rabbit proof fencing.

Existing Hedgerows
Hedgerows to be routinsly managed and to be gapped up where necessary with native species hedgerow mix (see below).

Propcsed Native Species Hedgerows
To be planted as whips within existing hedgerows and along new lines of hedgerows. 5 plants per lnear meter on a double staggered row.To be protected by spiral rabbit guards and supports and stock proof fence where appropriate. Species to include:
Corylus avellana, 60-90cm, BR
Crataegus monogyna, 60-90cm, BR
Ilex aquifolium, 3 Litre, CG
Prunus spinosa, 60-90cm, BR
Ulex eurcpaeus, 60-90cm, BR

NB: All instances of new hedgerow with fields to be grazed to be protected with stock proof fence.

Existing Field Ponds
Selected partial clearance of existing vegetation as specified by project ecologist.

Existing Agricultural Fields
Existing fields to be enhanced to create native meadow

Propcsed Grassland
Propcsed Grassland Margins to be to be managed as long grasses with one or two annual cuts.

Propcsed Car Park
To be constructed using permeable sub base and wearing course to be compacted gravel. Parking bays to be demarcated using reclaimed setts. Trees and hedges to be planted to integrate and screen.

Propcsed Stock Proof Fence
To be post and wire fence with stock proof mesh. with Barbed straining wire to top of posts

Propcsed Field Gates
- Pedestrian gates to be self closing timber pedestrian access gates
- Proposed single leaf steel field gate.

Propcsed Gates
DDA corrcilant kissing gates to be used on field boundaries. To ensure individual fields remain enclosed and secure.

Propcsed Footpaths
To be DDA compliant. Surface to be compacted gravel/hoggin with timber edges. Litter and dog bins to be placed in strategic points. Benches to be positioned intermittently along path.

Propcsed Footpath Crossing Points
Sections of concrete surfacing to allow the crossing of agricultural vehicles.

Propcsed Footbridges
Timber footbridges with handrails and anti-slip strips on surface boards.

Existing Public Footpath
Shown in yellow/buff colour to be resurfaced in hoggin to match new paths

Existing Farm Track

north

PLANTING SCHEDULES

Native Species Tree Planting

SPECIES	SIZE/ SPEC	Total No.
Acer campestre	12-14cm heavy std	12
Betula pendula	12-14cm heavy std	12
Fagus sylvatica	12-14cm heavy std	12
Quercus robur	12-14cm heavy std	12
Sorbus aucuparia	12-14cm heavy std	12

Native Species Woodland Planting

SPECIES	SIZE/ SPEC	NW1 Area 836 m² 0.44no plants/sq m	NW2 Area 6345 m² 0.44no plants/sq m	NW3 Area 276 m² 0.44no plants/sq m	NW4 Area 861 m² 0.44no plants/sq m	NW5 Area 3208 m² 0.44no plants/sq m	NW6 Area 1129 m² 0.44no plants/sq m	NW7 Area 1506 m² 0.44no plants/sq m	NW8 Area 1350 m² 0.44no plants/sq m
Alnus glutinosa - 10%	60 - 90cm br transp	33	252	11	34	127	45	59	53
	10 - 12cm selected std	4	28	2	4	14	5	7	6
Betula pendula - 10%	60 - 90cm br transp	33	252	11	34	127	45	59	53
	10 - 12cm selected std	4	28	2	4	14	5	7	6
Corylus avellana - 10%	60 - 90cm br transp	37	280	13	38	141	50	66	59
Crataegus monogyna - 20%	60 - 90cm br transp	74	557	24	76	282	99	133	118
Fagus sylvatica - 10%	60 - 90cm br transp	33	252	11	34	127	45	59	53
	10 - 12cm selected std	4	28	2	4	14	5	7	6
Prunus spinosa - 15%	60 - 90cm br transp	55	418	18	57	211	74	100	90
Quercus robur - 25%	60 - 90cm br transp	82	627	27	86	318	112	149	135
	10 - 12cm selected std	9	69	3	9	35	12	17	15

Native Species Hedgerow Planting

SPECIES	SIZE/ SPEC	H1 Length 289m 5no plants/lin m	H2 Length 148m 5no plants/lin m	H3 Length 50m 5no plants/lin m	H4 Length 111m 5no plants/lin m	H5 Length 155m 5no plants/lin m	H6 Length 177m 5no plants/lin m	H7 Length 4m 5no plants/lin m	H8 Length 28m 5no plants/lin m
Corylus avellana - 15%	60 - 90cm br transp	216	111	38	83	116	133	3	21
Crataegus monogyna - 40%	60 - 90cm br transp	578	296	100	222	309	354	8	56
Ilex aquifolium - 5%	3 Litre CG	73	37	12	28	39	44	1	7
Prunus spinosa - 25%	60 - 90cm br transp	362	185	62	139	194	221	5	35
Ulex europeaus - 15%	60 - 90cm br transp	216	111	38	83	116	133	3	21

Metres
10 20 30 40 50 60 70 80 90 100
SCALE 1:1250

NB: For detailed information on Furniture, Gates and Hardworks, see drawing M2738-PA-12-V5 SANG Layout, Detail Location Plan

V8= Notation revision _22/08/22_JT
V9= Amendment to site area _23/09/22_HB
V10= Seasonal diversion added _13/02/23_HB
V11= Drawing date amended _13/02/23_HB
V12= Key amended _15/02/23_HB

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DWG TITLE. SANG Layout, Including Landscape & Footpath Proposals
PROJECT TITLE. SANGS
DRAWN BY: JT
CHECKED BY: NF
DWG NO. M2738-PA-11-V12
CLIENT. Leverhulme
DATE. 03.2023
SCALE. 1:1250@A1
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Appendix S5: Arboricultural Impact Assessment produced by Tyler Grange

Arboricultural Impact Assessment

Leverhulme Estate SANG

29th March 2023

TG Report No. 14779_R02c_WS_LB

Tyler Grange

Report No:	Date	Revision	Author	Checked
14779_R02c	29th March 2023	C	Wilson Scott BSc (Hons) FdSc MArborA	Jamie Pratt BSc (Hons) MArborA

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Plans

Tree Constraints Plan (TCP) (14779/P01)

Tree Retention and Removal Plan (TRRP) (14779/P15b)

Section 1:- Introduction

Table 1:- Overview and Summary

Purpose of report:	Following the recommendations of the British Standard[1], this report includes the necessary arboricultural information to support the planning application. It demonstrates that the impact, both direct and indirect, of the proposal, has been assessed and where appropriate, mitigation and tree protection may be required.
Site description:	The site is 22.6 hectares and is located between Barnston and Pensby on agricultural land, most of which is not currently accessible to the public (See Figure 1 overleaf).
Application type and description:	Full planning application to create an area of Suitable Alternative Natural Greenspace (or 'SANG') which will open this land to the public and serve as a community asset for walking and recreation.
Report prepared on behalf of:	Strutt & Parker
Local Planning Authority (LPA):	Wirral Council
Planning policies relating to arboricultural features:	Policy GR7: Trees and New Development. Planning policy is further detailed at Appendix 1.
Report Summary:	Three trees and six sections of hedgerow of low value (Category C) are proposed for removal. These are considered unavoidable and compensatory tree planting will be provided on the site, including the provision of approximately 50no. new native trees in addition to supplementary hedgerow planting. This report details where tree pruning works are required along with mitigative measures for working within the rooting areas of trees where this is required. The retention of the majority of the boundary trees and the replacement of those removed allows for the proposed development to be set within a well-treed environment. The collective visual amenity the trees provide to the area will be preserved and therefore the proposal is not considered harmful to the character of the area and is therefore consistent with local planning policy NC01 of the UDP. The protection of the retained trees during the construction stage will require a detailed Arboricultural Method Statement (AMS). An AMS is therefore recommended to be secured by planning conditions should consent be granted.

[1] BS5837:2012 Trees in relation to design, demolition and construction- Recommendations, London: British Standards Institute

Figure 1:-.Site Location with Approximate Boundary (Google Earth ©).

Section 2:- Arboricultural Baseline

Table 2:- Survey Summary

Survey approach:	The tree survey was completed by a suitably qualified Arboricultural Surveyor of Tyler Grange on 9th May 2022. The survey was completed in accordance with BS5837. A measured topographical survey was used to identify the location of trees and their surrounding context.
Survey findings:	Findings for each of the trees surveyed are detailed in the Tree Survey Schedule (See Appendix 2). This provides a tabulated record of the trees surveyed, including reference numbers, species composition, tree dimensions, life stage, physiological and structural condition, and the arboricultural value of each survey entry.
Survey mapping:	The distribution of the trees surveyed is illustrated on the Tree Constraints Plan (TCP) together details of their constraints to new development in accordance with BS5837, including, tree quality gradings[2], Root Protection Areas (RPAs)[3], tree canopy spreads[4] and tree shading[5]

Table 3:- Tree related Designations

Designation Type	TG Tree Reference Number(s)
Tree Preservation Order[6]	HW0002W001 (Covers the north western extents of G12), WR0076A003 (covers almost the entirety of W1)
Conservation Area[7]	Barnston Conservation Area (Covers a large portion of the site to the east, including a portion of W1)
Ancient Woodland [8]	None
Other Woodland Habitat [9]	None

[2] The arboricultural value of surveyed features under the criteria shown at Appendix 1. Allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.
[3] a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
[4] Dimensions of the trees crown spread and clearance from ground level.
[5] Shade cast by existing trees which may affect the availability of sunlight and daylight within a new development.
[6] A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits the any works and damage to trees (with some exceptions) without the local planning authority's written consent. More information can be found online https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general.
[7] Trees in a conservation area that are not protected by an Order are protected by the provisions in section 211 of the Town and Country Planning Act 1990. These provisions require people to notify the local planning authority, using a 'section 211 notice', 6 weeks before carrying out certain work on such trees, unless an exception applies. More information can be found online https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general.
[8] Ancient woods are areas of woodland that have persisted since 1600 in England and Wales, and 1750 in Scotland. The Magic Maps website https://magic.defra.gov.uk/MagicMap.aspx has been used to search for ancient woodland on or adjacent to a site.
[9] Spatial data of woodlands identified under the Priority Habitat Inventory (England) Published by Natural England. The Magic Maps website https://magic.defra.gov.uk/MagicMap.aspx has been used to search for woodland on or adjacent to a site.

Section 3:- Arboricultural Impact Assessment

Tree Retention and Removal

3.1. Trees to be retained and removed are shown on the TRRP. Table 4 below describes the tree losses required to facilitate the development and provides recommendations for compensation.

Table 4:- Trees to be Removed to Facilitate Development

Reference Number	Category Grading	Description of Loss	Compensatory Measures
H3, H4, H8, H9, H12, H14 H15	C	Removal of seven sections of hedgerow totalling c.26m to facilitate construction of proposed footpath where it traverses the existing field boundaries.	New internal tree planting where possible throughout the site as shown on the proposed landscape plans.

Tree Pruning Works

3.2. Trees to be pruned are shown on the TRRP. Table 5 below details pruning works to retained trees to facilitate development purposes.

Table 5:- Tree Pruning Works

Reference Number	Category Grading	Description of Works
G18	A	Crown lift canopy to 2.4m from ground level to provide clearance from proposed footpath.
G10, G19	B	
G27	C	

New Tree Planting

3.3. A proposed soft-landscaping scheme has been prepared and submitted separately as part of the application. The proposal includes for new tree planting internally within the site with the addition of supplementary hedgerow planting to mitigate for the small sections of required hedgerow removal. Approximately 50 new trees and multiple lengths of hedgerows will be planted. Despite the proposed tree losses, it is anticipated that a net-gain in tree canopy will be achieved in the long-term.

Works within Root Protection Areas

3.4. Works required within the RPAs of trees to facilitate the construction stages of the development are detailed in the table below. Recommendations to mitigate the working activities with respect to minimising impacts to roots and their environment is provided.

3.5. Adoption of the recommended protective measures is subject to the approval of a detailed Arboricultural Method Statement (AMS) which will be provided by condition should consent be granted.

Table 6:- Works within RPAs

Tree Number	Description of works	Protective measures
Proposed Surfacing		
G18	Concrete surfacing to allow crossing of agricultural machinery situated at the periphery of the RPA.	The proposed incursion is minor and is not expected to negatively impact the longevity of the group of trees. Therefore, the proposed surface is to not exceed an area greater than 20% of the existing unsurfaced ground within the RPA.
G10, G18, G19 T23, T25, G27, T44-T55*	Compacted gravel/hogging footpath with timber edges located throughout the site within the RPAs of multiple trees.	These areas of incursions within the RPA will require a no-dig approach with permeable surfacing implemented to the manufacturer's specifications.

3.6. Whilst trees T45, T54 and T55 have been categorised as Category U in accordance with the BS5837 survey criteria, these shouldn't be viewed as a material constraint in relation to a development proposal, they have been flagged as high bat roost potential trees. As such, these trees are to be retained and protected during development irrespective of their categorisation.

3.7. Given their Category U status, however, it is recommended that they (and all other trees across the site), are subject to annual risk assessment surveys to derive an appropriate management plan for monitoring the declining health and structural condition (especially the Cat U trees) during the SANG development. Should the tree be considered to be an immediate high risk to public safety, further engagement will be needed with an ecologist to assess the risk to bats. This may result in a suitable compromise being actioned in order to safely maintain the tree subject to sufficient bat habitat considerations.

Long-term Tree Management and Social Proximity

3.8. The proximity associated with retained trees has been recognised in relation to the potential impacts of future canopy growth towards new footpaths proposed within the SANG.

3.9. The above recommended pruning works are required to reduce canopy encroachment onto the proposed footpaths within the SANG. It is likely that these works will need to be repeated as the canopies regrow over time. Therefore, these works would need to be reviewed periodically to ensure canopy encroachments onto the proposed footpaths are kept to a minimum.

Construction Mitigation

3.10. Trees to be retained will remain unaffected by the proposed development subject to the adoption of tree protection measures during the construction phase.

3.11. It is recommended that a full Arboricultural Method Statement (AMS) is prepared as part of the technical design stage as recommended by BS5837. Should consent be granted, this can be secured by way of a suitably worded planning Condition.

3.12. The AMS will set out a practical methodology to the protection of retained trees based on detailed construction plans . The AMS will typically include the following key items:

- A schedule and specification of tree removal and pruning works.
- Specifications for tree protection barriers and ground protection.
- Procedures for any specialist construction techniques / any supervised excavations within RPAs.
- Phasing of work.
- Site monitoring (where required).
- A Tree Protection Plan.

Conclusion

3.13. The proposed development requires the removal of six sections of low quality hedgerow and three trees of poor quality. The vast majority of principal tree cover is to be retained, and the overall arboricultural resource will remain unaffected given the localised nature of the tree and hedgerow removals.

3.14. The layout has been suitably designed to incorporate the site's tree stock highlighted for retention, and the proposed soft-landscaping scheme will deliver some arboricultural benefits through the provision of feature amenity tree and shrub planting in accordance with Policy GR7: 'Trees and New Development.

3.15. A proposed soft-landscaping scheme has been prepared and submitted separately as part of the application. The proposal includes approximately 50no. new trees internal to site, with the addition of multiple lengths of supplementary hedgerow planting, the provision of which is projected to adequately mitigate for the limited number of required tree removals.

3.16. Trees can be protected as part of the construction stage of the development which will be addressed by way of a detailed Arboricultural Method Statement that builds on the initial strategy for tree protection as detailed within this report. Should consent be granted, a condition securing the preparation and adoption of an Arboricultural Method Statement is therefore recommended.

3.17. Given the limited quantum of trees proposed for removal, the retention of the majority of principle tree cover, and the scope to provide compensatory tree planting, the development proposal is therefore acceptable from an arboricultural perspective. Hence, the proposed development demonstrates conformity with local planning policy aspirations pertinent to trees and green infrastructure

Appendix 1: Planning Policy Relating to Trees

Table 7:- National and Local Planning Policy Relating to Trees

Policy Document	Policy References	Policy Wording / Description
National Planning Policy Framework (NPPF)	Section 12, paragraph 131	"Trees make an important contribution to the character and quality of urban environments and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users."
	Section 15, paragraph 174	"Planning policies and decisions should contribute to and enhance the natural and local environment by:" Subsection B; "recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland."
	Section 15, paragraph 180	"When determining planning applications, local planning authorities should apply the following principles:" Subsection C; "that development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists."
Local Planning Policy –Wirral Unitary Development Plan (UDP)	Policy GR7 / Trees and New Development	The Local Planning Authority will only will only permit proposals which ensure that trees are sufficiently protected during the construction phase of a development whilst preserving the wooded character of the site and the surrounding areas. The LPA state that where development involving the loss of trees is to be permitted, replacement tree planting elsewhere on the site, as a condition of planning consent, in order to protect or preserve the local amenity. Such planning conditions will include the provision for future maintenance of newly planted tree stock, including replacement for failures, and during the construction period, measures related to the protection of trees to be retained.

Appendix 2: BS 5837:2012 Cascade Chart for Tree Quality Assessment

TREES FOR REMOVAL				
Category and Definition	Criteria			Identification on Plan
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. • Trees infected with pathogens of significance to the health and/or safety of other trees nearby or very low-quality trees suppressing adjacent trees of better quality. (NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve)			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and Definition	Criteria - Subcategories			Identification on Plan
	1. Mainly Arboricultural Values	2. Mainly Landscape Values	3. Mainly Cultural Values, including Conservation	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural benefits.	MID BLUE
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or temporary/transient landscape benefit.	Trees with no material conservation or other cultural value.	GREY

Appendix 3: Report Limitations

Limitations

A3.1. The comments made are based on observable factors present at the time of inspection. Although the health and stability of trees in their current context is an integral part of their suitability for retention, it must be understood that this report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.

A3.2. No tree can be considered entirely safe, given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site. An assessment of the potential influence of trees upon existing buildings or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effects of incremental root or branch growth, are specifically excluded from this report.

Un-assessable Risks

A3.3. Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.

A3.4. The Wildlife and Countryside Act (WCA) 1981 (as amended) makes it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Bats are also a European protected species and are additionally protected under the Conservation (Habitats & c) Regulations 1994 and 2010 (as amended). The survey findings, constraints, opportunities and design or mitigation recommendations included within that report must be read alongside this document.

A3.5. A lack of recommended work does not imply that a tree does not pose an unacceptable level of risk and likewise, it should not be implied that a tree will present an acceptable level of risk following the completion of any recommended work.

Appendix 4: Tree Survey Schedule (14779_TSS01)

Tree Number	Common Species Name	Height (m)	Trunk Diameter	Crown Spread (m)				Height of Crown Clearance (m)	Physiological Condition	Structural Condition	Age Class	BS5837 Category	Comments	Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W									
T1	Horse chestnut	8m	200	1.00	3.00	4.50	3.00	1.30	Fair	Fair	Semi mature	C1	Small self set tree located beneath canopy of offsite group. Tree is small and well established. Canopy heavily suppressed to north by neighbouring group.	No works necessary at time of survey.	2.4	18
T2	Elder	12m	258	2.00	2.00	4.00	3.00	1.00	Fair	Fair	Mature	C1	Large elder present close to site boundary beneath canopy of offsite group. Tree is multistemmed from base.	No works necessary at time of survey.	3.1	30
T3	Sycamore	10m	735	5.00	5.00	5.00	5.00	3.00	Fair	Fair	Semi mature	C1	Off site multi stemmed tree. No access to base, attributes estimated.	No works necessary at time of survey.	8.8	244
T4	Sycamore	18m	808	6.00	6.00	6.00	6.00	3.00	Good	Fair	Mature	C1	Tree located behind irrigation ditch within hedge line, confirm ownership. Tree is multi stemmed from base.	No works necessary at time of survey.	9.7	295
T5	Pedunculate oak	4m	90	2.50	2.50	2.50	2.50	0.50	Good	Fair	Young	C1	Small self set tree located on edge of irrigation ditch next to hedge line. Tree is well established and offers good future potential.	No works necessary at time of survey.	1.1	4
T6	Turkey oak	8m	250	3.50	3.50	3.50	3.50	3.00	Good	Fair	Semi mature	C1	Small self set tree located on edge of irrigation ditch within hedge line. Tree is well established and offers good future potential.	No works necessary at time of survey.	3.0	28
T7	Pedunculate oak	13m	550	5.00	5.00	4.50	5.50	3.00	Fair	Fair	Mature	B1	Tree located within boundary hedge line on edge of irrigation ditch tree is located approx 0.5m lower than general site level. Bark wound present on south stem of stem at base. South side of canopy has previously been heavily pruned back. Tree has small canopy. Moderate deadwood associated with canopy.	No works necessary at time of survey.	6.6	137
T8	Pedunculate oak	16m	633	6.00	7.00	6.50	8.00	3.00	Fair	Fair	Mature	B1	Tree located within boundary hedge line located on edge of irrigation ditch within field boundary hedge line. Tree is twin stemmed from base. Dense ivy growth on main stem. Moderate deadwood associated with canopy.	No works necessary at time of survey.	7.6	181

Tree Number	Common Species Name	Height (m)	Trunk Diameter	Crown Spread (m)				Height of Crown Clearance (m)	Physiological Condition	Structural Condition	Age Class	BS5837 Category	Comments	Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W									
T9	Pedunculate oak	13m	500	4.00	4.00	6.00	5.00	3.50	Fair	Fair	Mature	B1	Tree located within boundary hedge line on edge of irrigation ditch tree is located approx 0.5m lower than general site level. Dense ivy and vegetation around base restricting detailed assessment, attributes estimated. Tree has a large bend in main stem to south at approx 1m. Moderate deadwood associated with canopy.	No works necessary at time of survey.	6.0	113
T10	Common plum	5m	245	3.00	3.00	3.00	3.00	0.30	Fair	Poor	Early mature	U	Tree located within hedge line. Large failures have previously occurred within canopy with large wounds associated dense regrowth present on main stem.	No works necessary at time of survey.	2.9	27
T11	Sycamore	12m	350	4.00	3.00	4.00	5.00	3.00	Fair	Fair	Early mature	C1	Tree located within field boundary hedge line. Multiple partially occluded pruning wounds throughout main stem and canopy. Moderate deadwood associated with canopy. Good future potential.	No works necessary at time of survey.	4.2	55
T12	Pedunculate oak	13m	830	6.00	6.50	5.00	5.00	2.00	Good	Fair	Mature	A1	Tree located within field boundary hedge line next to irrigation ditch. Tree has 10 degree lean to north which corrects at approx 3m. North side of canopy has been heavily pruned a back within lower canopy. Multiple previous failures present within canopy of tree.	No works necessary at time of survey.	10.0	311
T13	Pedunculate oak	9m	450	5.00	5.00	5.00	5.00	3.00	Good	Fair	Mature	B1	Tree located within field boundary hedge line next to irrigation ditch. Tree has small squat form. Moderate deadwood associated with canopy.	No works necessary at time of survey.	5.4	92
T14	Pedunculate oak	13m	870	5.00	7.00	6.50	5.00	3.00	Good	Fair	Mature	A1	Tree located within field boundary hedge line next to soft standing access road. Dense vegetation and ivy obscuring detailed assessment. Tree has low crowded canopy. Offers good future value.	No works necessary at time of survey.	10.4	342
T15	Pedunculate oak	16m	800	7.00	7.00	8.00	6.00	5.00	Good	Fair	Mature	A1	Tree located within field boundary hedge line. Dense vegetation and ivy obscuring detailed assessment. Tree had moderate deadwood associated with canopy. Good future potential.	No works necessary at time of survey.	9.6	289

Tree Number	Common Species Name	Height (m)	Trunk Diameter	Crown Spread (m)				Height of Crown Clearance (m)	Physiological Condition	Structural Condition	Age Class	BS5837 Category	Comments	Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W									
T16	Pedunculate oak	6m	880	4.00	2.00	3.50	5.00	3.00	Fair	Fair	Mature	B1	Tree located within field boundary hedge line. Dense vegetation and ivy obscuring detailed assessment. Tree has had previous major failures within canopy losing majority of crown. Tree now has squat figure with small canopy. Tree offers good future ecological value.	No works necessary at time of survey.	10.6	350
T17	Sycamore	15m	950	9.00	9.00	9.00	9.00	3.00	Good	Fair	Mature	B1	Tree located within field boundary hedge line. Small cavity at base between buttress roots, unable to determine extent of decay, however tree has good canopy vigour. Tree has minor decay within canopy. Large deadwood associated with canopy. Good future potential.	No works necessary at time of survey.	11.4	408
T18	Sycamore	9m	320	5.00	5.00	5.00	5.00	3.00	Fair	Fair	Semi mature	C1	Tree located within field boundary hedge row. Tree is likely self seeded. Offers good future tree cover on site. Tree is well established and bifurcates to form twin stems at approx 1.8m.	No works necessary at time of survey.	3.8	46
T19	Pedunculate oak	16m	1000	9.00	7.00	7.00	8.00	4.00	Good	Fair	Mature	A1	Tree located within hedge row between field boundaries. Tree is large with good canopy vigour. Large deadwood and evidence of previous weather damage within canopy. Tree offers very good future value to site.	No works necessary at time of survey.	12.0	452
T20	Sycamore	13m	380	6.00	6.00	6.00	6.00	4.00	Good	Fair	Early mature	C1.2	Tree located within field boundary hedge line. Dense Epicormic growth at base of tree. Tree has good canopy vigour with moderate deadwood associated.	No works necessary at time of survey.	4.6	65
T21	Pedunculate oak	15m	490	6.00	5.50	5.00	6.00	3.00	Fair	Fair	Early mature	C1.2	Tree located within field boundary hedge line. Tree has put canopy vigour and is declining heavily. Moderate deadwood associated with canopy. Limited future contribution.	No works necessary at time of survey.	5.9	109
T22	Pedunculate oak	15m	530	8.00	8.00	8.00	8.00	3.50	Good	Fair	Mature	B1.2	Tree located within field boundary hedge line. Tree has protuberance at main stem approx 0.5m from base where old stem likely failed. Tree has good canopy vigour and aesthetic shape. Minor deadwood within canopy. Strong future potential.	No works necessary at time of survey.	6.4	127

Tree Number	Common Species Name	Height (m)	Trunk Diameter	Crown Spread (m)				Height of Crown Clearance (m)	Physiological Condition	Structural Condition	Age Class	BS5837 Category	Comments	Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W									
T23	Pedunculate oak	18m	700	7.00	8.00	9.00	8.00	5.00	Good	Fair	Mature	A1	Tree located on edge of wider group next to steel fence entrance gate. Tree has light ivy cover on main stem restricting detailed assessment. Tree has good future potential.	No works necessary at time of survey.	8.4	222
T24	Sycamore	12m	320	5.00	5.00	5.00	5.00	5.00	Fair	Fair	Semi mature	C1	Roadside street tree in grassy verge adjacent to site.	No works necessary at time of survey.	3.8	46
T25	Pedunculate oak	20m	1050	9.00	9.00	9.00	9.00	6.00	Good	Fair	Mature	A1	Tree located behind wooden rail fence, confirm ownership tree is very large and a prominent part of the local landscape. Tree has good canopy vigour with minor deadwood within canopy. Previously wounds within canopy from weather danger with small decay associated. Tree has very strong future potential.	No works necessary at time of survey.	12.6	499
T26	Pedunculate oak	14m	420	5.00	6.00	4.00	5.00	3.00	Good	Fair	Mature	B1.2	Located within field boundary hedge line. Tree has light ivy cover on main stem. Moderate deadwood associated with canopy.	No works necessary at time of survey.	5.0	80
T27	Common ash	12m	163	4.00	4.00	4.00	4.00	4.00	Fair	Fair	Semi mature	C1.2	Located within field boundary hedge line. Tree has early signs of ash dieback present, limited future contribution.	No works necessary at time of survey.	2.0	12
T28	Pedunculate oak	8m	480	5.00	5.00	4.00	2.00	4.00	Good	Fair	Mature	C1	Tree has large cavity on north side , unable to determine extent of decay. Tree has 15 degree lean to south at base which corrects at 4m. Low squat canopy forming mutually with neighbouring tree.	No works necessary at time of survey.	5.8	104
T29	Pedunculate oak	9m	400	4.00	3.00	6.00	5.00	3.00	Good	Fair	Mature	C1	Tree is located within field boundary hedge line. 10 degree lean to south from base, correcting at 3m. Good canopy vigour. Low squat canopy forming mutually with neighbouring tree.	No works necessary at time of survey.	4.8	72
T30	Common apple	5m	280	4.00	4.00	4.00	4.00	3.00	Fair	Fair	Early mature	C1	Fruit tree located within hedge line. Tree has dense canopy with multiple wounds throughout.	No works necessary at time of survey.	3.4	35
T31	Pedunculate oak	12m	420	6.00	6.00	6.00	6.00	3.00	Good	Fair	Early mature	B1	Tree located within field boundary hedge line. Large failure from main stem present with one branch still hung within canopy. Tree has good canopy vigour and good future potential.	Remove partially failed branch.	5.0	80

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				N	E	S	W									
T32	Pedunculate oak	13m	430	3.00	7.00	6.00	5.00	3.00	Good	Fair	Early mature	B1.2	Tree is located within residential garden, small treehouse is present at base. Located directly behind wire fence. Minor deadwood associated with canopy.	No works necessary at time of survey.	5.2	84
T33	Sycamore	13m	358	3.00	6.00	4.00	6.00	4.00	Fair	Fair	Semi mature	C2	Scrubby tree located offsite within field hedge line	No works necessary at time of survey.	4.3	58
T34	Pedunculate oak	14m	750	8.00	5.00	4.00	5.00	4.00	Fair	Fair	Mature	A1	Mature oak located behind residential dwellings next to barbed wire fence, confirm ownership.	No works necessary at time of survey.	9.0	254
T35	Pedunculate oak	13m	850	5.00	1.00	4.00	6.00	1.50	Fair	Poor	Mature	U	Tree located within grassy field. Tree has recently has major fail of one limb to east and split in half. Remaining part of tree has large cavity indicating weakness and limited availability of live sound wood. Limited future contribution.	No works necessary at time of survey.	10.2	327
T36	Pedunculate oak	13m	1200	4.50	9.00	10.00	6.00	0.20	Good	Fair	Mature	A1	Tree located within grassy field. Small cavity present between buttress roots at e to south, unable to determine extent of decay. Large lateral limbs with major dead wood present. Partially occluded pruning wounds associated with main stem. Low dense canopy reaches ground to south east. Partially failed branch within canopy. Very strong future potential.	Remove partially failed branch.	14.4	651
T37	Common ash	15m	612	4.00	4.00	4.00	4.00	2.00	Fair	Fair	Early mature	C1.2	Tree located within hedge line on edge of site boundary. Tree is multi stemmed from base. Early signs of ash dieback present, limited future contribution.	No works necessary at time of survey.	7.3	170
T38	Pedunculate oak	12m	850	8.00	8.00	8.00	8.00	3.00	Good	Fair	Mature	A1	Tree located within boundary hedge line. Tree bifurcates at approx 2m to for form codominant stems. Minor deadwood associated with canopy. Good future potential.	No works necessary at time of survey.	10.2	327
T39	Pedunculate oak	12m	460	6.00	5.00	6.00	5.00	2.00	Good	Fair	Mature	B1	Tree located within boundary hedge line. Located behind barbed wire fence, confirm ownership. Tree has light ivy cover on main stem. Minor deadwood associated with canopy. Good future potential.	No works necessary at time of survey.	5.5	96

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				N	E	S	W									
T40	Common ash	9m	367	4.00	4.00	4.00	4.00	3.00	Fair	Fair	Semi mature	C1	Located on roadside behind wire fence, confirm ownership. Tree is multi stemmed from base. Early signs of ash dieback present, limited future contribution.	No works necessary at time of survey.	4.4	61
T41	Pedunculate oak	12m	600	6.00	7.00	7.00	5.00	3.00	Good	Fair	Mature	B1	Tree located on edge of bank next to small stream light ivy cover on main stem. Moderate deadwood associated with canopy. Small informal path passes at base to north. Good future potential.	No works necessary at time of survey.	7.2	163
T42	Common beech	12m	500	4.00	4.00	4.00	4.50	4.00	Poor	Declining	Mature	U	Tree stands on edge of grassy field. Tree is heavily declining with only a few live branches remaining. Large dead wood within canopy. Very limited future contribution.	No works necessary at time of survey.	6.0	113
T43	Sycamore	9m	350	5.00	4.50	3.00	3.00	2.50	Good	Fair	Early mature	C1	Tree stands on edge of grassy field. Informal path passes by stem to south. Tree has good crown vigour with low branches. Some partially occluded wounds associated with main stem and canopy	No works necessary at time of survey.	4.2	55
T44	Sycamore	12m	380	4.00	4.00	4.00	4.00	3.00	Fair	Fair	Early mature	C1	Tree located within field boundary hedge line next to small stream. Tree has very small canopy with most vigour within lower canopy. Dense ivy throughout canopy. Some decline present within canopy.	No works necessary at time of survey.	4.6	65
T45	Sycamore	12m	340	2.00	2.00	2.00	2.00		Dead	Poor	Dead	U	Standing dead tree	No works necessary at time of survey.	4.1	52
T46	Sycamore	13m	380	5.00	5.00	5.00	4.00	3.00	Good	Fair	Early mature	C1	Tree stands on edge of grassy field. Informal path passes by stem to south. Tree has good crown vigour with low branches. Some partially occluded wounds associated with main stem and canopy	No works necessary at time of survey.	4.6	65
T47	Sycamore	8m	300	3.50	3.50	3.50	3.50	3.00	Fair	Fair	Semi mature	C1	Tree stands on edge of grassy field. Informal path passes by stem to south. Tree has moderate crown vigour with some dieback in the upper canopy. Dense ivy associated with main stem and canopy. Large deadwood present within canopy. Tree is easily replaced.	No works necessary at time of survey.	3.6	41

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				N	E	S	W									
T48	Sycamore	7m	300	3.00	3.50	2.00	3.50	3.00	Fair	Fair	Semi mature	C1	Tree stands on edge of grassy field. Gravel and hard core path passes by stem to south. Tree has moderate crown vigour with some dieback in the upper canopy. Dense ivy associated with main stem and canopy. Minor deadwood present within canopy. Tree is easily replaced.	No works necessary at time of survey.	3.6	41
T49	Sycamore	13m	300	5.00	5.00	3.00	4.00	4.00	Fair	Fair	Early mature	C1	Tree stands on edge of grassy field. Gravel and hard core path passes by stem to south. Tree has moderate crown vigour with large dieback in the upper canopy. Dense ivy associated with main stem and canopy. Large deadwood present within canopy. Tree is easily replaced.	No works necessary at time of survey.	3.6	41
T50	Sycamore	7m	300	3.00	2.00	2.00	3.50	3.00	Fair	Fair	Semi mature	C1	Tree stands on edge of grassy field. Gravel and hard core path passes by stem to south. Tree has moderate crown vigour with some dieback in the upper canopy. Dense ivy associated with main stem and canopy. Minor deadwood present within canopy. Tree is easily replaced.	No works necessary at time of survey.	3.6	41
T51	Sycamore	11m	250	3.00	3.00	3.00	3.00	2.50	Fair	Fair	Semi mature	C1	Tree stands on edge of grassy field. Gravel and hard core path passes by stem to south. Tree has moderate crown vigour with some dieback in the upper canopy. Dense ivy associated with main stem and canopy. Minor deadwood present within canopy. Tree is easily replaced.	No works necessary at time of survey.	3.0	28
T52	Sycamore	11m	344	2.00	4.00	4.00	4.00	3.00	Fair	Fair	Semi mature	C1	Tree stands on edge of grassy field. Gravel and hard core path passes by stem to north. Tree is multi stemmed from base. Tree has moderate crown vigour with some dieback in the upper canopy. Dense ivy associated with main stem and canopy. Minor deadwood present within canopy. Tree is easily replaced.	No works necessary at time of survey.	4.1	54

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				N	E	S	W									
T53	Sycamore	11m	300	4.00	5.00	3.00	3.00	3.00	Fair	Fair	Early mature	C1	Tree stands on edge of grassy field. Gravel and hard core path passes by stem to south. Tree has poor crown vigour with large areas of dieback in the upper canopy. Moderate deadwood present within canopy. Tree is easily replaced.	No works necessary at time of survey.	3.6	41
T54	Sycamore	10m	320	3.00	3.00	3.00	3.00	3.00	Poor	Fair	Early mature	U	Tree stands on edge of grassy field. Hard standing path passes by stem to south. Tree has very poor crown vigour and significant dieback within canopy. Tree has very limited future contribution.	No works necessary at time of survey.	3.8	46
T55	Sycamore	10m	350	3.00	3.00	3.00	3.00	3.00	Poor	Fair	Early mature	U	Tree stands on edge of grassy field. Hard standing path passes by stem to south. Tree has very poor crown vigour and significant dieback within canopy. Tree has very limited future contribution.	No works necessary at time of survey.	4.2	55
T56	Sycamore	12m	480	6.00	6.00	6.00	6.00	4.00	Good	Fair	Early mature	C1	Tree located on grassy verge next to road.	No works necessary at time of survey.	5.8	104
T57	Common ash	12m	350	4.00	2.00	3.00	4.00	3.00	Good	Fair	Early mature	C1	Tree located on grassy verge next to road.	No works necessary at time of survey.	4.2	55
T58	Sycamore	12m	450	4.00	3.00	4.00	4.00	2.50	Good	Fair	Early mature	C1	Tree located on grassy verge next to road.	No works necessary at time of survey.	5.4	92
T59	Common lime	17m	510	4.00	3.00	4.00	4.00	2.00	Good	Fair	Early mature	C1	Tree located on grassy verge next to road.	No works necessary at time of survey.	6.1	118
T60	Common lime	17m	540	4.00	2.00	3.00	4.00	1.80	Good	Fair	Early mature	C1	Tree located on grassy verge next to road.	No works necessary at time of survey.	6.5	132
G1	Horse chestnut, Fuji Cherry, Common lime	Min 9 - Max 18	Min 380 - Max 800	-	-	-	-	0.30	Good	Fair	Mature	B2	Offsite group located directly behind stone wall. Trees are well established and offer good offsite screening. Canopies encroach on site to south by max 6m and reach close to ground. No access to base, attributes estimated.	No works necessary at time of survey.	-	-
G2	Common apple, Cherry plum, Rowan	Ave 8	Ave 300	-	-	-	-	3.00	Fair	Fair	Semi mature	C2	Ornamental planting located directly off site. No access to base, attributes estimated.	No works necessary at time of survey.	-	-
G3	Cherry plum	Ave 6	Ave 280	-	-	-	-	3.00	Fair	Fair	Semi mature	C2	Ornamental planting located directly off site. No access to base, attributes estimated.	No works necessary at time of survey.	-	-

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				N	E	S	W									
G4	Common ash, Goat willow	Ave 7	Ave 280	-	-	-	-	0.30	Fair	Fair	Early mature	C2	Group of scrubby trees located on edge of small pond. Trees are located within a dip in the ground and are approx 0.5m lower than general site level. Ash associated with group showing signs of ash dieback.	No works necessary at time of survey.	-	-
G5	Sycamore, Horse chestnut, Common hawthorn, Common ash, Wild cherry	Min 5 - Max 12	Min 50 - Max 400	-	-	-	-	3.00	Fair	Fair	Early mature	C2	Group located directly off site behind irrigation ditch and hedge line.	No works necessary at time of survey.	-	-
G6	Goat willow	Ave 7	Ave 150	-	-	-	-	0.30	Fair	Fair	Semi mature	C2	Dense group of scrubby trees around pond. Trees are located approx 0.5m lower than general site level.	No works necessary at time of survey.	-	-
G7	Goat willow	Min 3 - Max 11	Ave 180	-	-	-	-	0.30	Fair	Fair	Semi mature	C2	Dense group of scrubby trees around pond. Trees are located approx 1m lower than general site level.	No works necessary at time of survey.	-	-
G8	Pedunculate oak	Ave 11	Min 390 - Max 850	-	-	-	-	3.50	Good	Fair	Mature	A2	Group of trees located within field boundary hedge line. Lower canopies have been pruned back. Moderate deadwood associated with canopies. Large cavity at base within one tree, unable to confirm extent of decay. Trees have strong future value.	No works necessary at time of survey.	-	-
G9	Pedunculate oak	Min 6 - Max 13	Ave 950	-	-	-	-	2.50	Good	Fair	Mature	A2	Group of trees within field boundary hedge line. Trees are mixture of ages and offer good future tree cover. Moderate deadwood and previous failures throughout canopies. Moderate d deadwood throughout.	No works necessary at time of survey.	-	-
G10	Sycamore, Common hawthorn, Pedunculate oak, Goat willow	Min 3 - Max 12	Min 90 - Max 600	-	-	-	-	1.50	Good	Fair	Mature	B2	Group located within corner of field next to pond. Area has varying levels with some trees at same level of site and some approx 1.5m lower. Quality of trees are mixture with some failed poplars and goat willow with larger oaks on edge. Trees offer good aesthetic and wildlife value.	No works necessary at time of survey.	-	-

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				N	E	S	W									
G11	Sycamore, Horse chestnut, Pedunculate oak	Min 6 - Max 15	Min 280 - Max 900	-	-	-	-	2.50	Good	Fair	Mature	A2	Field boundary hedge line group. Trees are predominantly mature with some smaller sycamore throughout. Trees are well established and offer good future potential. Moderate deadwood throughout group with multiple previous weather damage.	No works necessary at time of survey.	-	-
G12	Sycamore, Common hawthorn, Common beech, English holly, Pedunculate oak	Min 3 - Max 16	Min 90 - Max 480	-	-	-	-	0.30	Good	Fair	Mature	B2	Boundary group located behind wire fence, confirm ownership. Trees are densely grown with some gaps. A dense hedge is present at base restricting access to group , attributes estimated. Trees offer good off site screening. Canopies encroach on site by max 5m.	No works necessary at time of survey.	-	-
G13	Sycamore, Horse chestnut, Common hazel, Common beech, Common ash, Pedunculate oak	Min 4 - Max 18	Min 120 - Max 650	-	-	-	-	1.00	Good	Fair	Mature	A2	Group along road side and site boundary. Canopies encroach on site by max 6m. Trees are mixed quality and age which offers good ecological value and future tree cover on site. Dense understory of hawthorn throughout. Trees offer good screening with adjacent main road. Good future potential.	No works necessary at time of survey.	-	-
G14	Horse chestnut, Common ash	Ave 11	Min 480 - Max 550	-	-	-	-	1.00	Poor	Fair	Early mature	C2	Group of ash and horse chestnut. Horse chestnut showing signs of horse chestnut bleeding canker and ash showing signs of dieback. Both have limited future contribution. Ash has large cavity on main stem. Dense ivy located on ash tree.	No works necessary at time of survey.	-	-
G15	Sycamore, Horse chestnut, Pedunculate oak	Min 5 - Max 15	Min 300 - Max 850	-	-	-	-	3.00	Good	Fair	Mature	B2	Field boundary hedge line group. Trees are typical of species and age. Various multiple wounds and weather damage throughout group. Moderate deadwood associated with canopies. Good future value.	No works necessary at time of survey.	-	-
G16	Sycamore, Pedunculate oak	Ave 13	Ave 400	-	-	-	-	1.00	Good	Fair	Early mature	B2	Group of trees along edge of residential gardens. Trees are approx 0.5m higher than general site level. Trees are well established and offer good screening with off site residential dwellings. Good future potential	No works necessary at time of survey.	-	-

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G17	Common hawthorn, Blackthorn, Pedunculate oak, Goat willow	Min 3 - Max 12	Min 50 - Max 550	-	-	-	-	0.30	Good	Fair	Mature	B2	Group on edge of pond. Consists of mature oaks with understory of scrubby willow, hawthorn and blackthorn. Trees offer good ecological value. Scrubby trees only valuable as a collective. Trees are moderate quality with moderate sized deadwood associated.	No works necessary at time of survey.	-	-
G18	Pedunculate oak	Min 9 - Max 14	Min 500 - Max 900	-	-	-	-	2.00	Good	Fair	Mature	A1.2	Row of mature oak trees along field boundary hedge line. Trees are well established and offer very good aesthetic value. One tree located centrally to group has partially failed within canopy with branch still in situ. Very good future potential.	Remove partially failed branch within canopy.	-	-
G19	Common hawthorn, English holly, Wild cherry, Pedunculate oak, Goat willow	Min 3 - Max 14	Min 50 - Max 390	-	-	-	-	0.30	Good	Fair	Semi mature	B2	Scrubby group of trees around small pond. Group consists of predominantly goat willow and wild cherry with some larger oaks within. Trees are varied in quality with some failed branches/stems throughout. Good ecological value. Limited individual value.	No works necessary at time of survey.	-	-
G20	Pedunculate oak	Ave 15	Ave 700	-	-	-	-	3.00	Good	Fair	Mature	A1.2	Trees located on edge of woodland strip. Trees appear offsite, confirm ownership. Good aesthetic value and screening value with adjacent residential dwellings.	No works necessary at time of survey.	-	-
G21	Pedunculate oak	Min 8 - Max 12	Min 500 - Max 760	-	-	-	-	1.00	Good	Fair	Mature	A1.2	Trees located within hedgerow on edge on woodland strip. Low dense canopies throughout group. Good aesthetic value. Moderate deadwood associated with canopy. Trees are well established and have strong future potential.	No works necessary at time of survey.	-	-
G22	Pedunculate oak	Min 8 - Max 14	Min 450 - Max 1000	-	-	-	-	1.00	Good	Fair	Mature	A1.2	Trees located within hedgerow on edge on woodland strip. Low dense canopies throughout group. Good aesthetic value. Moderate deadwood associated with canopy. Trees are well established and have strong future potential.	No works necessary at time of survey.	-	-

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G23	Pedunculate oak	Ave 15	Min 780 - Max 930	-	-	-	-	1.50	Good	Fair	Mature	A2	Trees located on edge of woodland belt within grassy field. Barbed wire fence present at base of trees. Trees has aesthetic value and form a mutual canopy. Moderate deadwood associated with canopies. Strong future potential.	No works necessary at time of survey.	-	-
G24	Pedunculate oak	Ave 12	Ave 950	-	-	-	-	1.50	Good	Fair	Mature	A1	Trees located on bank next to dried up pond. Trees are located approx 0.2m higher than general site level. Located on edge of boundary, trees offer good off site screening and aesthetic value. Limited deadwood associated with canopy. Strong future potential.	No works necessary at time of survey.	-	-
G25	Field maple, Norway maple, Sycamore, Silver birch, Common hawthorn, Common ash	Ave 12	Ave 350	-	-	-	-	1.30	Fair	Fair	Early mature	C2	Trees located off site directly behind wire fence. Dense group of ornamental planting. Canopies encroach on site by max 3m.	No works necessary at time of survey.	-	-
G26	Sycamore, Common hawthorn, Blackthorn	Min 2 - Max 12	Min 40 - Max 350	-	-	-	-	0.20	Fair	Fair	Early mature	C2	Spur of woodland around small stream. Trees are generally scrubby and hedge like with some a taller canopy of sycamore. Dense vegetation, no access to base - attributes estimated.	No works necessary at time of survey.	-	-
G27	Sycamore	Ave 12	Min 320 - Max 550	-	-	-	-	1.50	Fair	Fair	Early mature	C2	Group of 3 trees on edge of grassy field located within hedge line. Trees are typical of hedge line trees with moderate deadwood throughout. Trees are well established and offers good green corridor/highway for adjacent woodland.	No works necessary at time of survey.	-	-
G28	Sycamore, Common ash, Pedunculate oak, Goat willow	Min 4 - Max 12	Min 120 - Max 370	-	-	-	-	0.30	Good	Fair	Early mature	C2	Group around pond. Trees are generally scrubby with taller oak, ash and sycamore behind. Stands within grassy field. Moderate deadwood throughout group.	No works necessary at time of survey.	-	-
G29	Sycamore, Common hawthorn, Common ash	Ave 7	Ave 210	-	-	-	-	1.30	Fair	Fair	Semi mature	C2	Group of self set tree trees on edge of farm yard area. Trees are slender and are easily replaced.	No works necessary at time of survey.	-	-
H1	Common hawthorn	Ave 2	Ave 90	-	-	-	-	0.20	Fair	Fair	Semi mature	C2	Well maintained field boundary hedge line.	No works necessary at time of survey.	-	-

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				N	E	S	W									
H2	Blackthorn, Common hawthorn, Elder	Ave 2	Ave 90	-	-	-	-	0.20	Fair	Fair	Semi mature	C2	Well maintained field boundary hedge line.	No works necessary at time of survey.	-	-
H3	Blackthorn, Common hawthorn, Elder	Ave 2	Ave 90	-	-	-	-	0.20	Fair	Fair	Semi mature	C2	Well maintained field boundary hedge line.	No works necessary at time of survey.	-	-
H4	Blackthorn, Common hawthorn	Ave 2	Ave 90	-	-	-	-	0.30	Fair	Fair	Semi mature	C2	Well maintained field boundary hedge line	No works necessary at time of survey.	-	-
H5	Blackthorn, Common hawthorn, Elder, Sycamore	Ave 2	Ave 100	-	-	-	-	0.20	Fair	Fair	Early mature	C2	Regularly maintained field boundary hedge line.	No works necessary at time of survey.	-	-
H6	Blackthorn, Common ash, Common hawthorn, Sycamore	Ave 2	Ave 100	-	-	-	-	0.20	Fair	Fair	Early mature	C2	Regularly maintained boundary hedge line.	No works necessary at time of survey.	-	-
H7	Blackthorn, Common hawthorn, Elder	Ave 2	Ave 90	-	-	-	-	0.20	Fair	Fair	Early mature	C2	Regularly maintained field boundary hedge line.	No works necessary at time of survey.	-	-
H8	Blackthorn, Common hawthorn, Elder, Gorse	Ave 2	Ave 90	-	-	-	-	0.20	Fair	Fair	Early mature	C2	Regularly maintained field boundary hedge line.	No works necessary at time of survey.	-	-
H9	Blackthorn, Common hawthorn, Elder	Ave 2	Ave 90	-	-	-	-	0.20	Fair	Fair	Early mature	C2	Regularly maintained field boundary hedge line.	No works necessary at time of survey.	-	-
H10	Blackthorn, Common ash, Common hawthorn, Elder, Pedunculate oak, Sycamore	Min 3 - Max 9	Min 90 - Max 180	-	-	-	-	0.20	Fair	Fair	Early mature	C2	Unmanaged field boundary hedge line. Hedge has few gaps within with tall specimens.	No works necessary at time of survey.	-	-
H11	Blackthorn, Common hawthorn	Ave 2	Ave 90	-	-	-	-	0.20	Fair	Fair	Semi mature	C2	Well maintained field boundary hedge line	No works necessary at time of survey.	-	-
H12	Blackthorn, Common hawthorn, Elder	Min 2 - Max 5	Min 90 - Max 130	-	-	-	-	0.20	Fair	Fair	Early mature	C2	Partially maintained field boundary hedge line.	No works necessary at time of survey.	-	-
H13	Blackthorn, Common hawthorn	Ave 2	Ave 90	-	-	-	-	0.20	Fair	Fair	Semi mature	C2	Well maintained field boundary hedge line	No works necessary at time of survey.	-	-
H14	Common hawthorn	Ave 2	Ave 90	-	-	-	-	0.20	Good	Good	Semi mature	C2	Well maintained boundary hedge line.	No works necessary at time of survey.	-	-
H15	Common hawthorn	Ave 2	Ave 90	-	-	-	-	0.20	Good	Good	Semi mature	C2	Well maintained boundary hedge line.	No works necessary at time of survey.	-	-

Tree Number	Common Species Name	Height (m)	Trunk Diameter	Crown Spread (m)				Height of Crown Clearance (m)	Physiological Condition	Structural Condition	Age Class	BS5837 Category	Comments	Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W									
W1	Sycamore, Silver birch, Common hawthorn, Common beech, English holly, Hybrid black poplar, Blackthorn, Pedunculate oak, Goat willow, Elder	Min 3 - Max 18	Min 60 - Max 1200	-	-	-	-	0.20	Good	Fair	Mature	A2	Woodland located around a central stream. Woodland is very dense with dense bramble/vegetation throughout. Stream located within the wood has steep banks limiting access into woodland. Trees are mixed broadleaf with some large oak and beech throughout. Very high value and offers good tree cover on site.	No works necessary at time of survey.	-	-

Plans

Tree Constraints Plan (14779/P01)

Tree Retention and Removal Plan (14779/P15b)

Survey Boundary (to be added once confirmed)

Category A - Trees of High Quality and Value

Category B - Trees of Moderate Quality and Value

Category C - Trees of Low Quality and Value

Category U - Trees Recommended for Removal

Root Protection Areas

Trees/Groups/Woodland covered a Tree Preservation Order (TPO)

Barnston Conservation Area

Rev	Description	Date

Tyler Grange

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W: www.tylergrange.co.uk

Project title

Leverhulme Estate

Drawing title

Tree Constraints Plan - Sheet 1 of 3

Scale	1:750 @ A0	Drawn	SH/LB
Date	09.05.2022	Checked	JJ

Drawing number

14779_P01

Revision

-

0 25m

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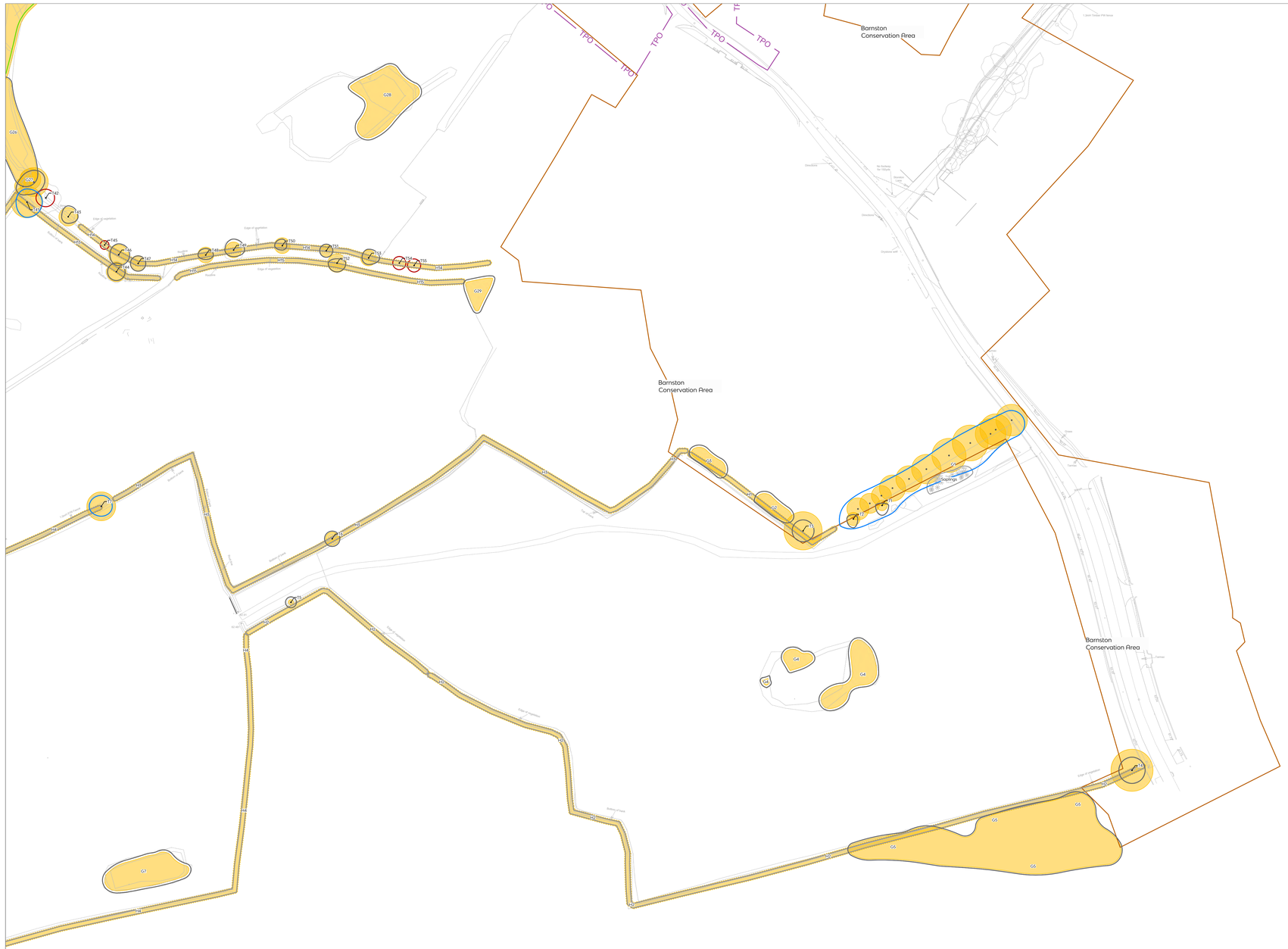

Survey Boundary (to be added once confirmed)

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Category C - Trees of Low Quality and Value

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Trees/Groups/Woodland covered a Tree Preservation Order (TPO)

Barnston Conservation Area

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-	-	-

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Project title
Leverhulme Estate

Drawing title
Tree Constraints Plan - Sheet 3 of 3

Scale	1:750 @ A0	Drawn	SH/LB
Date	09.05.2022	Checked	JJ

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14779_P01

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Survey Boundary

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Category B - Trees of Moderate Quality and Value

Category C - Trees of Low Quality and Value

Category U - Trees Recommended for Removal

Root Protection Areas

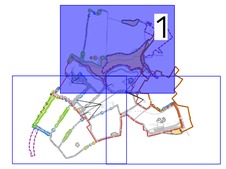
Trees/Groups/Woodland covered a Tree Preservation Order (TPO)

Barnston Conservation Area

Proposed Tree Removals

Proposed Tree Pruning Works

RPA Incursions



Rev	Description	Date
B	Update to H3 Section of Removal	29.03.2023
A	Layout change	23.03.2023

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Project title

Leverhulme Estate SANG

Drawing title

Tree Retention & Removal Plan - Sheet 1 of 3

Scale	1:750 @ A0	Drawn	WS
Date	29.03.2023	Checked	JP

Drawing number

14779_P15

Revision

B

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- Survey Boundary
- Category A - Trees of High Quality and Value
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Root Protection Areas
- Trees/Groups/Woodland covered a Tree Preservation Order (TPO)
- Barnston Conservation Area
- Proposed Tree Removals
- Proposed Tree Pruning Works
- RPA Incursions

Rev	Description	Date
B	Update to H5 Section of Removal	29.05.2023
A	Layout change	25.05.2023

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Project title

Leverhulme Estate, SANG

Drawing title

Tree Retention & Removal Plan - Sheet 2 of 3

Scale	1:750 @ R0	Drawn	WS
Date	29.05.2023	Checked	JP

Drawing number

14779_P15

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Survey Boundary

Category A - Trees of High Quality and Value

Category B - Trees of Moderate Quality and Value

Category C - Trees of Low Quality and Value

Category U - Trees Recommended for Removal

Root Protection Areas

Trees/Groups/Woodland covered a Tree Preservation Order (TPO)

Barnston Conservation Area

Proposed Tree Removals

Proposed Tree Pruning Works

RPA Incursions

Rev	Description	Date
B	Update to H3 Section of Removal	29.03.2023
A	Layout change	23.03.2023

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Project title

Leverhulme Estate, SANG

Drawing title

Tree Retention & Removal Plan - Sheet 3 of 3

Scale 1:750 @ A0

Date 29.03.2023

Drawn WS

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Drawing number

14779_P15

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Appendix S6: Ecological assessment of SANG produced by The Environment Bank

ECOLOGICAL AND SANG ASSESSMENT REPORT

Presented to: Leverhulme Estates Limited

Issued: 03/08/2022
Project No.: EB03130.19

A NEW PLAN FOR THE PLANET

ENVIRONMENT BANK

Report details

Client	Leverhulme Estates Limited Hesketh Grange, Manor Road, Thornton Hough, Wirral, CH63 1JD
Report title	Ecological and SANG Assessment Report
Site name	Land at Barnston Road, Barnston, Wirral
Project number	EB03130.19
Issued date	03/08/2022

Disclaimer

To achieve the study objectives stated in this report, we were required to base our conclusions on the best information available during the period of the investigation and within the limits prescribed by our client in the agreement.

Where information is provided by others, Environment Bank shall bear no liability in respect of any advice given on the basis of that information. No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Thus, we cannot guarantee that the investigations (date, work, interpretation of that data or work) completely defined the degree or extent of e.g. species abundances, habitat management efficacy, conservation credit calculations and hence credit requirements, described in the report. Nor does Environment Bank accept any liability for any decisions made by the client on the basis of the information, consultancy or advice provided by Environment Bank.

1.0 Introduction

1.1 Purpose and Scope of the Survey

1.1.1 The Environment Bank was instructed by Strutt and Parker on behalf of Leverhulme Estate (the "Client") to undertake an Ecological Walkover Survey of Land at Barnston Road, Barnston, Wirral (hereafter referred to as the "Site"), and to assess the Site's suitability to provide Suitable Alternative Natural Greenspace (SANG) to offset the likely significant effects of increased recreational pressures on identified designated sites as a result of the following proposed residential developments:

a. Site A) Land east of Glenwood Drive, Irby
b. Site B) Land east of Dale View Close, north of Gills Lane, Pensby
c. Site C) Land east of Thorncroft Drive, north of Gills Lane, Pensby
d. Site D) Land west of Barnston Road, north of Gills Lane, Pensby
e. Site E) Land at Milner Road and Barnston Road, Heswall
f. Site F) Land west of Raby Hall, Raby Hall Road, Raby Mere
g. Site G) Land east of Raby Hall, Raby Hall Road, Raby Mere
h. Site H) Land east of Rigby Drive, Greasby

1.1.2 The purpose of this report is to:

a. Record the extent and distribution of habitats present at the Site using the UK Habitat Classification System (UK Habs);
b. Establish baseline ecological conditions at the Site through a condition assessment to assess the biodiversity value of the habitats present;
c. Assess the potential for or signs of protected and notable species and their likely location within the Site;
d. To provide a baseline Biodiversity Accounting Assessment and an indicative post development calculation;
e. Identify any ecological constraints and/or recommendations; and
f. Assess the suitability of the Site to provide mitigation for potential increased.

1.2 Site Description

1.2.1 The Site is centred at Ordnance Survey ('OS') grid reference SJ 2764 8324, to the west of Barnston Village on the Wirral Peninsula. The Site covers an area of approximately 22.6 hectares ('ha') and comprises several irregular shaped fields, bounded by hedgerows and several ponds situated within the fields across the Site. The Site is currently in agricultural use.

1.2.2 To the north and south of the Site is further agricultural land. A continuation of the on-Site woodland and Barnston village lie to the east with further agricultural land beyond. To the west of the Site lies Pensby Village.

1.2.3 The existing Site Layout is shown in Figure 1.

1.3 Proposed Development

1.3.1 The Proposed Development is for creation of an area of SANG which will comprise creation of recreational walks, woodland and grassland planting, vehicular access and car parking to be provided from Barnston Road, south of Christ Church to the east of the Site. Existing habitats of value are proposed to be enhanced.

2 Methodology

2.1 Field survey

2.1.1 The field survey comprised an ecological walkover of the Site in accordance with the UK Habitat Classification methodology (Butcher *et al*. 2020), to classify and map the extent of the main habitats present. The survey utilises the UK Hab Professional edition, mapping primary habitats to Level 4 (where possible) to identify the 47 UK Biodiversity Action Plan Habitats and using a limited subset of secondary codes for 'mosaic' and 'origin' features to differentiate habitat attributes. The plant species nomenclature followed that of Stace (2019). The frequency by which each plant species is present on-Site is assessed and described using the DAFOR Scale (Morris, 1995).

2.1.2 For each habitat, a condition assessment was carried out using criteria detailed in the Biodiversity Metric 3.1 Technical Guidance (Panks *et al*. 2022). The criteria is based on characteristic attributes for each habitat and assigns a value of 'good', 'moderate' or 'poor' depending on the number of criteria met.

2.1.3 During the survey, the presence of, and/or the opportunities for, protected, notable or invasive species within the Site was noted.

2.1.4 Terrestrial habitats on-Site were surveyed for the presence of, or potential for the following protected or notable species:

a. Birds: All species with special reference to key species (such as those on Schedule 1 of the WCA, 1981 (as amended), England Biodiversity Priority Species ('EBP') (previously UK Biodiversity Action Plan ('UKBAP') species) and Birds of Conservation Concern ('BoCC') (Eaton et al., 2015);

b. Amphibians: GCN

c. Reptiles: common lizard *Zootoca vivipara*, adder *Vipera berus*, slow worm *Anguis fragilis* and barred grass snake *Natrix helvetica*;

d. Mammals: bat (all species) and badger *Meles meles*.

e. Aquatic habitats were assessed for their potential to support, and any signs of otter *Lutra lutra*, water vole, *Arvicola amphibius* white clawed crayfish *Austropotamobius pallipes*, GCN, and barred grass snake;

f. Widespread terrestrial and aquatic invasive species listed on Schedule 9 of the WCA 1981 (as amended) were recorded. These are Japanese knotweed *Fallopia japonica*, giant knotweed *Fallopia sachalinensis*, hybrid knotweed *Fallopia baldschuanica*, giant hogweed *Heracleum mantegazzianum*, Himalayan balsam *Impatiens glandulifera*, floating pennywort *Hydrocotyle ranunculoides* and New Zealand pygmyweed *Crassula helmsii*.

3 Baseline Ecological Conditions

3.1 Introduction

3.1.1 The following section describes the baseline ecological conditions at the Site, outlining the results of the field survey findings. Current management is anticipated to remain unchanged up until development and, therefore, baseline conditions at the time of writing are anticipated to reflect those at the commencement of the Proposed Development.

3.1.2 The field survey was undertaken by Joe Earnshaw (Senior Ecologist, Environment Bank) on 15th March 2022. Weather conditions, date and times for when the survey was undertaken are provided in Table 1 below.

Table 1: Field survey weather condition, date and times.

Date	Time	Weather Conditions 4			
		Temp (°C)	Wind Speed (Beaufort scale)	Cloud Cover	Precipitation
15/03/22	08:46 – 11:02	8 - 11	0-1	30%	None

3.2 Habitats

3.2.1 A summary of the habitats recorded on-Site during the UK Hab survey are listed in Table 2 below. Figure 1 shows the location and extent of these habitats, together with detailed target notes (where applicable) for each habitat. Photographs of the Site survey and target notes are located in Appendix A.

Table 2: Summary of habitats recorded within the Site

Habitat Code	Habitat Type/Reference	Description	Target Note (TN)	Area/Length (ha/km)
c1b 19	Temporary grass and clover leys (Photograph 1)	Large field parcels consisting of frequent ryegrass *Lolium sp.*, occasional dock species *Rumex sp*, common nettle *Urtica dioica*, buttercup species *Ranunculus sp.*, dandelion *Taraxacum agg.* and rare creeping thistle *Cirsium arvense*, and clover species *Trifolium sp.*	None	22.06 ha

Habitat Code	Habitat Type/Reference	Description	Target Note (TN)	Area/Length (ha/km)
g4	Modified grassland (Photograph 2)	A small area of modified grassland of a uniform sward height was present within the centre of the Site and comprised frequent ryegrass, occasional Yorkshire fog *holcus lanatus* and rare greater plantain *Plantago major,* cleavers, broadleaved dock *Rumex obtusifolius* and common hogweed *Heracleum sphondylium.*	None	0.05 ha
r1	Pond (Non - Priority Habitat) P1 (Photograph 3 & 4)	A field pond (P1) adjacent to Beech farm to the east of the Site. The banks were largely of bare earth except for occasional crack willow *Salix fragilis* trees and saplings, which were also present within the waterbody. The pond lacked aquatic and emergent vegetation with only rare water cress *Rorippa nasturtium aquaticum.*	None	0.13 ha
r1	Pond (Non - Priority Habitat) P2 (Photograph 5)	A narrow pond in the west of the Site, with deadwood and leaf litter from bankside occasional oak and beech saplings present within the waterbody. The pond lacked any submerged aquatic, emergent or marginal vegetation at the time of survey.	None	0.09 ha
r1	Pond (Non - Priority Habitat) P3 (Photograph 6)	P3 was similar to P2. However, it lacked the deadwood noted within P2.	None	0.07 ha
r1	Pond (Non - Priority Habitat) P4 (Photograph 7)	A small pond along the southern boundary of the Site. The pond lacked any vegetation with the exception of encroaching grassland from adjacent agricultural fields. Its banks were shallow and the water appeared to be of a limited depth.	None	0.03 ha

Habitat Code	Habitat Type/Reference	Description	Target Note (TN)	Area/Length (ha/km)
r1	Pond (Non - Priority Habitat) P5 (Photograph 8)	A small pond in the east of the Site. The pond lacked any vegetation or deadwood. Its banks were shallow and the water appeared to be of a limited depth.	None	0.08 ha
r1	Pond (Non - Priority Habitat) P6 (Photograph 9)	A pond overhung by willow *Salix sp.* With a high degree of leaf litter noted within the pond and appeared to be of low water quality. The pond had a mix of shallow and more steep banks.	None	0.08 ha
h2 47	Hedgerow (native), H1 (Photograph 10)	A hedgerow consisting of frequent hawthorn and rare ash and hazel saplings. The hedge was uniform in height and width (1.6 x 1.1 m) and was intact.	None	0.24 km
h2 47 190	Hedgerow (native with trees), H2 (Photograph 11)	A hedgerow along the western boundary, consisting of frequent hawthorn at a height of 0.8 – 1m x 0.8 m wide. The hedgerow was gappy with rare mature ash and sycamore located along the entire length of the hedgerow.	None	0.45 km
h2 47 191	Hedgerow (native with ditch), H3 (Photograph 12)	A field boundary hedgerow running northwest to southeast in the west of the Site, between two field ponds. The hedgerow was uniform in height and width (1.5 x 1 m) and was intact, and consisted of frequent hawthorn, occasional blackthorn and rare rose species.	None	0.25 km
h2 47	Hedgerow (native with trees), H4 (Photograph 13)	A field boundary hedgerow, stretching southwest to northeast which was uniform in height and width (1.6-1.8 x 1 m) and was intact. The hedgerow consisted of frequent hawthorn, occasional blackthorn, with rare hazel saplings.	None	0.17 km

Habitat Code	Habitat Type/Reference	Description	Target Note (TN)	Area/Length (ha/km)
h2 47 191	Hedgerow (native with ditch), H5 (Photograph 14)	A hedgerow stretching northwest to southeast across the Site in association with an area of modified grassland on its northern side. The hedge was uniform in height and width (1.6 x 1.1 m), was intact and consisted of dominant hawthorn.	None	0.15 km
h2 47	Hedgerow (native), H6 (Photograph 15)	A hedgerow associated with a farm track leading to Beech Farm in the east of the Site. The hedge was uniform in height and width (1.5 x 1 m), consisted of frequent hawthorn and occasional blackthorn and had recently been flailed.	TN1 – Heavy mechanical damage, likely through flailing.	0.14 km
h2 47 191	Hedgerow (native with ditch), H7 (Photograph 16)	A hedgerow stretching west to east across the Site adjacent to a field pond. The hedge was uniform in height and width (1.6 x 1.1m), was intact and consisted of frequent hawthorn and rare blackthorn.	None	0.12 km
h2 47	Hedgerow (native), H8 (Photograph 17)	A hedgerow along the southern boundary of the Site, consisting of frequent hawthorn, occasional blackthorn, and rare rose species and bramble. The hedgerow was uniform in height and width (1.5 x 1 m) and intact.	None	0.8 km
h2 47	Hedgerow (native), H9 (Photograph 18)	A hedgerow, running southwest to northeast in the south of the Site which consisted of frequent hawthorn with occasional blackthorn. The hedge was generally of uniform height and width (1.5 x 1 m), increasing in height towards the northeast to 1.8-2 m and was intact.	None	0.46 km

Habitat Code	Habitat Type/Reference	Description	Target Note (TN)	Area/Length (ha/km)
h2 47	Hedgerow (native), H10 (Photograph 19)	A hedge along a section of the Site's eastern boundary. The hedge was mostly uniform in height and width (1.5 x 1 m) but reduced in height to 1.2 m towards the south. The hedgerow comprised occasional hawthorn and blackthorn.	None	0.25 km

3.3 Baseline Biodiversity Value

Introduction

3.3.1 The assessment was carried out by the EBL using the ecological data gathered during the Site's Ecological Site Walkover.

3.4 Existing Site Value

3.4.1 The existing biodiversity value for each habitat, together with the cumulative value of all habitats is provided in Table 3, with the existing biodiversity value for each hedgerow, together with the cumulative value of all hedgerow features provided in Table 4.

Table 3 Baseline Habitat Values

Biodiversity Metric 3.0 Habitat	Area (ha)	Distinctiveness	Score	Condition	Score	Biodiversity value
Temporary grass and clover ley	22.06	Low	2	N/A - Agricultural	1	44.12
Modified grassland	0.05	Low	2	Poor	1	0.10
Ponds (Non- Priority Habitat)	0.13	Medium	4	Moderate	2	1.04
Ponds (Non- Priority Habitat)	0.09	Medium	4	Moderate	2	0.72
Ponds (Non- Priority Habitat)	0.07	Medium	4	Poor	1	0.28
Ponds (Non- Priority Habitat)	0.03	Medium	4	Poor	1	0.12

Ponds (Non- Priority Habitat)	0.08	Medium	4	Poor	1	0.32
Ponds (Non- Priority Habitat)	0.08	Medium	4	Poor	1	0.32
Total	**22.59**	**-**	**-**	**-**	-	**47.02**

Table 4 Baseline Hedgerow Value

Biodiversity Metric 3.0 Hedgerow Feature	Length (km)	Distinctiveness	Score	Condition	Score	Biodiversity value
Native Species Rich Hedgerow	0.24	Medium	4	Poor	1	0.96
Native Species Rich Hedgerow	0.25	Medium	4	Poor	1	1.00
Native Hedgerow with trees	0.32	Medium	4	Poor	1	1.28
Native Hedgerow with trees	0.13	Medium	4	Poor	1	0.52
Native Species Rich Hedgerow - Associated with bank or ditch	0.25	High	6	Poor	1	1.50
Native Species Rich Hedgerow with trees	0.17	High	6	Poor	1	1.02
Native Species Rich Hedgerow - Associated with bank or ditch	0.15	High	6	Poor	1	0.90
Native Species Rich Hedgerow	0.14	Medium	4	Poor	1	0.56
Native Species Rich Hedgerow - Associated with bank or ditch	0.12	High	6	Poor	1	0.72
Native Species Rich Hedgerow	0.8	Medium	4	Poor	1	3.20
Native Species Rich Hedgerow	0.46	Medium	4	Poor	1	1.84
Total	**3.03**	**-**	**-**	**-**	**-**	**13.5**

3.5 Protected and Notable Species

Amphibians

3.5.1 The Site contains six ponds, with a number of off-Site ponds situated within a 500 m radius of the Site boundary. Whilst the majority of the ponds on-Site recorded waterfowl present, had poor water quality, lacked submerged aquatic and emergent vegetation, the ponds provide some suitable aquatic breeding habitat for amphibian species.

3.5.2 The on-Site hedgerows and off-Site woodland (and scrub) also provide good quality terrestrial habitat for amphibians, as well as connectivity to suitable alternative aquatic and terrestrial habitat off-Site. Whilst no active searches were carried out during the surveys, common frog *Rana temporaria* spawn was observed within P1 (See Figure 1).

Bats

3.5.3 The off-Site woodland supports a number of mature trees, many of which have suitable features for roosting bats such as broken limbs, flaking bark, rot holes or dead trees which may contain a combination of these features. Whilst the majority of these trees were located within the woodland belt, the trees located within the hedgerow on the western Site boundary may also offer opportunities for bats, however, a full ground inspection was not possible at the time of the survey due to dense ivy cover which may have obscured any features.

3.5.4 The hedgerow network, ponds and trees (within the off-Site woodland and hedgerow) were considered to provide suitable foraging and commuting opportunities for bats, with the woodland providing a commuting link to suitable foraging and commuting habitat further off-Site to the northeast of the Site.

Birds

3.5.5 Incidental sighting of the following bird species was recorded on-Site during the survey:

a. Blackbird *Turdus merula*;
b. Blue tit *Cyanistes caeruleus*;
c. Canada goose *Branta canadensis*;
d. Dunnock *Prunella modularis*;
e. Goosander *Mergus merganser;*
f. Great tit *Parus major*;
g. Greylag goose *Anser anser;*
h. Long-tailed tit *Aegithalos caudatus*;
i. Mallard *Anas platyrhynchos*;
j. Nuthatch *Sitta europaea*;
k. Pochard *Aythya farina*;
l. Robin *Erithacus rubecula*;
m. Skylark *Alauda arvensis*; and
n. Treecreeper *Certhia familiaris.*

3.5.6 The Site supported foraging and nesting potential for birds amongst the hedgerows and scattered trees. The hedgerows on-Site supported evidence of annual trimming and depending on timing of works may limit hedgerow fruiting and therefore their value to foraging bird species.

3.5.7 The larger fields in the south also offer potential for ground nesting birds such as skylark and lapwing, with further suitable habitat present in the surrounding area. The Site visit was undertaken following a period of wet weather, however, no substantial areas of surface water were present on the Site suggesting the Site is well drained, limiting its potential to support large numbers of overwintering waders. The location of the Site adjacent to the urban area of Pensby will further limit the use of the western fields due to disturbance. An established Public Right of Way ('PRoW'), footpath ref: FP25 (as shown in Wirral's Public Rights of Way online map) bisects the eastern fields, however, there remains the potential for the larger fields in the southeast to provide some foraging opportunities for wintering wildfowl. Several greylag geese were observed adjacent to pond 1 during the survey, however, these are likely to be feral birds.

Invertebrates

3.5.8 The majority of the Site provides limited opportunities for invertebrates lacking in structural and floristic diversity. However, the field ponds and hedgerows provide the niche habitats that could support an average invertebrate assemblage.

Mammals (Terrestrial)

3.5.9 The agricultural fields and grassland may provide limited foraging opportunities for badger. The off-Site woodland (including scrub) provides foraging opportunities for badgers locally. Whilst no signs of badger (setts, footprints, snuffle holes and/or latrines) were recorded during the survey. The steep embankments leading down to the beck within the off-Site woodland are heavily scrub (bramble) covered and provide suitable sett building habitat.

3.5.10 The off-Site woodland provides foraging and hibernation opportunities for hedgehog. Given the Site's poor hedgerow condition and substantial gaps at their base, the hedgerows are limited in providing suitable hedgehog habitat.

Mammals (Aquatic)

3.5.11 The ditches on-Site were considered unsuitable for water vole lacking grassed banks, and a suitable depth of water along their lengths.

3.5.12 No other protected or notable species were identified at the time of the survey.

3.6 Invasive Non-native Species (INNS)

Plants

3.6.1 No INNS plant species were recorded on-Site at the time of the survey.

Animals

3.6.2 Six Canada geese were recorded foraging around a field pond (P1), which subsequently flew off to the east. Canada Goose is listed on Schedule 9 Part 1 of the Wildlife and Countryside Act 1981 (As amended).

4 Baseline Net Gain Assessment

4.1.1 The purpose of the SANG is to provide an amenity area for local residents that is close by, easily accessible, safe and attractive where they can enjoy spending time walking in nature with their families and dogs. Given this, there will be a minimal need for hard landscaping to facilitate the proposals, however, there will also be an impact on the type of habitats proposed for the Site and their target condition due to the increased trampling and nutrient input that will inevitably occur from the increased public use of the Site. However, there remains the potential to add to the biodiversity of the Site whilst creating an attractive place for local people to enjoy. Most notably by gapping up and increasing the species diversity within the current extensive network of hedgerows across the Site.

4.1.2 It is proposed that all habitats of value are to be retained and enhanced. This is to include the enhancement of the existing temporary grass and clover leys, modified grassland, ponds and hedgerows. It is known that the SANG is to include 3.25 km of new footpaths, 400 m of existing farm track and 150 m of existing Public Footpath and that the new network of footpaths will provide a variety of routes and loops with distance options of between 0.5 km and over 3 km. In addition, new access points and a carparking area will also be provided (See Drawing 1).

4.1.3 To facilitate creation of the carpark and footpath network, there will be a loss of low distinctiveness habitat (temporary grass and clover leys).

Table 5: Summary value of baseline habitat biodiversity value and loss, prior to creation and enhancement.

Biodiversity Metric 3.0 Existing Habitat	Retained		Enhanced		Lost	
	Area (Ha)	Unit	Area (Ha)	Unit	Area (Ha)	Unit
Temporary grass and clover leys	0.00	0.00	19.74	39.48	2.32	4.64
Modified grassland	0.00	0.00	0.05	0.10	0.00	0.00
Ponds (Non- Priority Habitat)	0.00	0.00	0.13	1.04	0.00	0.00
Ponds (Non- Priority Habitat)	0.00	0.00	0.09	0.72	0.00	0.00
Ponds (Non- Priority Habitat)	0.00	0.00	0.07	0.28	0.00	0.00
Ponds (Non- Priority Habitat)	0.00	0.00	0.03	0.12	0.00	0.00
Ponds (Non- Priority Habitat)	0.00	0.00	0.08	0.32	0.00	0.00

Ponds (Non- Priority Habitat)	0.00	0.00	0.08	0.32	0.00	0.00
Total	**0.00**	**0.00**	**20.27**	**42.38**	**2.32**	**4.64**

4.1.4 The results of the assessment indicate that a total of 4.64 BU for habitats are to be lost as a result of the Proposed Development, with 0.00 BU retained and 42.38 BU generated through enhancement (Table 5).

Table 6: Summary value of baseline hedgerow biodiversity value and loss, prior to creation and enhancement.

Biodiversity Metric 3.0 Existing Hedgerow Feature	Retained		Enhanced		Lost	
	Length (km)	unit	Length (km)	unit	Length (km)	Unit
Native Species Rich Hedgerow	0.00	0.00	0.24	0.96	0.00	0.00
Native Species Rich Hedgerow	0.00	0.00	0.2	0.80	0.05	0.20
Native Hedgerow with trees	0.00	0.00	0.27	1.08	0.05	0.20
Native Hedgerow with trees	0.00	0.00	0.13	0.52	0.00	0.00
Native Species Rich Hedgerow - Associated with bank or ditch	0.00	0.00	0.25	1.50	0.00	0.00
Native Species Rich Hedgerow with trees	0.00	0.00	0.17	1.02	0.00	0.00
Native Species Rich Hedgerow - Associated with bank or ditch	0.00	0.00	0.15	0.90	0.00	0.00
Native Species Rich Hedgerow	0.00	0.00	0.09	0.36	0.05	0.20

Native Species Rich Hedgerow - Associated with bank or ditch	0.00	0.00	0.07	0.42	0.05	0.30
Native Species Rich Hedgerow	0.00	0.00	0.75	3.00	0.05	0.20
Native Species Rich Hedgerow	0.00	0.00	0.46	1.84	0.00	0.00
Total	**0**	**0**	**2.78**	**12.40**	**0.25**	**1.10**

4.1.5 The results of the assessment indicate that a total of 1.1 BU for hedgerows are to be lost as a result of the Proposed Development, with 0 BU retained and 12.4 BU generated through enhancement (Table 6).

5 Ecological Constraints

5.1 Habitat Protection

5.1.1 The off-Site lowland mixed broad-leaved woodland is identified as a Habitat of Principal Importance in England and is a priority habitat in the Wirral Biodiversity Action Plan (Wirral Borough Council, 2005). The mature trees within the woodland and western Site boundary in particular may be of note due to their size and irreplaceability. This habitat will be fenced with additional scrub and grassland planting at the boundaries to create a varied edge to the woodland habitat and to act as a buffer, increasing the resilience of the woodland. The six ponds within the fields may qualify as a priority habitat within the Wirral Biodiversity Action Plan and are to be enhanced as part of the proposals, raising existing poor condition ponds to moderate condition, and moderate condition ponds to good condition.

5.1.2 The Site contains an extensive hedgerow network, providing commuting pathways through the Site and into the wider landscape. However, the current poor condition of the hedgerows limits their ability to support foraging and overwintering species, and these are to be enhanced as part of proposals, raising their condition from poor condition to moderate condition.

5.1.3 All remaining habitats are deemed common and widespread in the local context and limited in their ecological value and potential to support protected and/or notable species.

5.2 Species Protection

Amphibians (including Great Crested Newts)

5.2.1 Given the presence of suitable terrestrial and aquatic habitat to support amphibians in the form of ponds and hedgerows, and frog spawn recorded on-Site. It is probable that common amphibian species are present and therefore could be affected by the SANG creation.

5.2.2 The design of footpath routes avoid impacting on any suitable aquatic and terrestrial habitats. Any works to these habitats are likely to be minimal and temporary in nature, however, there may still remain the potential for harm and an Ecological Method Statement should be produced to ensure all legal requirements with regards to these species are adhered to.

Bats

5.2.3 The off-Site woodland and trees along the western boundary provide roosting opportunities. All bat species and their roosts are afforded protection under European and UK legislation and therefore the presence of roosting bats, and the extent to which they are likely to be affected by the proposed development, must be established to inform the development proposals. If tree removal and/or works are required to facilitate the development, a detailed ground level inspection of all trees within the Site will be required to accurately classify the bat roosting potential at the Site.

5.2.4 No increase in lighting will occur as a result of the development and commuting and foraging habitat will be enhanced as a result of the proposals.

Breeding Birds

5.2.5 The hedgerows and ponds provide suitable nesting habitat for a range of species. In addition, the larger fields may offer nesting potential for ground nesting species such as skylark and lapwing.

5.2.6 Physical loss of suitable nesting habitat will be minimal and limited to the creation of the car parking and footpaths. However, there will be an increase in recreational use which may deter some species from using the Site. Given the availability of further suitable habitat in the surrounding area and the overall increase in suitable nesting habitat proposed there is unlikely to be a significant impact on the local nesting bird population.

5.2.7 All nesting birds are afforded protection under Section 1 of the Wildlife and Countryside Act 1981 (as amended); therefore, any loss of nesting habitat should be undertaken outside the main bird breeding season (March – August inclusive) to avoid conflict with nesting birds. If vegetation clearance is required during this period, additional construction safeguards to ensure compliance with UK legislation for nesting birds will be required and should be incorporated into the Ecological Method Statement.

Wintering Birds

5.2.8 The Site is within 5 km of three European protected sites which are designated for wintering bird and passage species. Given the proximity of the SANG to existing residential areas and small field sizes the majority of the Site is considered sub-optimal for these species. However, the larger fields in the southeast may provide suitable habitat and birds may, therefore, be displaced by increased recreational pressure. Given the proposals to enhance the wetland resource at the Site it is not thought that the increase in recreational use will have a significant effect on any wintering birds that may occasionally use the Site.

Terrestrial Mammals

5.2.9 The Site holds the potential to support commuting and foraging badger. Areas within the off-Site woodland sections adjacent to the stream in which the steep sided embankments may support sett building opportunities. Whilst no field evidence of this species was recorded on or off-Site during the survey, their presence cannot be discounted. Given the availability of suitable connecting habitat to the northeast and south of the Site, and the dispersal ability of the badger, it is possible that the species may utilise the Site at least intermittently. In addition, the Site likely supports hedgehog in similar habitats and commuting and foraging behaviour.

5.2.10 Works are to be minimal and unlikely to impact on these species, however, if required measures to safeguards these animals (e.g. covering excavations or providing mammal ladders) should be incorporated into an Ecological Method Statement to ensure their protection.

6 Suitability of the Site as SANG

6.1 Need for SANG

6.1.1 A shadow Habitats Regulations Assessment (HRA) Stage 1 Screening has been undertaken of the eight phase 1 developments which identified a potential impact pathway on the Dee Estuary Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar, as a

result of increased disturbance on the qualifying species from increased visitor numbers, especially dog walkers, in combination with other plans and projects. As such, a Stage 2 Appropriate Assessment was required to assess potential mitigation measures which would provide alternative recreational opportunities for local residents.

6.1.2 The shadow Appropriate Assessments for the phase 1 developments has proposed a suite of mitigation measures to ensure no adverse effect on the protected Site from increased recreational pressure, including provision of on-site amenity areas, and a network of new and upgraded foot path and cycle routes across the Leverhulme Estate provided as part of the wider Leverhulme Vision.

6.1.3 In addition, the current Site is proposed as SANG to provide a bespoke area of open space where residents of both the new developments and existing residents can use for exercise, dog walking and general recreational activities.

6.2 SANG as Mitigation

6.2.1 The concept of 'Suitable Alternative Natural Greenspace' (SANG) was originally given to greenspace developed to offset recreational impacts on the Thames Basin Heaths SPA and refers to space that is 'of a quality and type suitable to be used as avoidance within the Thames Basin Heaths Planning Zone'[1].

6.2.2 SANG are intended to provide avoidance measures for the potential impact of residential development on a National Site Network (NSN) site by preventing an increase in visitor pressure on the site. The effectiveness of SANG as mitigation depends upon the location and design. They must be such that the SANG is more attractive than the NSN site to users of the kind that currently visit the SPA. The guidance provided by Natural England, although aimed at the Thames Basin Heaths SPA is suitable to be used to inform SANG creation to offset other NSN sites including the Dee Estuary SPA, SAC and Ramsar. The following advice on SANG location and creation is taken from the SANG Guidance document[2]:

Location

SANG may be created from:

- Existing open space of SANG quality with no existing public access or limited public access, which for the purposes of mitigation could be made fully accessible to the public;
- Existing open space, which is already accessible, but which could be changed in character so that it is more attractive to the specific group of visitors who might otherwise visit the protected site; and
- Land in other uses which could be converted into SANG.

6.2.3 Sites of high nature conservation value which are likely to be damaged by increased visitor numbers should be avoided.

Delivery

6.2.4 SANG should be delivered in advance of any associated residential development; and

[1] Natural England (2021), Guidelines for Creation of Suitable Alternative Natural Greenspace (SANG).
[2] Natural England (2021), Guidelines for Creation of Suitable Alternative Natural Greenspace (SANG).

6.2.5 They should be funded in perpetuity.

Quality

Must haves

- For all sites larger than 4ha there must be adequate parking for visitors, unless the site is intended for local use, i.e. within easy walking distance (400m) of the developments linked to it. The amount of car parking space should be determined by the anticipated use of the site and reflect the visitor catchment of both the SANG and the SPA;
- Possible to complete a circular walk of 2.3-2.5km around the SANG;
- Car parks must be easily and safely accessible by car and should be clearly sign posted;
- The accessibility of the site must include access points appropriate for the visitor use the SANG is intended to cater for;
- The SANG must have a safe route of access on foot from the nearest car park and/or footpath/s;
- All SANG with car parks must have a circular walk which starts and finishes at the car park;
- SANG must be designed so that they are perceived to be safe by users; they must not have tree and scrub cover along parts of the walking routes;
- Paths must be easily used and well maintained but most should remain unsurfaced to avoid the site becoming too urban in feel;
- SANG must be perceived as semi-natural spaces with little intrusion of artificial structures, except in the immediate vicinity of car parks. Visually sensitive way-markers and some benches are acceptable;
- All SANG larger than 12 ha must aim to provide a variety of habitats for users to experience;
- Access within the SANG must be largely unrestricted with plenty of space provided where it is possible for dogs to exercise freely and safely off lead; and
- SANG must be free from unpleasant intrusions (e.g. sewage treatment works smells etc).

Should haves

- SANG should be clearly sign-posted or advertised in some way;
- SANG should have leaflets and/or websites advertising their location to potential users. It would be desirable for social media to be used as well, with the goal of reducing paper use. Although a leaflet for a new home is desirable.

Desirable

- It would be desirable for an owner to be able to take dogs from the car park to the SANG safely off the lead;
- Where possible it is desirable to choose sites with a gently undulating topography for SANG;
- It is desirable for access points to have signage outlining the layout of the SANG and the routes available to visitors;
- It is desirable that SANG provide a naturalistic space with areas of open (non-wooded) countryside and areas of dense and scattered trees and shrubs. The provision of open water is encouraged and desirable on sites. However large areas of open water cannot count towards capacity;
- Where possible it is desirable to have a focal point such as a viewpoint, monument etc within the SANG;

6.2.6 WBC as part of Liverpool City Region (LCR) and West Lancashire Council are in the process of developing a strategic Recreation Mitigation Strategy (RMS) to enable the local authorities to meet their legal duties with regards to the NSN. However, the RMS is not due to be published until June 2023 and in February 2022 WBC published an interim guidance note[3] providing their advice on avoidance and mitigation of potential adverse impacts from increased recreational pressure. Appendix 3 of the guidance provides additional bespoke advice for creation of SANG within the Wirral. SANG should:

- Be in a location where it will divert visitors, especially dog walkers, away from sections of SPA which are sensitive to additional human disturbance and where a significant increase in visitors due to the increase in potential housing development is anticipated;
- Be located where it will attract visitors who would otherwise have gone to those sections of the Estuary;
- Be in a location where a SANG would be acceptable in terms of planning policy and traffic generation;
- Have views of the Estuary which are not too distant or include a sizeable water feature;
- Dogs are welcome and the majority of the sites are suitable for safe off-lead dog exercise; and
- Dog waste bins are planned/ provided.

Proposed SANG

6.2.7 A precautionary increase of 1038 new homes is expected as a result of the eight phase 1 developments, should they all be built at the maximum proposed housing density. Applying the national average household size of 2.4, and assuming 100 % of the occupants are new to the area as opposed to relocating from within the surrounding area, this equates to a population increase of 2491 people. Based on current SANG guidance[4] of 8 ha of greenspace per 1000 people approximately 19.93 ha of SANG will be required to offset the predicted population increase.

6.2.8 The proposed SANG is currently agricultural land of low ecological value. Access to the Site is limited and comprises an existing footpath which crosses the Site north to south within the east of the Site.

6.2.9 The location of the SANG is within walking distance of four of the eight sites and within an 11 minute drive of the remaining four. A summary of the driving and walking distances and times to the SANG from the proposed developments can be seen below in Table 5 and figure 2.

Table 5: Travel time and distance from the proposed developments to the SANG

Site	Distance to SANG (km)	Driving Time (minutes)	Walking Time (minutes)
Site A) Land east of Glenwood Drive, Irby	2.7	5	34

[3] WBC (2022), Information and Guidance Note: Interim Approach to Avoid and Mitigate Recreation Pressure in Wirral ECC27.

[4] Guidelines for the Creation of Suitable Alternative Natural Greenspace (SANG), Natural England, 2021

Site	Distance to SANG (km)	Driving Time (minutes)	Walking Time (minutes)
Site B) Land east of Dale View Close, north of Gills Lane, Pensby	1.2	2	15
Site C) Land east of Thorncroft Drive, north of Gills Lane, Pensby	1.1	2	13
Site D) Land west of Barnston Road, north of Gills Lane, Pensby	1	1	11
Site E) Land at Milner Road and Barnston Road, Heswall	1.3	2	16
Site F) Land west of Raby Hall, Raby Hall Road, Raby Mere	7.7	11	95
Site G) Land east of Raby Hall, Raby Hall Road, Raby Mere	7.7	11	95
Site H) Land east of Rigby Drive, Greasby	3.5	9	70

6.2.10 In addition, the location of the SANG is well served by public transport routes to the east and west from Barnston Road and Pensby Road. From Barnston Road, the 73, 607, 649 and 702 bus routes all stop at the farm immediately adjacent to the proposed access. From the west, the 472 Q bus route runs along Pensby Road, and stops at Belmont Drive, around 120m from the proposed western site entrance.

6.2.11 The proposed SANG is 22.6 ha providing 3.25 km of new footpaths, 400 m of existing farm track and 150 m of existing Public Footpath and the new network of footpaths will provide a variety of routes and loops with distance options of between 0.5 km and over 3 km that will connect into further walks in the surrounding area provided as part of the wider Leverhulme Vision (Drawing 2) and existing Wirral footpath routes.

6.2.12 The Site will be accessible on-foot and via public transport, with various entrance points located around the boundary, and by car and bicycle as parking for up to 23 cars and 10 bicycles will be provided within the southeast of the site. A suitable landscaping strategy has been developed which includes suitable signage and interpretation and will provide a safe, attractive alternative place for both new residents and the existing population of the Wirral to enjoy both with and without their dogs.

6.2.13 Although located away from the coast the Site will contain a variety of habitats including wildflower meadow, wetland, hedgerows and trees and its location adjacent to the town of Pensby, with a population of approximately 6,900 (2001 census) and itself a conurbation of the town of Heswall, is also likely to attract existing residents into the Site (Figure 2).

6.2.14 The site will be widely signposted to ensure the wider community is aware of its location, purpose and how to access it and will be managed in perpetuity (minimum of 80 years as per Natural England Guidance) by Leverhulme Estates.To ensure the SANG is achieving its function in attracting visitors away from the coast a program of monitoring will be designed and implemented, which will include installing foot traffic counters at entrances to the SANG, including at the car park and the footpath entrance on Pensby Road, which should be reported annually to the Wirral Borough Council. Baseline data will be collected from existing footpaths crossing the Site to inform a baseline assessment prior to occupation of the Proposed Development.

6.2.15 Annual expected visitor numbers will be agreed with WBC and measures put in place to address any shortfall in visitor numbers in the unlikely event that this occurs. Measures could include additional promotion of the site, or payment into the future RMS, in the form of Strategic Access Management and Monitoring (SAMM) contributions.

6.2.16 In addition, an information pack will be produced and issued to each new resident. Each pack will contain information about the SANG and other local walks and recreational activities in the area. The leaflets will include information on the designated sites and how to enjoy them responsibly including taking litter home, not disturbing plants, animals or their habitat, using sustainable transport, responsible dog walking and sticking to defined footpaths.

Existing Greenspace Provision

6.2.17 Most of the freely accessible greenspaces within the area where dogs can be walked off lead are small and are usually associated with other recreational activities such as sports pitches and play areas that can cause conflict with off lead dogs. These include Ridgewood Park and Irby Park. Larger areas where more substantial walks, that provide a variety of habitats and vistas, can be undertaken are located at Wirral Country Park, Royden Park, Arrowe Country Park and Eastham Country Park and whilst parking is provided there is a charge.

6.2.18 Within the interim guidance note[5] WBC recognise that there is limited scope to provide additional new greenspace within the short to medium term (approximately 5 years) and that funding to offset increased recreational pressure would be directed to enhancing existing greenspace infrastructure such as Arrowe Park.

6.2.19 In the long term additional greenspace will be required to mitigate the planned increase in population, the proposed SANG provides this additional new greenspace that is currently lacking across the Wirral.

[5]WBC (2022), Information and Guidance Note: Interim Approach to Avoid and Mitigate Recreation Pressure in Wirral ECC27.

7 Conclusions and Recommendations

Woodland

7.1.1 Eight woodland copses are to be created throughout the Site ranging in size from 0.02 ha to 0.63 ha. The majority of the newly planted woodland is to run along the northern Site boundary. This acting to provide a buffer to the existing off-Site woodland to the north and increase the biodiversity value of the Site, for which it is currently lacking whilst providing additional attractive habitats for users of the SANG.

7.1.2 The newly planted woodland is to include the following elements:

a. A range of UK native tree species including black alder *Alnus glutinosa,* silver birch *Betula pendula, Corylus avellana,* hazel *Crataegus monogyna, beech Fagus sylvatica,* blackthorn *Prunus spinosa* and English oak *Quercus robur.*
b. Woodland edges are to be planted with species rich grasslands to provide a buffer to the woodlands whilst providing a soft edge;
c. To contend with expected tree loss due to grazing by wildlife (rabbit, deer etc) and standard tree mortality. Woodland planting must include over-planting by one third the preferred final tree number; or
d. Additional planting undertaken two years after initial tree planting.

Ponds

7.1.3 The creation of the SANG is to provide alternative recreational space for local people during the wintering bird season, who would otherwise travel to the coast. It is neither possible, nor necessary, to replicate the coastal habitats being offset. However, by providing access to previously inaccessible waterbodies that are to be enhanced and large open views as part of the SANG design, is likely to attract local residents to the Site.

7.1.4 Additional waterbodies should be considered within the southeast of the Site and could have wildlife viewing hides/ screens associated with them providing an additional recreational resource and provide habitat for local wildfowl and wetland birds.

Grassland

7.1.5 The grassland on-Site is under intensive agricultural management and it is proposed to enhance the existing grassland to create neutral grassland.

7.1.6 The grassland will be brought under an appropriate management regime including:

a. Increase diversity of the sward by oversowing with a suitable seed mix (suitable ground preparation works will need to be undertaken prior to sowing);
b. Introduce a suitable grazing and/or cutting regime with ; and
c. Reduce large stands of undesirable species by hand pulling or treatment with an appropriate herbicide.

7.1.7 With the above management prescriptions it is considered that the grassland will be able to be uplifted from a Low distinctiveness habitat to a Medium distinctiveness habitat, neutral grassland.

However, given the proposed recreational use of the Site a target condition of poor is considered achievable.

Hedgerows and Trees

7.1.8 As well as providing a link to the coastal habitats through providing access to open waterbodies, it is also recommended that the existing habitats on-Site are enhanced, adding to the diversity of experience of local residents and increasing the winter interest at the Site.

7.1.9 The hedgerows should be underplanted with a range of native shrub and tree species providing nectar, seeds and fruit for local invertebrates, mammals and birds, however, these should also provide a resource for the local community and comprise nut and berry producing species including hazel, *Malus* sylvestris crab apple, bird cherry *Prunus padus*, blackthorn, pear *Pyrus communis*, elder *Sambucus nigra*, blackberry, damson *Prunus domestica subsp insititia* etc.

7.1.10 New hedge planting should also be considered around any new car parking areas.

Summary of Net Impacts

7.1.11 Tables 7 and 8 below summarise the biodiversity unit value of the SANG together with the unit value of any biodiversity impacts or on-Site habitat and hedgerow creation/enhancement proposals. This shows that on balance, the proposed development would result in a net gain of **+42.18 habitat BU** and a net gain of **+17.75 hedgerow BU**, which is equivalent to a biodiversity **net gain of +89.71%** and **+131.49% BU**, respectively.

Table 7: Summary biodiversity impact assessment results for habitats

	Biodiversity units
Existing Site habitat biodiversity value	47.02
Value of gross habitat biodiversity loss	4.64
Value of on-Site habitat compensation	89.2
Net habitat biodiversity balance	**+42.18**

7.1.12 Table 8 shows the net balance of hedgerows on-Site.

Table 8 Summary biodiversity impact assessment results for hedgerows

	Biodiversity units
Existing Site biodiversity value	13.50
Value of gross biodiversity loss	1.1
Value of on-Site compensation	31.25
Net hedgerow biodiversity balance	**+17.75**

7.1.13 It is not considered that there will be any significant impact on protected and notable habitats and species given the works proposed, with any residual impacts of the construction phase of works incorporated into an Ecological Method Statement. The recommended enhancement measures should provide both an attractive recreation area for local people as an alternative to visiting the coastal habitats whilst enhancing the Site for biodiversity. By increasing the species diversity within the habitats on-Site, increased foraging, breeding and sheltering habitat will be provided for local species, with the low intensity grazing providing a diversity of structure. The enhanced hedgerow network and tree planting will also provide increased and more robust connectivity with the surrounding area, enabling species to move through the landscape.

SANG

7.1.14 The Site is within walking distance of the existing urban areas of Heswall, Pensby and Thingwall (Figure 2) and will attract residents from these areas that may otherwise have visited the coastal protected sites.

7.1.15 Whilst the SANG is within a fifteen minute walk, and therefore easily accessible to, four of the Sites, it's location adjacent to existing residential areas will encourage the existing population to utilise the SANG, whom might otherwise have travelled to the coast. The SANG will be attractive to people wanting easy access to open space for daily walks both alone and with their dogs in their neighbourhood rather than travelling to the coast. Circular walks of differing lengths will provide varied walks for local people, depending on abilities and inclination, rather than backtracking or having to find a different route back home, as is the case with linear routes such as those at the coast. The routes will take the walker through a range of different habitats including woodland, wetland and wildflower grassland, which although different from those at the coast will provide an equally attractive local space connected to nature. In addition, for those visitors wanting a linear walk, there is the opportunity to either access the wider footpath network across the Wirral from the SANG, or incorporate the SANG into a longer journey. The variety of entrances and exits around the Site boundary, free parking, interpretation and waymarking will ensure the Site is easy to access and will encourage the local population to use the Site.

7.1.16 To ensure the SANG is successful a package of promotional material including, information leaflets, waymarking and signposting informing both existing and new residents to the presence of the SANG and its purpose will be provided. Management of the SANG will also be key to its success ensuring visitors enjoy their visits, with access points, car parks and footpaths maintained in good condition, and free of litter.

7.1.17 A summary of how the SANG meets the Natural England Guidance is provided in Table 6 below:

7.1.18 Table 6: Summary of Compliance with SANG Guidance

Stipulation specified by the *Guidelines for Creation of Suitable Alternative Natural Greenspace (SANG), August 2021*	**Feature as complied with in the proposal**
"SANG may be created from: • existing open space of SANG quality with no existing public access or limited public access, which for the purposes of mitigation could be made fully accessible to the public…"	The SANG area is currently in agricultural use with public access limited to the formal footpath which crosses the site. New public access will be provided across the site, including through the creation of new entrances in convenient locations for neighbouring communities.
"The identification of SANG should seek to avoid sites of high nature conservation value which are likely to be damaged by increased visitor numbers."	The Site area has been specifically drawn to avoid the high value biodiversity area along the bank of Prenton Brook. The remainder of the site has limited ecological value at present which will be significantly improved by the proposals, with only very minor collateral losses anticipated.
"SANG continue to need to be delivered in advance of any associated housing stock being occupied. They should also be funded for in perpetuity as is the current process."	These conditions will be secured in the s.106 agreement should permission be granted.
Must haves	
For all sites larger than 4ha there must be adequate parking for visitors, unless the site is intended for local use, i.e. within easy walking distance (400m) of the developments linked to it. The amount of car parking space should be determined by the anticipated use of the site and reflect the visitor catchment of both the SANG and the SPA.	Parking provision for the site has been provided at 23 car parking spaces and at least 20 bicycle parking spaces, consistent with the specification of the document *Suitable Alternative Natural Greenspace: A Best Practice Guide* of 1 space per hectare. Parking is not proposed in excess of the minimum recommended provision as it is intended the modal split for arrivals/departures would be focused on more sustainable forms of travel such as walking, bus travel and cycling. Additional car parking spaces would not encourage this aspiration, but may instead impact negatively on the rural and open nature of the site.
Possible to complete a circular walk of 2.3-2.5km around the SANG.	The SANG design provides for 3.25km of new footpaths, 400m of existing farm track and 150m of existing Public Footpath and that the new network of footpaths will provide a variety of routes and loops with distance options of between 0.5km and over 3km.

Stipulation specified by the *Guidelines for Creation of Suitable Alternative Natural Greenspace (SANG), August 2021*	**Feature as complied with in the proposal**
Car parks must be easily and safely accessible by car and should be clearly sign posted.	Signage and safe access is to be provided from Barnston Road.
The accessibility of the site must include access points appropriate for the visitor use the SANG is intended to cater for.	Access to the parking area will be suitable for pedestrians, bikes and cars. The western access to the site is designed to be suitable for pedestrians and cyclists. All other entrances as well as access points between fields are designed to be accessible by pedestrians only, who are the intended users of the Site.
The SANG must have a safe route of access on foot from the nearest car park and/or footpath/s	The car park is located on site and provides safe access.
All SANG with car parks must have a circular walk which starts and finishes at the car park.	The circular route can be started from and concluded at the parking area.
SANG must be designed so that they are perceived to be safe by users; they must not have tree and scrub cover along parts of the walking routes.	The SANG is designed to feel safe, with areas of open land largely retained by the proposals to encourage passive surveillance. The car park is to be closed and access to the site discouraged overnight.
Paths must be easily used and well maintained but most should remain unsurfaced to avoid the site becoming too urban in feel.	Hoggin paths composed of compactible ground cover rather than hard surfacing will be used throughout the scheme, while maintenance will be underpinned by a comprehensive land management plan secured through the s.106 agreement.
SANG must be perceived as semi-natural spaces with little intrusion of artificial structures, except in the immediate vicinity of car parks. Visually sensitive way-markers and some benches are acceptable.	The scheme does not propose to create any hard landscaping or structures with the exception of the car park and access itself.
All SANG larger than 12 ha must aim to provide a variety of habitats for users to experience.	The SANG, exceeding this threshold, seeks to create and improve various habitats around the site including field ponds, grassland, hedgerows and woodland.

Stipulation specified by the *Guidelines for Creation of Suitable Alternative Natural Greenspace (SANG), August 2021*	**Feature as complied with in the proposal**
Access within the SANG must be largely unrestricted with plenty of space provided where it is possible for dogs to exercise freely and safely off lead.	The location of the SANG and habitats including hedgerow bound fields, will allow for safe off lead walking of dogs across the Site.
SANG must be free from unpleasant intrusions (e.g. sewage treatment works smells etc).	There are no obvious causes of unpleasant intrusions present which could threaten the vitality or viability of the SANG.
Should haves	
SANG should be clearly sign-posted or advertised in some way	This matter will be complied with upon implementation of the scheme.
SANG should have leaflets and/or websites advertising their location to potential users. It would be desirable for social media to be used as well, with the goal of reducing paper use.	The applicant is willing and it is intended that the creation and opening of the SANG be publicised at the appropriate time. An information pack will be produced and issued to each new resident. Each pack will contain information about the SANG and other local walks and recreational activities in the area. The leaflets will also include information on the designated sites and how to enjoy them responsibly including taking litter home, not disturbing plants, animals or their habitat, using sustainable transport, responsible dog walking and sticking to defined footpaths. As an aside, a virtual exhibition has also been undertaken prior to submission.
Desirable	
It would be desirable for an owner to be able to take dogs from the car park to the SANG safely off the lead.	The SANG parking area is located on-Site, meaning dogs will normally be able to access the Site safely from here without the need for leads.
Where possible it is desirable to choose sites with a gently undulating topography for SANG.	The SANG meets this criteria as the land has a gentle gradient falling from north to south.

Stipulation specified by the *Guidelines for Creation of Suitable Alternative Natural Greenspace (SANG), August 2021*	Feature as complied with in the proposal
It is desirable for access points to have signage outlining the layout of the SANG and the routes available to visitors.	Though not detailed at this stage, such signage is intended to form part of the SANG. Interpretation panels will show the range of walks within the Site and how these connect to the wider network. The range of habitats present will also be presented as well as any views across the Site and across the wider landscape.
It is desirable that SANG provide a naturalistic space with areas of open (non-wooded) countryside and areas of dense and scattered trees and shrubs. The provision of open water is encouraged and desirable on sites. However large areas of open water cannot count towards capacity.	Provision is made on Site to bolster or create all of these types of habitat, whist no large bodies of water are included within the site area. Habitats will include wildflower grassland bounded by hedgerows, woodland and scrub planting at the boundaries and ponds.
Where possible it is desirable to have a focal point such as a viewpoint, monument etc within the SANG.	Though there are no notable monuments or focal points within the SANG itself, due in part to the need to retain the landscape character and gentle topography of the land, the SANG does provide new and attractive views of Christ Church in Barnston which is one of the key features of that Conservation Area.

7.1.19 Monitoring of the Site will ensure visitor levels are as expected and any failures to meet agreed targets are addressed.

7.1.20 Overall, the location and design of the SANG are considered to provide a safe and attractive alternative recreational space for local residents to enjoy close to their homes who might otherwise travel to the protected sites, and, in combination with other measures discussed within the individual Phase 1 Development HRAs, is considered suitable to mitigate potential increased recreational pressure on the Dee Estuary SPA, SAC and Ramsar.

Figure 1 – UK Hab Survey

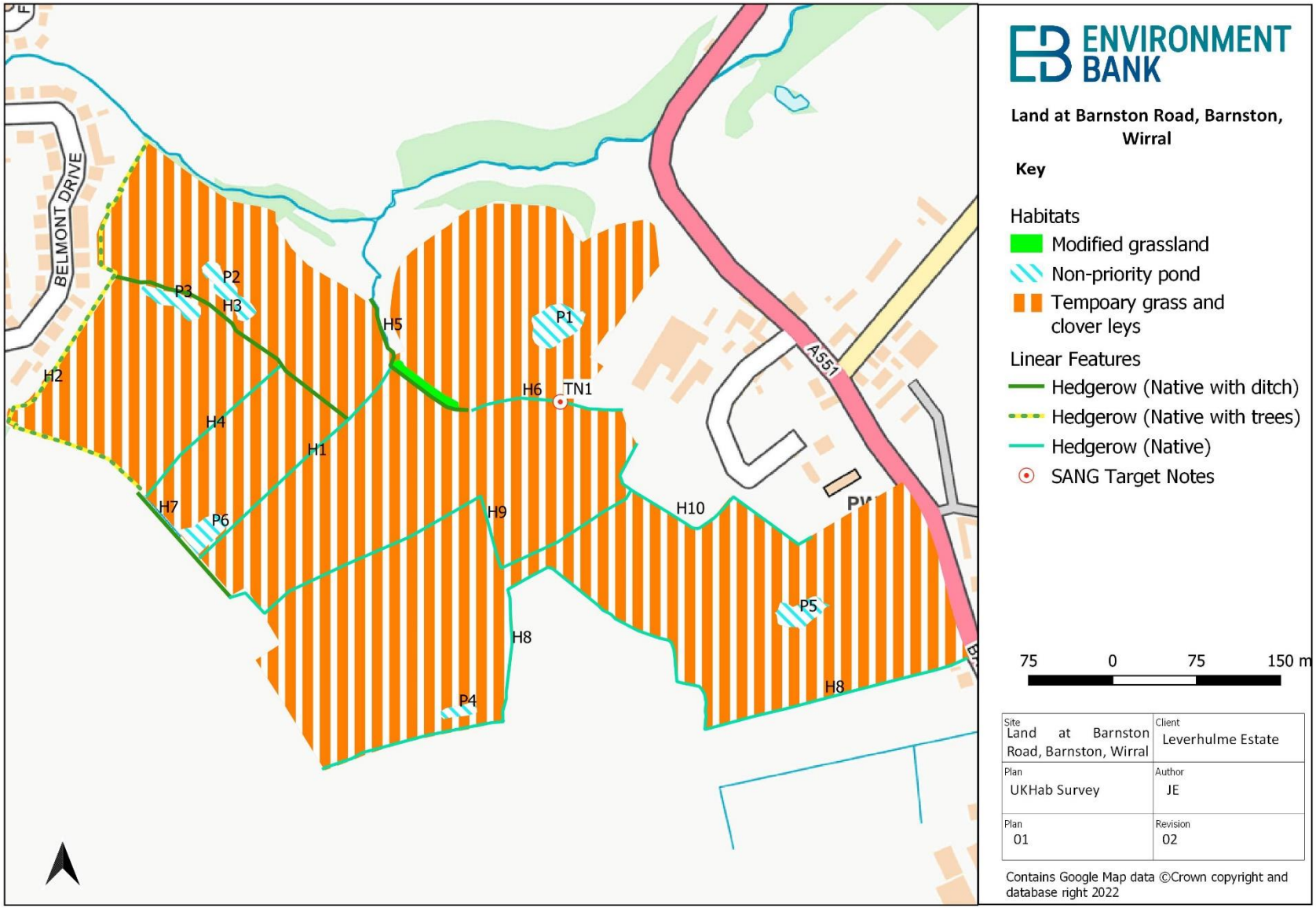
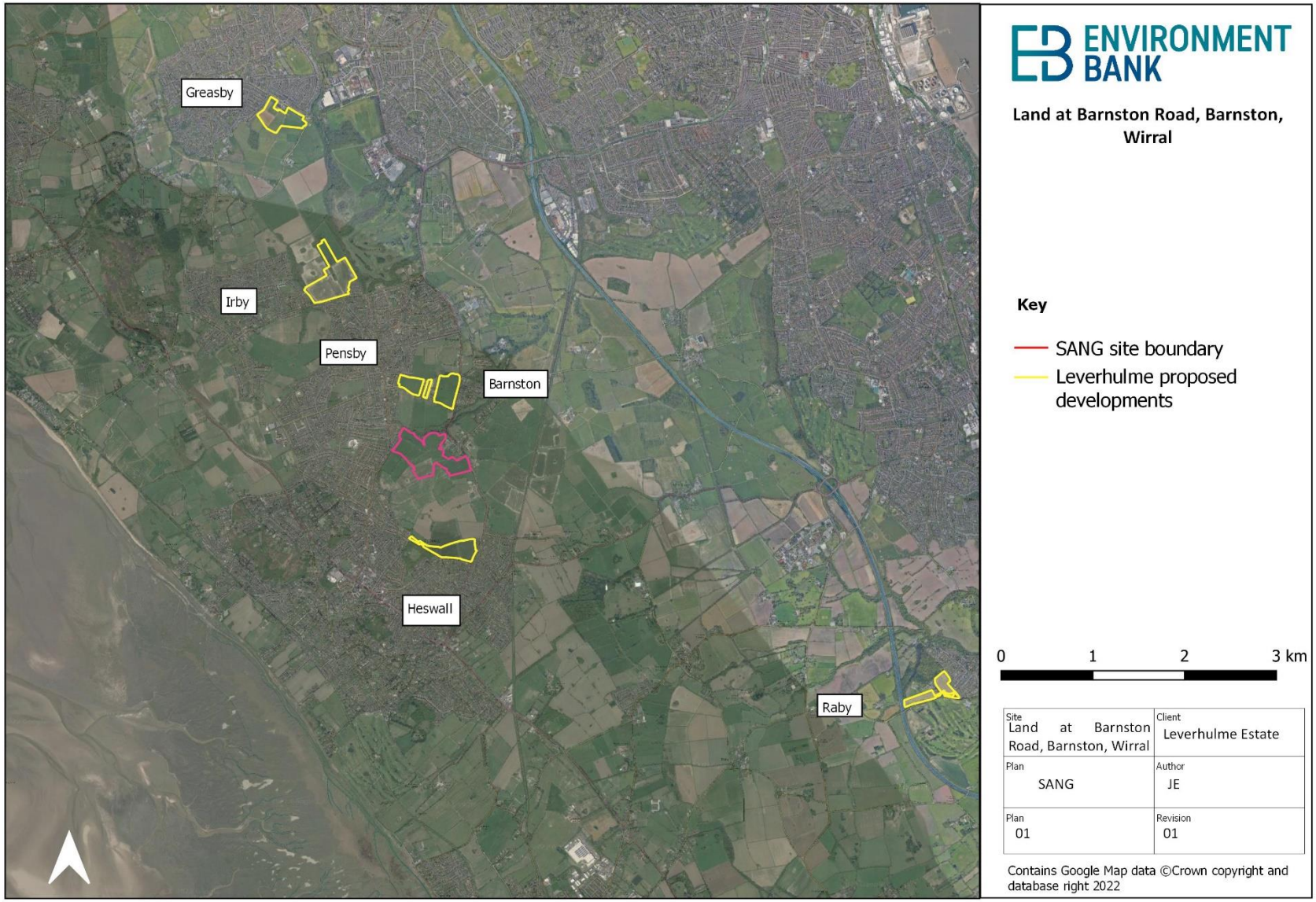

BELMONT DRIVE
A551
P1
P2
P3
P4
P5
P6
H1
H2
H3
H4
H5
H6
H7
H8
H9
H10
TN1
ENVIRONMENT BANK
Land at Barnston Road, Barnston, Wirral
Key
Habitats
Modified grassland
Non-priority pond
Tempoary grass and clover leys
Linear Features
Hedgerow (Native with ditch)
Hedgerow (Native with trees)
Hedgerow (Native)
SANG Target Notes
75 0 75 150 m
Site
Land at Barnston Road, Barnston, Wirral
Client
Leverhulme Estate
Plan
UKHab Survey
Author
JE
Plan
01
Revision
02
Contains Google Map data ©Crown copyright and database right 2022

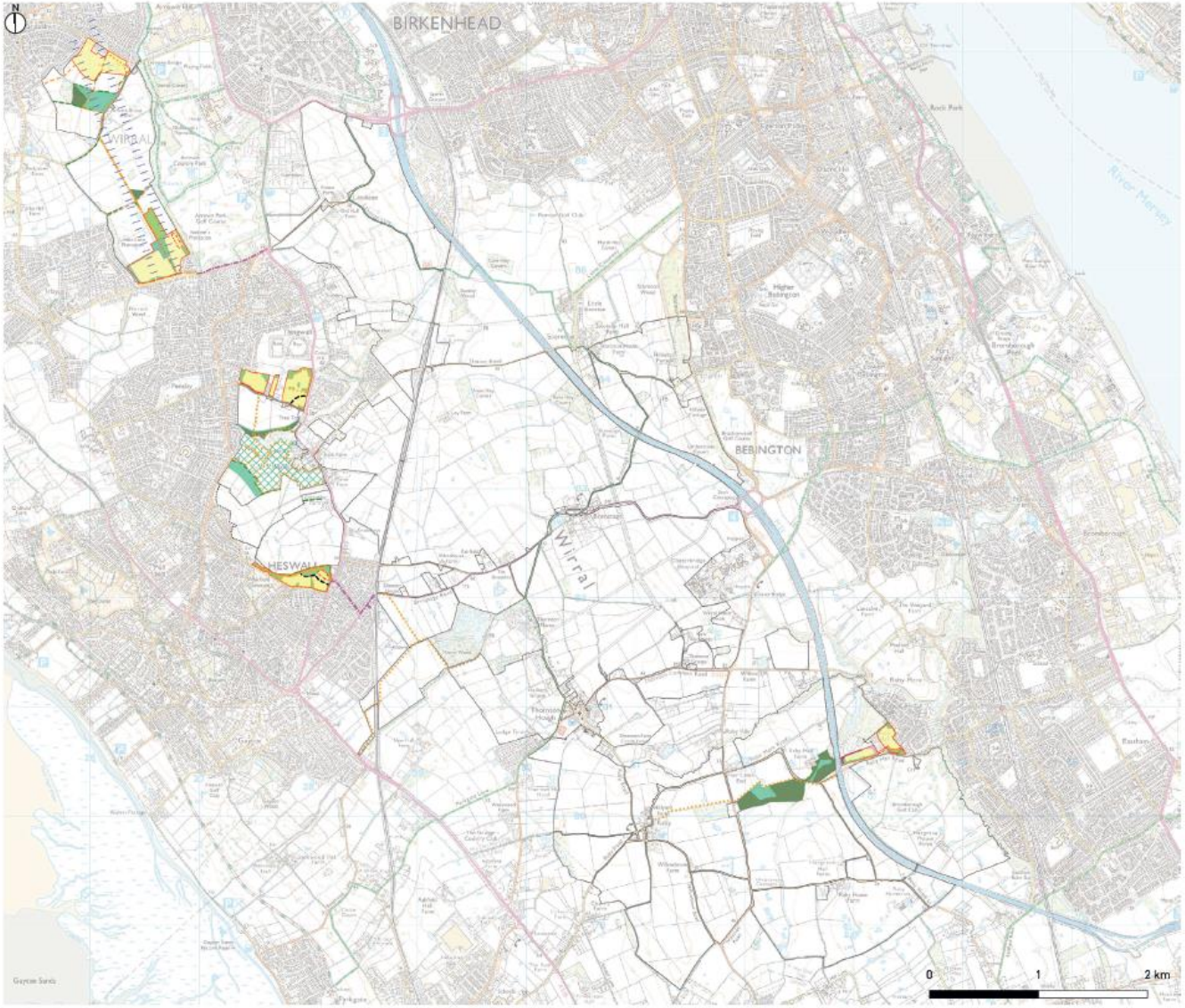
Figure 2 – SANG and Leverhulme Proposed Developments Locations


Greasby
Irby
Pensby
Barnston
Heswall
Raby
ENVIRONMENT BANK
Land at Barnston Road, Barnston, Wirral
Key
SANG site boundary
Leverhulme proposed developments
0
1
2
3 km
Site
Land at Barnston Road, Barnston, Wirral
Client
Leverhulme Estate
Plan
SANG
Author
JE
Plan
01
Revision
01
Contains Google Map data ©Crown copyright and database right 2022

Drawing 1 – Proposed Suitable Alternative Green Space (SANG) Layout

PLANTING SCHEDULES
Native Species Tree Planting
Native Species Woodland Planting
Native Species Hedgerow Planting
NW1
NW2
NW3
NW4
NW5
NW6
NW7
NW8
NW9
NW10
Metres
10 20 30 40 50 60 70 80 90 100
SCALE 1:1250
NB: For Detailed information on furniture, gates and hardworks, see drawing M2738-PA-12-V1 SANG Layout, Detail Location Plan
SANG Layout Including Landscape & Footpath Proposals
M2738-PA-11-V6
Levenshulme
1:1250@A1
04.2022
JT
NF
Planning
BARNES WALKER

Drawing 2 – Leverhulme Vision



Leverhulme ownership
Milner ownership

Existing

Footpath
Bridleway
National and other cycle routes

Proposed

Phase 1 site boundary
New footpath
New bridleway/cycleway
New cycle supergreenway
Enhanced existing footpath
Enhanced existing bridleway / conversion of existing footpath to bridleway
Cycle supergreenway following existing bridleway or footpath route
Linking cycle supergreenway way outside Leverhulme land following existing street
Potential locations for phase 1 self-build / custom build
Enhancement to existing hedgerow
New hedgerow
Public green space including habitat and recreation areas
Sports pitches
Suitable Alternative Natural Greenspace (SANG)
Woodland planting
Non-woodland habitat creation and enhancement
Residential
Community and commercial uses
Access roads
Highway improvements
Acoustic mitigation
View corridor

LEVERHULME ESTATES LIMITED	
PHASE 1 ESTATE-WIDE EMBEDDED AND OFFSITE ENHANCEMENTS	
1815/01 REV D	
MAY 2022	Alan Baxter

Appendix A – Site Photographs

Photograph 1 – Temporary grass and clover leys.

Photograph 2 – Modified grassland strip

Photograph 3 – On-Site Pond (P1)

Photograph 4 – Frog spawn within P1

Photograph 5 – On-Site pond (P2)

Photograph 6 – On-Site pond (P3)

Photograph 7 – On-Site pond (P4)

Photograph 8 – On-Site pond (P5)

Photograph 9 – On-Site pond (P6)

Photograph 10 – On-Site Hedgerow (H1)

Photograph 11 – On-Site Hedgerow (H2)

Photograph 12 – On-Site Hedgerow (H3)

Photograph 13 – On-Site Hedgerow (H4)

Photograph 14 – On-Site Hedgerow (H5)

Photograph 15 – On-Site Hedgerow (H6)

Photograph 16 – On-Site Hedgerow (H7)

Photograph 17 – On-Site Hedgerow (H8)

Photograph 18 – On-Site Hedgerow (H9)

Photograph 19 – On-Site Hedgerow (H10)

Photograph 20 – On-Site Hedgerow (H11)

Photograph 21 – Easternly view across the Site.

Photograph 22 – Western view across the Site towards Pensby Road.

Photograph 23 – Deadwood pile and potential hedgehog hibernacula.

Photograph 24 – Southern off-Site woodland edge, adjacent on-Site field.

Appendix S7: Biodiversity Metric of SANG

SANG at Land at Barnston Road, Barnston, Wirral

Headline Results

Return to results menu

On-site baseline	*Habitat units*	47.02
	Hedgerow units	13.50
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	89.00
	Hedgerow units	31.25
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	89.29%
	Hedgerow units	131.49%
	River units	0.00%
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	41.98
	Hedgerow units	17.75
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	89.29%
	Hedgerow units	131.49%
	River units	0.00%
Trading rules Satisfied?		Yes ✓

SANG at Land at Barnston Road, Barnston, Wirral

A-1 Site Habitat Baseline

Condense / Show Columns | Condense / Show Rows

Main Menu | Instructions

	Habitats and areas			Distinctiveness	Condition	Strategic significance	Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value						Bespoke compensation agreed for unacceptable losses	Comments	
Ref	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Condition	Strategic significance		Total habitat units	Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost		Assessor comments	Reviewer comments
1	Cropland	Temporary grass and clover leys	22.06	Low	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required ≥	44.12	0	19.74	0.00	39.48	2.32	4.64			
2	Grassland	Modified grassland	0.05	Low	Poor	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required ≥	0.10	0	0.05	0.00	0.10	0.00	0.00			
3	Lakes	Ponds (Non- Priority Habitat)	0.13	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	1.04	0	0.13	0.00	1.04	0.00	0.00			
4	Lakes	Ponds (Non- Priority Habitat)	0.09	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	0.72	0	0.09	0.00	0.72	0.00	0.00			
5	Lakes	Ponds (Non- Priority Habitat)	0.07	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	0.28	0	0.07	0.00	0.28	0.00	0.00			
6	Lakes	Ponds (Non- Priority Habitat)	0.03	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	0.12	0	0.03	0.00	0.12	0.00	0.00			
7	Lakes	Ponds (Non- Priority Habitat)	0.08	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	0.32	0	0.08	0.00	0.32	0.00	0.00			
8	Lakes	Ponds (Non- Priority Habitat)	0.08	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	0.32	0	0.08	0.00	0.32	0.00	0.00			
9																	
10																	
11																	
12																	
13																	
		Total habitat area	22.89					47.02	0.00	20.27	0.00	42.38	2.32	4.64			

Total area lost (excluding area of Urban trees and Green walls)	2.32

SANG at Land at Barnston Road, Barnston, Wirral

A-2 Site Habitat Creation

Condense / Show Columns | Condense / Show Rows

Main Menu | Instructions

Post development/ post intervention habitats											
			Distinctiveness	Condition	Strategic significance	Temporal multiplier		Difficulty		Comments	
Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of creation	Habitat units delivered	Assessor comments	Reviewer comments
Woodland and forest	Other woodland; broadleaved	1.56	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	15	Low	7.31		
Urban	**Artificial unvegetated, unsealed surface**	0.62	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	0	Low	0.00		
Urban	**Developed land; sealed surface**	0.14	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	0	Medium	0.00		
	Total habitat area	2.32							7.31		
	Site Area (Excluding area of Urban trees and Green walls)	2.32									

SANG at Land at Barnston Road, Barnston, Wirral

A-3 Site Habitat Enhancement

Condense / Show Columns | Condense / Show Rows

Main Menu | Instructions

Change in broad habitat type detected. Check compliance with guidance.

	Baseline habitats	Post development/ post intervention habitats												Comments	
		Proposed Habitat (Pre-populated but can be overridden)		Change in distinctiveness and condition		Area (hectares)	Distinctiveness	Condition	Strategic significance	Temporal risk multiplier		Difficulty risk multipliers	Habitat units delivered		
Baseline ref	Baseline habitat	Proposed Broad Habitat	Proposed habitat	Distinctiveness change	Condition change				Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of enhancement		Assessor comments	Reviewer comments
1	Cropland - Temporary grass and clover leys	**Grassland**	**Other neutral grassland**	Low - Medium	Lower Distinctiveness Habitat - Poor	19.74	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	1	Low	77.58		
2	Grassland - Modified grassland	**Grassland**	**Other neutral grassland**	Low - Medium	Lower Distinctiveness Habitat - Poor	0.05	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	1	Low	0.20		
3	Lakes - Ponds (Non- Priority Habitat)	**Lakes**	**Ponds (Non- Priority Habitat)**	Medium - Medium	Moderate - Good	0.13	Medium	Good	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	4	Medium	1.34		
4	Lakes - Ponds (Non- Priority Habitat)	**Lakes**	**Ponds (Non- Priority Habitat)**	Medium - Medium	Moderate - Good	0.09	Medium	Good	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	4	Medium	0.93		
5	Lakes - Ponds (Non- Priority Habitat)	**Lakes**	**Ponds (Non- Priority Habitat)**	Medium - Medium	Poor - Moderate	0.07	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	4	Medium	0.44		
6	Lakes - Ponds (Non- Priority Habitat)	**Lakes**	**Ponds (Non- Priority Habitat)**	Medium - Medium	Poor - Moderate	0.03	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	4	Medium	0.19		
7	Lakes - Ponds (Non- Priority Habitat)	**Lakes**	**Ponds (Non- Priority Habitat)**	Medium - Medium	Poor - Moderate	0.08	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	4	Medium	0.51		
8	Lakes - Ponds (Non- Priority Habitat)	**Lakes**	**Ponds (Non- Priority Habitat)**	Medium - Medium	Poor - Moderate	0.08	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	4	Medium	0.51		
						20.37							81.69		

B-1 Site Hedge Baseline

Condense / Show Columns | Condense / Show Rows

Main Menu | Instructions

	UK Habitats - existing habitats			Habitat distinctiveness	Habitat condition	Strategic significance	Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value						Comments	
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Condition	Strategic significance		Total hedgerow units	Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost	Assessor comments	Reviewer comments
1	H1	Native Species Rich Hedgerow	0.24	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	0.96	0	0.24	0.00	0.96	0.00	0.00		
2	H2	Native Species Rich Hedgerow	0.25	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	1.00	0	0.2	0.00	0.80	0.05	0.20		
3	H3	Native Hedgerow with trees	0.32	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	1.28	0	0.27	0.00	1.08	0.05	0.20		
4	H4	Native Hedgerow with trees	0.13	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	0.52	0	0.13	0.00	0.52	0.00	0.00		
5	H5	Native Species Rich Hedgerow - Associated with bank or ditch	0.25	High	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	1.50	0	0.25	0.00	1.50	0.00	0.00		
6	H6	Native Species Rich Hedgerow with trees	0.17	High	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	1.02	0	0.17	0.00	1.02	0.00	0.00		
7	H7	Native Species Rich Hedgerow - Associated with bank or ditch	0.15	High	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	0.90	0	0.15	0.00	0.90	0.00	0.00		
8	H8	Native Species Rich Hedgerow	0.14	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	0.56	0	0.09	0.00	0.36	0.05	0.20		
9	H9	Native Species Rich Hedgerow - Associated with bank or ditch	0.12	High	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	0.72	0	0.07	0.00	0.42	0.05	0.30		
10	H10	Native Species Rich Hedgerow	0.8	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	3.20	0	0.75	0.00	3.00	0.05	0.20		
11	H11	Native Species Rich Hedgerow	0.46	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Like for like or better	1.84	0	0.46	0.00	1.84	0.00	0.00		
12																
13																
14																
15																
16																
			3.03					13.50	0.00	2.78	0.00	12.40	0.25	1.10		

B-2 Site Hedge Creation

Condense / Show Columns | Condense / Show Rows

Main Menu | Instructions

		Proposed habitats		Habitat distinctiveness	Habitat condition	Strategic significance	Temporal multiplier		Difficulty risk multipliers	Hedge units delivered	Comments	
Baseline ref	New hedge number	Habitat type	Length (km)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of creation		Assessor comments	Reviewer comments
1	H1	Native Species Rich Hedgerow	0.3	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	2.01		
2	H2	Native Species Rich Hedgerow	0.15	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	1.00		
3	H3	Native Species Rich Hedgerow	0.05	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	0.33		
4	H4	Native Species Rich Hedgerow	0.11	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	0.74		
5	H5	Native Species Rich Hedgerow	0.16	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	1.07		
6	H6	Native Species Rich Hedgerow	0.18	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	1.21		
7	H8	Native Species Rich Hedgerow	0.03	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	0.20		
8												
9												
10												
11												
12												
			0.99							6.56		

SANG at Land at Barnston Road, Barnston, Wirral

B-3 Site Hedge Enhancement

Condense / Show Columns | Condense / Show Rows

Main Menu | Instructions

	Baseline Habitats		Post development/ post intervention habitats											Comments	
			Change in distinctiveness and condition			Distinctiveness	Condition	Strategic significance	Temporal multiplier		Difficulty risk multipliers				
Baseline ref	Baseline habitat	Proposed (Pre-populated but can be overridden)	Distinctiveness movement	Condition movement	Length (km)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of enhancement	Hedge units delivered	Assessor comments	Reviewer comments
1	Native Species Rich Hedgerow	Native Species Rich Hedgerow	Medium - Medium	Poor - Moderate	0.24	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	3	Low	1.82		
2	Native Species Rich Hedgerow	Native Species Rich Hedgerow	Medium - Medium	Poor - Moderate	0.2	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	3	Low	1.52		
3	Native Hedgerow with trees	Native Species Rich Hedgerow with trees	Medium - High	Lower Distinctiveness Habitat - Moderate	0.27	High	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	2.69		
4	Native Hedgerow with trees	Native Species Rich Hedgerow with trees	Medium - High	Lower Distinctiveness Habitat - Moderate	0.13	High	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	1.39		
5	Native Species Rich Hedgerow - Associated with bank or ditch	Native Species Rich Hedgerow - Associated with bank or ditch	High - High	Poor - Moderate	0.25	High	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	3	Low	2.85		
6	Native Species Rich Hedgerow with trees	Native Species Rich Hedgerow with trees	High - High	Poor - Moderate	0.17	High	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	6	Low	1.84		
7	Native Species Rich Hedgerow - Associated with bank or ditch	Native Species Rich Hedgerow - Associated with bank or ditch	High - High	Poor - Moderate	0.15	High	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	3	Low	1.71		
8	Native Species Rich Hedgerow	Native Species Rich Hedgerow	Medium - Medium	Poor - Moderate	0.09	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	3	Low	0.88		
9	Native Species Rich Hedgerow - Associated with bank or ditch	Native Species Rich Hedgerow - Associated with bank or ditch	High - High	Poor - Moderate	0.07	High	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	3	Low	0.80		
10	Native Species Rich Hedgerow	Native Species Rich Hedgerow	Medium - Medium	Poor - Moderate	0.75	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	3	Low	5.70		
11	Native Species Rich Hedgerow	Native Species Rich Hedgerow	Medium - Medium	Poor - Moderate	0.46	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	3	Low	3.49		
					3.78							24.88		

Appendix S8: Design and Access Statement for SANG produced by The Leverhulme Estaste (doc ref 1815-01_DAS_SANGS_V4_LR)

Suitable Alternative Natural Green Space, Barnston Road, Barnston

Design and Access Statement

August 2022

LEVERHULME

Site aerial photo

Suitable Alternative Natural Greenspace
Barnston Road, Barnston
Design and Access Statement

August 2022

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Appendix A: SANG compliance checklist

Alan Baxter

1.0 Introduction

1.1 Introduction

This Design and Access Statement has been prepared on behalf of Leverhulme Estates Limited in support of the full planning application for Suitable Alternative Natural Greenspace, at Barnston Road, Barnston.

The application forms part of Leverhulme's strategic and estate-wide approach to deliver much-needed homes and unlock strategic transport, landscape and biodiversity and economic opportunities for Wirral, as set out in The Leverhulme Vision, April 2020.

The Site is proposed for Suitable Alternative Natural Greenspace (SANG) to be delivered alongside the eight phase 1 development Sites A-H which Leverhulme proposes at the edges of its rural estate.

The Site, currently in agricultural use and designated Green Belt, covers 22.6 hectares of land between Barnston village and the urban area of Pensby.

The SANG will take the form of a managed, rural landscape retaining and enhancing the existing landscape of fields and hedgerows to the west of Barnston. The proposals include 3.25km of new footpaths, 400m of existing farm track and 150m of existing Public Footpath and the new network of footpaths will provide a variety of routes and loops with distance options of between 0.5km and over 3km.

SANG is designated in perpetuity and is an appropriate use for Green Belt. As such the SANG will strengthen the permanent protection of the landscape buffer between Pensby and Barnston, retaining the rural setting of Barnston Conservation Area.

1.2 Scope of the Design and Access Statement

This Design and Access Statement summarises how the existing landscape character and constraints of the Site and its surroundings have been analysed and have informed the proposed design of the SANG.

Chapter 2 summarises the regeneration and planning context for the SANG.

Chapter 3 reviews the characteristics of the Site and its context, and the technical work which has informed the design of the SANG.

Chapter 4 explains the proposals for the Site including access arrangements.

1.3 The need for SANG

A Habitats Regulations Assessment (HRA) undertaken in relation to the eight phase 1 development sites has identified potential for an increase in recreational pressure on the qualifying features of the Dee Estuary Special Area of Conservation (SAC) as a result of the in-combination effects of the phase 1 development Sites A-H.

A suitable mitigation strategy has been developed to offset adverse impacts from increased recreational pressure. This includes the provision of Suitable Alternative Natural Greenspace (SANG) on land owned by Leverhulme, which is the subject of this planning application.

Conditions on the Site A-H planning applications will ensure that the SANG is implemented prior to first occupation of the proposed dwellings.

1.4 Leverhulme

Leverhulme has been part of the fabric of Wirral life for over 130 years. Today, Leverhulme is responsible for the long term, sustainable management of over 2,000 hectares of land at the heart of Wirral, stretching from Heswall and Irby in the west to Bebington in the east.

The landholding includes agricultural land farmed by tenant farmers, footpaths and bridleways, sports and rural leisure facilities and thriving rural enterprises including Brimstage Hall & Courtyard. Leverhulme is the custodian of 69 listed buildings.

Leverhulme is in the unique position of being able to offer land to support Wirral's housing growth targets alongside the provision of the necessary SANG on its Green Belt land.

The SANG is part of a package of proposed environmental and accessibility enhancements that will be delivered on the retained Green Belt within Leverhulme ownership, as compensatory improvements in line with Government guidance, to the major, lasting benefit of Wirral.

The SANG application accompanies eight planning applications for residential development representing phase 1 of Leverhulme's strategic approach, which will deliver homes within the first five years of the Local Plan to assist the Council in meeting its five-year housing land supply target.

Phase 2 Sites are being promoted through the Local Plan process and would be delivered during years 6-15. Longer term, it is likely that there will be a need to provide additional housing growth as part of future Local Plans.

Each phase of development will be matched by environmental, accessibility and transport enhancements across the estate and the provision of the necessary SANG on Leverhulme land to bring benefits for the whole of Wirral.

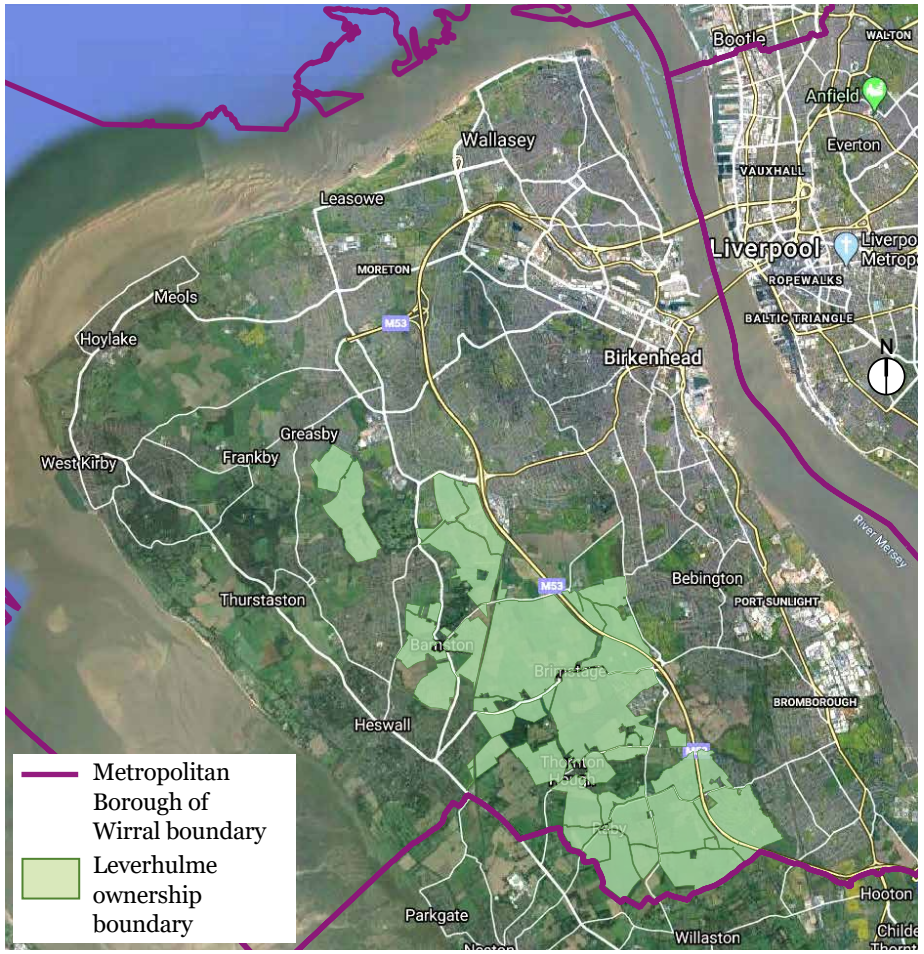


Figure 1: The location of Leverhulme landholding within Wirral Borough

1.5 Leverhulme Vision

It is Leverhulme's aim to ensure that any development of its land will make Wirral a better place for people, both for today and for generations to come. This will be achieved through a strategic, estate-wide approach, which looks outside the red-line boundary of individual Sites to provide sustainable growth alongside significant enhancements to green infrastructure and accessibility.

This estate-wide approach is described in The Leverhulme Vision, April 2020 and summarised below. Figure 2, provides a conceptual, spatial representation of the Vision.

Beautiful homes for Wirral residents

Land at the edge of the rural estate has the potential to offer a highly attractive living environment which complements the urban area; leafy streets with generous gardens and easy access to the rural footpath and cycling network. Leverhulme's commitment to the delivery of beautiful places is described in the Design Charter which accompanies this planning application which recognises the importance placed on good design in the National Planning Policy Framework paragraphs 126-136 and through the establishment of the Building Better, Building Beautiful Commission.

Communities not just homes

Leverhulme seeks to create exemplary neighbourhoods which have vitality, wellbeing and a sense of belonging at their heart and which are recognised as wonderful places to live.

A modern, biodiverse agricultural estate

The vast majority of the landholding will remain agricultural. Farming is having to adapt in response to changing agricultural policy, and the climate and biodiversity needs. Leverhulme has developed an estate-wide green infrastructure plan, including areas identified for SANG and plans to assist the evolution of farming practices and to deliver improved access and net gains in biodiversity which go beyond current Government requirements.

Health and wellbeing

Leverhulme has the ability to increase public access to the rural landscape, including improvements to existing footpaths, new off-road cycleways and footpaths, and the creation of new publicly accessible conservation areas. This includes the creation of Cycle Supergreenways connecting rural and urban Wirral.

Interaction with nature and active leisure are increasingly recognised as being essential to both the mental and physical health of adults and children. This is a real area of opportunity to enhance the quality of life that is on offer for all residents of Wirral.

Connected infrastructure

Leverhulme land can be used to facilitate improved east-west connectivity and relieve localised congestion hotspots. Comprehensively planned development can support improvements to public transport.

Thriving rural economy

The centre of Wirral is home to a number of village communities including Thornton Hough, Raby, Brimstage and Storeton. The future economy and vitality of these villages can, through effective planning, be supported by enhanced connectivity, farm diversification and support for rural and community enterprises.

Leisure and tourism

Leverhulme's vision involves new walking and cycling leisure trails as part of the green infrastructure plan to widen Wirral's appeal to visitors, reveal its heritage and places of interest and support the local economy. As the farming economy evolves there are opportunities for further diversification projects to ensure historic farm buildings have a viable long-term use.

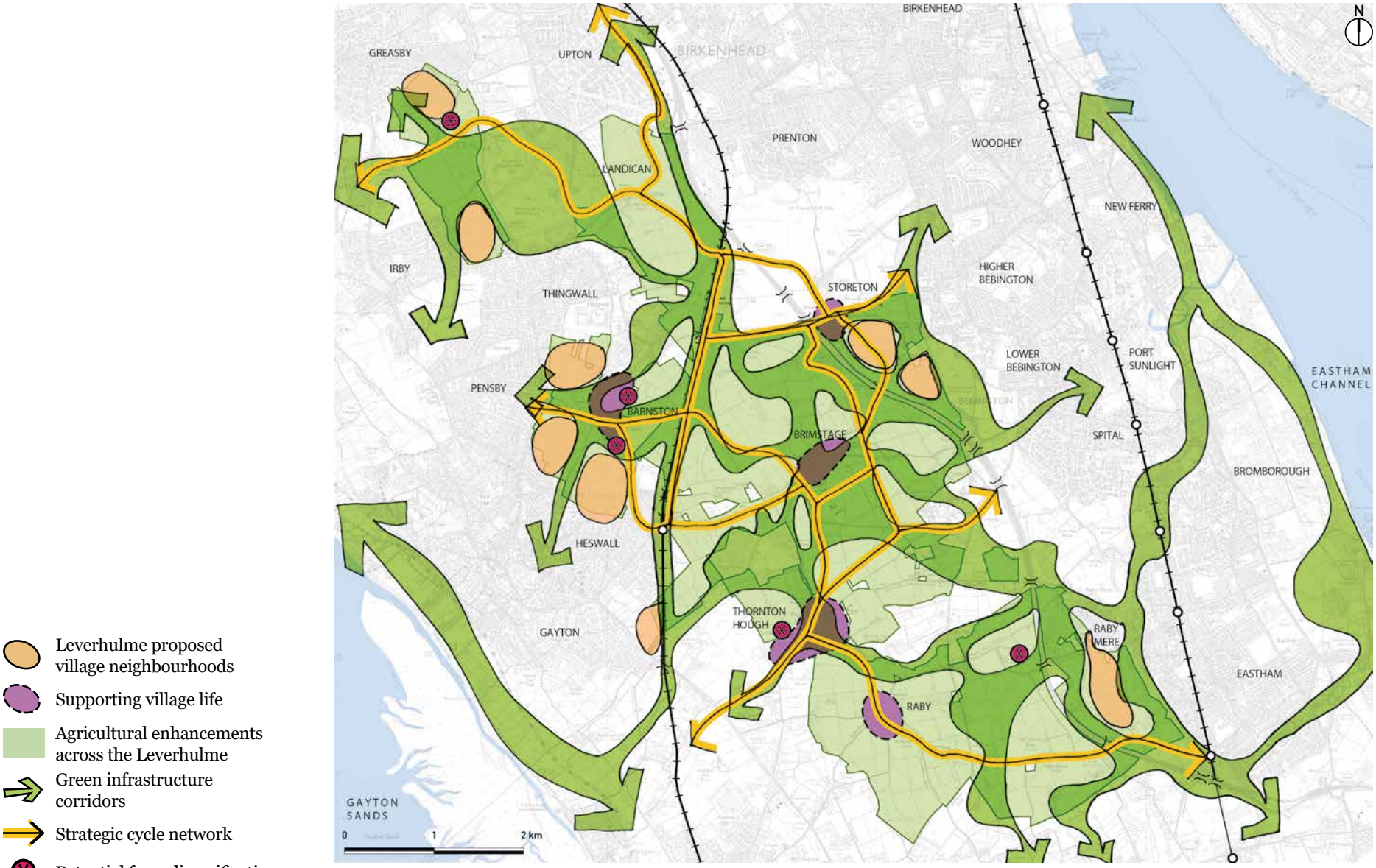


Figure 2: Estate-wide approach

1.6 Site location

The Site covers 22.6 hectares of agricultural land and sits between Pensby Road (B5138) in the west, Barnston Dale in the north, Barnston Road (A551) in the east and fields in the south. It is bordered by the urban area of Pensby to the west and the urban area of Barnston to the east.

The Site has been identified by Leverhulme to provide mitigation in relation to the increased recreational pressure on the qualifying features of the Dee Estuary Special Area of Conservation (SAC) as a result of the in-combination effects of the phase 1 development Sites A-H.

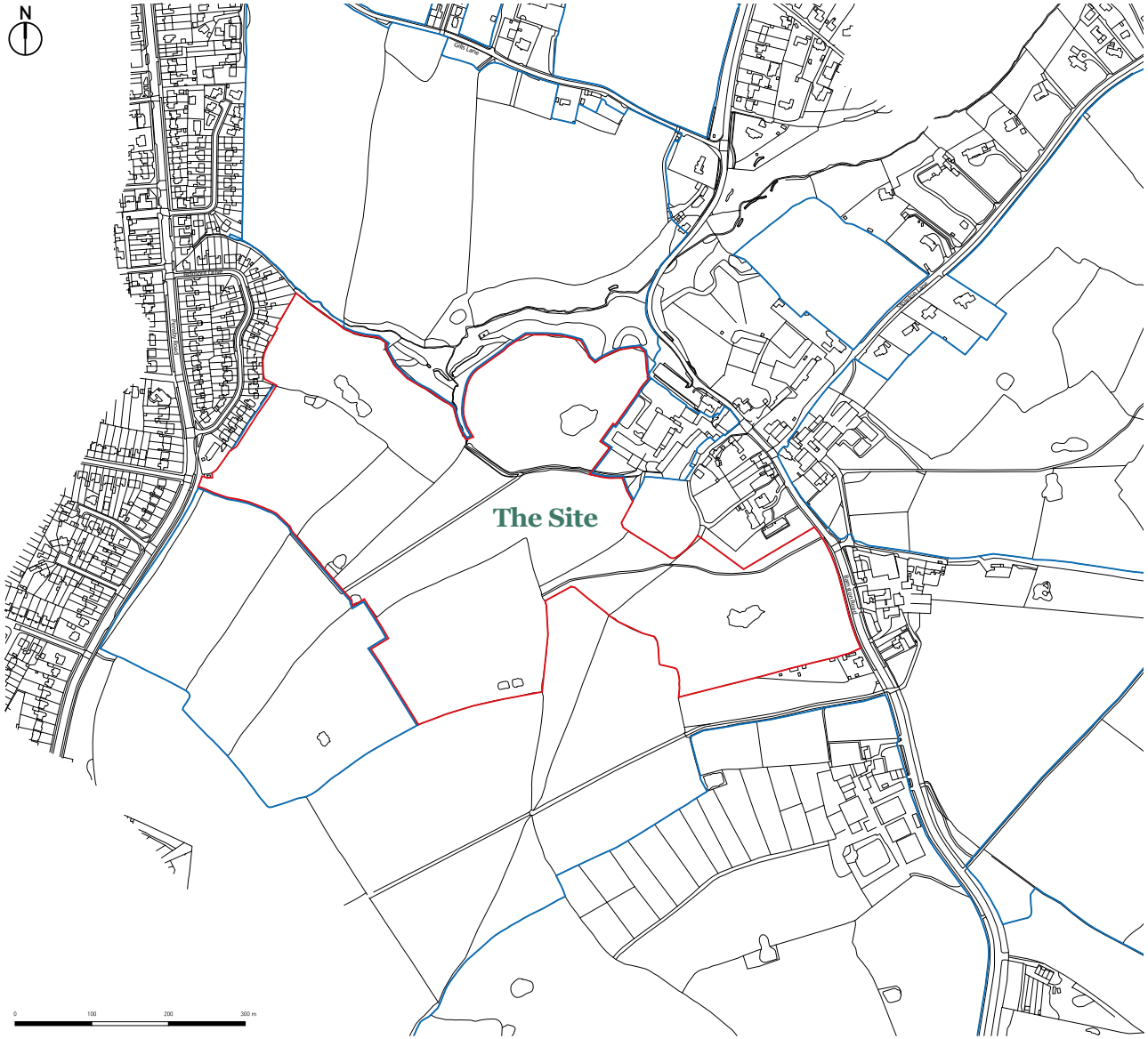


Figure 3: Location plan

1.7 Relationship to Development Sites

The Site's location and accessibility in relation to the development Sites A-H is as follows:

- Site A is situated to the north of Glenwood Drive in Irby; approximately 2km walk/cycle to the SANG via the Pensby Road access, or approximately 3km cycle/drive to the proposed SANG car park off Barnston Road.

- Sites B, C and D are situated to the north of Gills Lane in Pensby; approximately 1 – 1.4km walk/cycle to the SANG via the Pensby Road access, or approximately 1 – 1.4km cycle/drive to the proposed SANG car park off Barnston Road. A footpath connection across Prenton Brook and the rural estate to the north is proposed as part Site B. It will provide a direct link from the SANG to the development sites on Gills Lane.

- Site E is situated to the north of Milner Road in Heswall; approximately 1.8km walk/cycle to the SANG via the Pensby Road access, or approximately 1.3km walk/cycle/drive to the proposed SANG car park off Barnston Road. The most direct pedestrian link from Site E to the SANG is via existing footpath FP25.

- Sites F and G are situated to the north of Raby Hall Road in Raby Mere. At a distance of approximately 8km, prospective residents are unlikely to walk to the proposed SANG; however, the Barnston Road access is situated approximately 25 minutes cycle ride from Sites F and G. The cycle link via Thornton Hough is formed of roads generally conducive to cycling with low vehicle volumes.

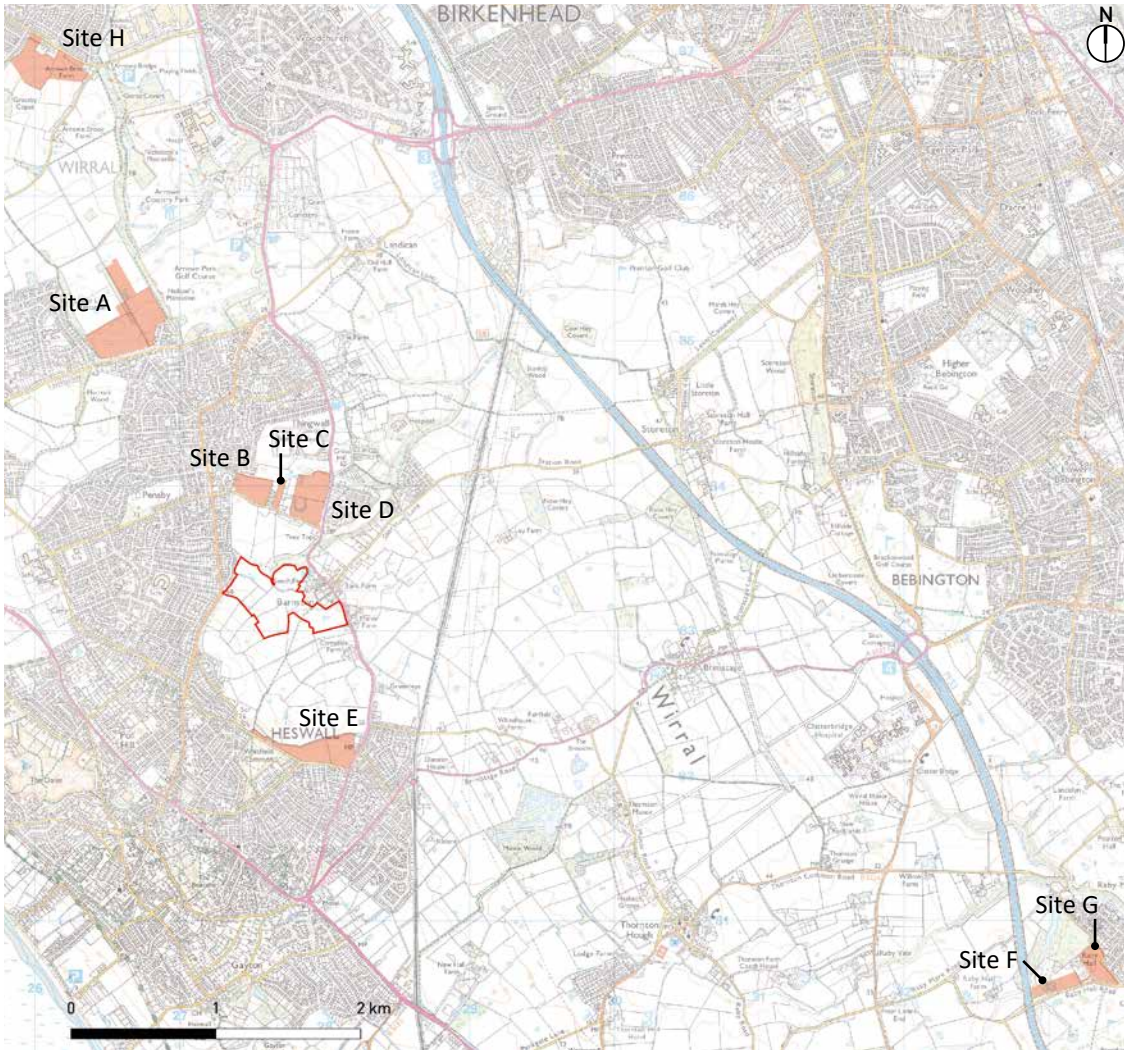


Figure 4: SANG in relation to the location of the development Sites A-H

- Site H is situated to the south of Arrowe Road in Greasby. At a distance of approximately 6km, prospective residents are highly unlikely to walk to the proposed SANG; however, both the Pensby Road and Barnston Road access points are situated approximately 15 minutes cycle ride from Site H. There are instances of on-road and off-road cycle provision present on both cycle links to the SANG.

1.8 Relationship to the surrounding area and existing settlements

The site is currently green fields surrounded by three urban areas. It is located to the east of Pensby urban area, north of Heswall and west of historic Barnston village. It is formally publicly inaccessible land.

The site is located in a semi-rural location which is accessible on foot, by bicycle and by bus. The site may also be accessed via a multi-modal journey from Heswall Railway Station.

The site is in a sustainable location within walking distance from surrounding neighbourhoods and community facilities. The nearest school is Pensby Primary School, which is 350m away from the site. Heswall Primary School is 500 m south of the site, which can be accessed via traffic-free footpath FP25. The nearest pub is The Fox and Hounds which is located some 200m north east.

The proposed SANG will deliver a publicly accessible green space close to local population centres and community infrastructure, including educational, health and social services. It will also provide improved access to the countryside for recreational purposes and a well-maintained link between Pensby and Barnston.

Barnston village

Fox & Hounds Pub

Figure 5: Context

View across the Site from footpath FP73

View of the Site from Barnston Road

Existing field pond

Existing farm track

2.0
Planning

2.1 Planning History

A Planning Statement has been prepared by Strutt & Parker which accompanies the application.

Section 2.0 of the Planning Statement relates to the Site context and planning history.

In this instance, there is no relevant planning history based on a search of Wirral Borough Council's Public Access search facility.

2.2 Relevant planning policy

Section 5.0 of the Planning Statement provides an overview of the relevant local and national planning policies relevant to the application as well as highlighting the existing Development Plan policies which are most important for determining the application. The Planning Statement then provides an analysis of the consistency of the SANG with each Unitary Development Plan policy as well as the National Planning Policy Framework ("NPPF").

In short, the statutory Development Plan for the Wirral comprises:

- The Unitary Development Plan for Wirral (adopted February 2000) ("the UDP"); and
- The Joint Waste Local Plan for Merseyside and Halton (July 2013) ("the Joint Waste Local Plan")

The NPPF and the Council's Supplementary Planning Documents ("SPDs") are also material considerations in the determination of this application.

Reference should be made to the Planning Statement for further details.

2.2.1 SANG policy

Policies NC01, NC1, NC2, NC3 and NC4 are some of the adopted UDP policies of most relevance in this instance. The Conservation of Habitats and Species Regulations 2017 (as amended) (otherwise known as “the Habitat Regulations”) also carry significant weight when determining SANG proposals.

Reference should be made to the Planning Statement and Ecological and SANG Assessment accompanying this application for further details.

2.3 Public and stakeholder engagement

Leverhulme undertook pre-application public and stakeholder consultation which centred around a virtual exhibition, held from Monday 01 August until Monday 15 August 2022. Local residents and stakeholders were informed about the consultation via a letter mailing. Online feedback forms were available as part of the virtual exhibition for attendees to record their views. Those that were unable to get online were able to request for hard copies of the exhibition materials to be posted to them.

Feedback received from consultation is explained in section 4.6.3 ‘Response to public consultation, August 2022’ of this report.

Further details of the pre-application public and stakeholder consultation are provided in the Statement of Community Involvement which accompanies this planning application

3.0
Appraising the site and its context

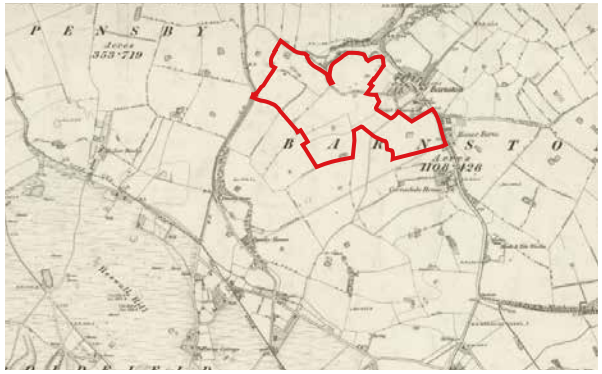
3.1 Historical development of the area

Whilst there has been little documented historically about Barnston or the lives of its inhabitants, the village is likely to have originated as a pre-Norman Conquest settlement to the etymological origins of its name; 'Barnston' from 'Beorn's Farm', placing it as a likely Anglo-Saxon settlement. The distinctive placenames within the Wirral help to construct a settlement narrative that can be linked to a single historical event; that being the expulsion of Scandinavian people from Ireland in the 10th century and their resettlement on the Wirral.

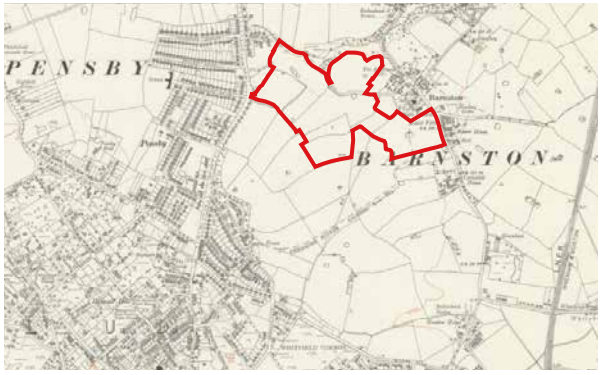
Throughout the medieval (1065-1539 AD) period the Site was very likely part of the agricultural land worked by the inhabitants of Barnston, traces of which can potentially be seen within the shapes of some of the field boundaries within the Site and the remains of ridge-and-furrow earthworks visible within LiDAR data. No medieval heritage assets have been recorded within Barnston Village itself, however there is a recorded earthwork within the Site boundary which may relate to the medieval settlement, possibly comprising a house platform (MME810).

The Site likely remained in agricultural use throughout the post-medieval (1540-1800) period; there are no heritage assets which date to this period. The 1847 Tithe mapping showed that the Site was formerly divided into smaller fields than today, with some field boundaries – particularly those closer to the village – hinting at the remains of a medieval field system, whilst those further to the west of the Site were more regularly shaped, likely the result of the Inclosure Acts of the late 18th and 19th centuries.

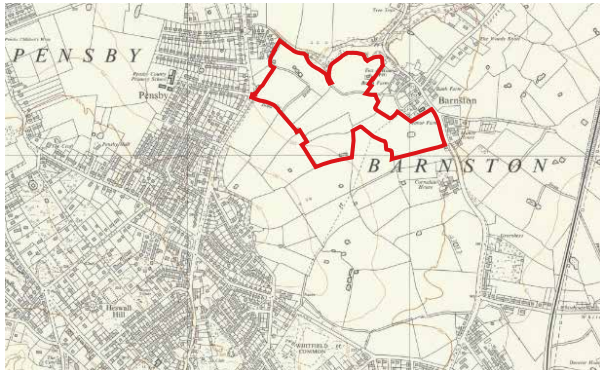
The 1882 OS map shows the shape of Barnston village to be largely the same as can be seen today. Linear ribbon residential development fronting Barnston Road and Storeton Lane running from the centre of the village to the north-east. A number of smaller lanes branch off the main street, which are farm tracks today.



OS map from 1882



OS map from 1940



OS map from 1965

The most significant changes to the surrounding landscape of the site can be seen on the 1940 OS map. Considerable development had occurred along Pensby Road to the west and far south.

The construction boom continued in the latter half of the 20th century with the growth of new residential estates to the north west and north east of the site.

The historic map sequence demonstrates the division of agricultural land within site and that very little change occurred within the red line boundary during this period. Despite residential development around the site, open fields remained in agricultural use and character up to the present day providing separation between historic Barnston village and neighbouring suburban area of Pensby.

3.2 Local character

3.2.1 Landscape character and setting

The application site comprises a series of irregular and rectilinear, small to medium sized pastoral fields, located between Barnston Village to the east and the urban edge of Pensby to the west.

To the north, the incised, wooded valley associated with Prenton Brook/Barnston Dale provides a robust physical and visual buffer from land to the north, whereas to the south, the fields extend circa 1km to Milner Road and Whitfield Lane, beyond which lies the urban area of Heswall. Fields to the south generally become increasingly larger and the level of tree cover within the existing hedgerow boundaries reduces.

Barnston Village and most of the application site are positioned at a level of just above 60m AOD and there is a general rise in the ground levels to the south-west, up to the urban edge of Heswall/Pensby at Downham Road North, where the levels rise to circa 85m AOD. The topography of the area therefore ensures that the settlement edges to the west and south-west have a prominence within the views, that is somewhat moderated by the presence of mature trees.

This is an agricultural landscape that has a historical connection to Barnston Village, however the presence and relative proximity of the adjacent urban areas, primarily to the south and south-west, limit perceived levels of tranquillity and rurality.

The Wirral Landscape Character Assessment places the application site within LCT 4 Lowland Farmland and Estates and within LCA 4a Landican and Thingwall Lowland Farmland and Estates and the assessment identifies the following key characteristics that are considered pertinent to the application site and its landscape context:

- *Scattered field ponds are a characteristic feature often surrounded by wetland trees and shrubs;*

Figure 6: Existing situation

- *Prenton Brook and Arrowe Brook create narrow valleys lined by deciduous woodland which contrast with the surrounding open landscape;*
- *Woodland, much of which is locally designated, is concentrated along watercourses particularly at Barnston Gap, within Arrowe Country Park and on high ground on the edge of surrounding settlements;*
- *Arable and some pasture farmland in small-medium scale regular fields, which become smaller closer to the settlements. Fields are bordered by low hedgerows of variable condition with hedgerow trees; and*
- *Wooded ridgelines form a backdrop to urban development screening it from the wider landscape…*

In addition, Barnston Village is designated as a conservation area (CA), the edges of which abut the application site boundary to the north-east and east. The Barnston Conservation Area Appraisal acknowledges the relationship of the village and the CA, with the adjacent fields, which include those in the application site by stating:

- *Paragraph 3.4.3 - Agricultural land and features are seen throughout the conservation area and are important in setting Barnston apart from the 'urbanisation' of many other historic villages in Wirral. Like Barnston Dale, the agricultural land outside the conservation area is also critical to its setting and visual character and the field pattern is almost identical to those of the Tithe Map of 1846. The open fields around the village form an attractive backdrop for the conservation area and are critical to its continued agricultural use and character. There are many hedgerows and trees within and adjacent to fields, which are important both visually and ecologically. From the village, there also exist views across open fields to rolling hills and attractive groups of trees beyond;*

3.2.2 Landscape sensitivity

The proximity of the application site to Barnston Village, the existing, historic relationship between the fields and the village, the relatively intact hedgerow field boundaries and associated trees that contain a patchwork of small to medium fields and the adjacent woodland within Barnston Dale combine to elevate the sensitivity of the landscape within the application site.

These qualities are acknowledged within the Draft Environmental Sensitivity Study (by LUC) that forms part of the evidence base for the emerging Wirral Local Plan. The document contains a Landscape Sensitivity Assessment which attributes a Moderate to High sensitivity to the agricultural land both within the application site and to its south.

The character of the landscape and its associated sensitivity represent key considerations in the design proposals for the SANG.

3.2.3 Environmental designations

The application site does not contain any environmental designations, however the adjacent Barnston Dale forms a Site of Biological Importance.

3.2.4 Landscape features of the site

The key landscape features of the site include the pastoral fields, mature hedgerow trees, the field hedgerows and field ponds. In some instances, the hedgerows are gappy and there are a limited number of hedgerow trees present and also some of the existing field ponds are overgrown with trees and shrubs, which limits levels of natural light and can thus compromise biodiversity.

3.2.5 Ecology

The Site comprises several irregular shaped fields set to temporary grass and clover leys, bounded by hedgerows and several ponds within the fields across the Site. Several of the hedgerows contain trees ranging in age, with the most notable and mature trees situated within the Site's western boundary hedgerow.

Of the habitats recorded, the hedgerows and field ponds were considered the most ecologically valuable habitats. However, in their current condition their value to local wildlife is limited due to a lack of floral diversity, with gaps present in the hedgerows. With habitat enhancement, increasing the species diversity within the hedgerows and ponds and cutting back invading scrub within the ponds these valuable habitats will provide opportunities for a range of local wildlife. The fields also lacked in floral diversity and these will be enhanced introducing a range of local flora into the sward.

The hedgerows and ponds may provide foraging and/or commuting opportunities for a range of mammals including bats, badger and hedgehog, with the hedgerows creating an extensive commuting pathway through the site and connecting into the wider landscape. Likewise, these habitats may support amphibians during their terrestrial and aquatic phases of their life cycle.

The Site provides foraging and nesting opportunities for birds amongst the hedgerows and scattered trees. Enhancement to the hedgerow network and addition of trees and scrub within the site will increase opportunities for local birds.

3.2.6 Trees and hedgerows

An Arboricultural Survey has been undertaken by Tyler Grange to assess the quality of existing trees and hedgerows within the Site and surrounding area.

There are a number of individuals trees, groups of trees and hedgerows within the Site and at the Site boundaries.

The trees within Barnston Dale woodland (W1) are protected by tree protection orders (TPOs).

Category A trees

Woodland, group of trees and individual trees that are of Category A are the following:

- A linear block of woodland (W1) along the most northern boundary
- Two groups of trees (G18 and G20) to the north west
- A linear block of trees (G13) along Pensby Road
- Four individual trees (T14, T19, T23 and T25) along the south western boundary

Category B trees

There is a group of Category B trees along the north east boundary.

A number of individual trees and groups of trees (G15, G17 and G19) of Category B are scattered in the western part of the site.

Category C trees

A number of Category C trees (low quality and value) are scattered along the track in the centre of the northern part of the Site.

Groups of trees that are of Category C are spread in the western side of the site:

- Three groups of trees (G4, G7 and G28) surround the existing ponds
- A linear block of trees (G5) along the south eastern boundary
- A group of trees (G3) along the western boundary

All existing hedgerows on site and at site boundaries are Category C.

Category A and B trees are to be retained (wherever possible). Other trees and hedgerows are to be retained where appropriate.

Site boundary

Category A - Trees of High Quality and Value

Category B - Trees of Moderate Quality and Value

Category C - Trees of Low Quality and Value

Category U - Trees Recommended for Removal

Root Protection Areas

Trees/Groups/Woodland covered a Tree Preservation Order (TPO)

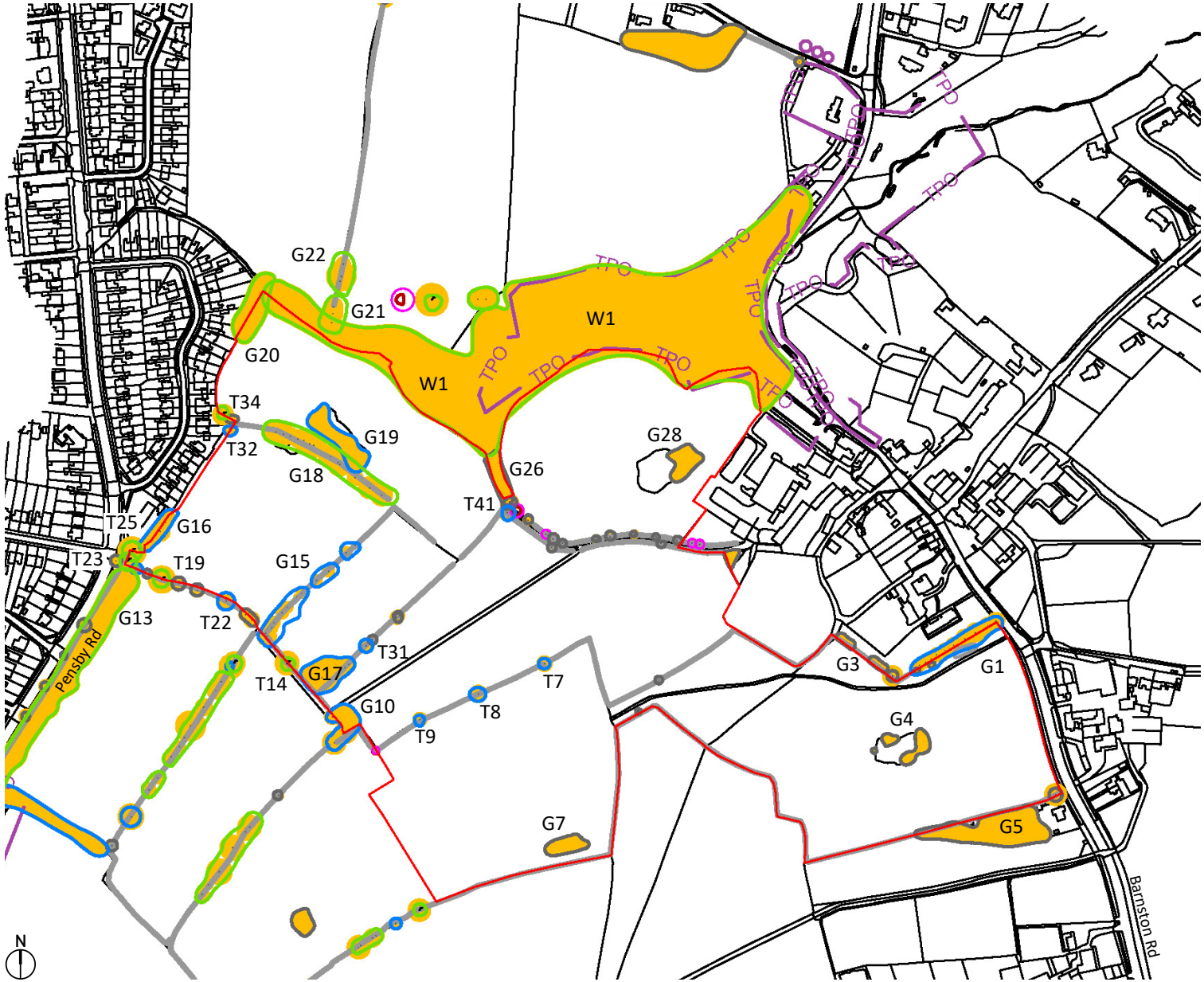


Figure 7: Arboricultural survey

3.3 Heritage assets

3.3.1 Barnston Conservation Area

Barnston Conservation Area borders the Site at several points along its western perimeter. The Conservation Area covers around 6.7ha of Barnston Village and encompasses two distinctive groups of buildings, comprising the old 'core' of domestic buildings to the south of the village and the Church precincts, framed by sandstone buildings forming a loose village square. The majority of the buildings of Barnston reflect typical 19th and 20th century rural life, being generally of either residential or agricultural use, as well as Christ Church and the village hall. There have been few changes to the village from the turn of the 20th century onwards, with the exception of the construction of a few semi-detached houses, a handful of agricultural buildings and the reconstruction of the Fox and Hounds Public House in the early 20th century.

3.3.2 Listed buildings

There are ten listed buildings within the 2km study area, nine of which are Grade II listed and one is listed under Grade II* designation. The closest listed buildings to the Site are Christ Church, located c.20m to the north east and The Beech Farmhouse, c.75m to the east.

Christ Church (1343513) is the only Listed building with the potential to be affected by settings change as a result of the proposals, located to the immediate east of the Site towards the south of Barnston village. The Church is one of two Listed buildings within Barnston Village and was built between 1870-71 by the architect George Edmund Street. The structure is of grey rock-faced stone with ashlar dressings and a red tiled roof, set within a churchyard that wraps around the west, south and east of the building, beyond which views into the Site are again largely unbroken.

Grade II listed Christ Church, within Barnston Conservation Area

3.3.3 Scheduled monuments

There are no Scheduled monuments within proximity to the Site that would be affected by the proposed development.

3.3.4 Archaeological Remains

There is one recorded non-designated heritage asset located within the Site, comprising earthworks including a potential platform, possibly associated with the medieval village of Barnston (MME810). Within the HER record however, it is noted that these remains have been potentially severely damaged by later agricultural activity.

Other potential remains identified as part of the Heritage Assessment that may survive within the Site comprise:

- remains associated with the possible platform to the immediate north of the Site (MME806)
- evidence of marl pitting/localised quarrying activity, identified within the Tithe map and within LiDAR data;
- remains of medieval ridge and furrow agriculture;
- remnant historic field boundary ditches; and
- unknown buried remains.

3.4 Movement context

3.4.1 Pedestrian routes and Public Rights of Way

Public footpath FP25 runs across the Site providing links from Barnston to Heswall. It forms part of the 26 km long Arrowe Park - Parkgate Circular Walk. Footpath F73 allows alternative pedestrian route from footpath FP25 into the heart of Barnston village running between the Beech Farm and residential properties.

Footways along Barnston Road run on both sides of the carriageway and are separated by wide grass verges, however, formal footways do not extend all the way to Heswall in the south. There is currently no designated pedestrian crossing over Barnston Road in the vicinity of the proposed eastern pedestrian access location.

Pavements along Pensby Road run on both sides of the carriageway. Both footways are typically separated from the carriageway by a grass verge. There is currently no designated pedestrian crossing over Pensby Road in the vicinity of the proposed western pedestrian access location.

3.4.2 Cycling

Barnston Road forms part of an on-road cycle route that connects Port Sunlight with Heswall. There are a number of other roads recommended or signed for cycling on the carriageway, for example Pensby Road, Gills Lane and Milner Road. There are also several off-road tracks and bridleways in the vicinity of the Site, providing useful connections north towards Irby, south towards Neston and east towards Bebington.

3.4.3 Public transport

The nearest railway station is Heswall, which is 1.5 km to the south east of the site. Heswall Station provides hourly services between

Bidston and Wrexham Central from Monday to Saturday and two-hourly in the evening and on public holidays. There is a service every 90 minutes each way on Sundays. The station includes a 16-space car park and ramps for train access.

There are two regular bus routes (73 and 472) that serve the area. Bus stops are present outside the Site boundary on Barnston Road and on Pensby Road. The number 73 calls along Barnston Road providing an hourly service Monday – Saturday from Poulton to Heswall. The number 472 calls along Pensby Road running from Liverpool to Heswall and providing an 20min frequency Monday – Saturday, and 30min frequency on Sundays/holidays. More details on public transport are provided in the Transport Assessment.

3.4.4 Road network

The A551 Barnston Road forms part of the eastern site boundary. Barnston Road extends for approximately 4.3km between a roundabout junction with the A540 and Brimstage Road in the south, and a roundabout junction with Thingwall Road East/Torrington Drive and Arrowe Park Road in the north.

In the vicinity of the site, the carriageway is comprised of a single lane two-way road with a width of c.9m. For much of its length, Barnston Road is subject to a 40mph speed limit, however as the road runs through residential areas and passes the Site, the speed limit is reduced to 30mph.

The B5138 Pensby Road extends to the west of the western Site boundary. Pensby Road extends for approximately 3.6km between a priority controlled T-junction with Thingwall Road East in the north, and a signalised junction with the A540 Telegraph Road and The Mount in the south.

In the vicinity of the Site, the carriageway is comprised of a single lane two-way road with a width of c.9m. Elsewhere, the carriageway is generally narrower at c.7m. Pensby Road is subject to a 30mph speed limit.

3.4.5 Site access

The Site currently has three agricultural access points. These are provided from Pensby Road, Beech Farm and Barnston Road. There are also various other formal and informal access points across into surrounding fields.

3.5 Flood risk and drainage

3.5.1 Flood risk

The Flood Risk Assessment undertaken by SLR, finds that the site is identified as being in Flood Zone 1 and is elevated significantly above the nearest Flood Zone 3 boundary associated with Prenton Brook to the north. Even with projected increases in peak river flows, the site is situated in an area of elevated topography with respect to the wider locale and as such, natural flood progression would not advance onto site.

The routing of exceedance flows during extreme events will not change as a result of the proposed development. During periods of heavy rainfall, runoff from saturated ground in the north and west of the Site will flow in accordance with the topographic gradient north east toward the Prenton Brook valley. Any exceedance flow from areas of the Site to the south and east will follow topographical gradients to the east towards lower land east of Barnston Road.

A range of other potential sources of flooding have been assessed and it is concluded that the risk of flooding from groundwater; sewers and water mains; reservoirs, canals and artificial sources; and infrastructure failure is low to negligible at this site.

3.5.2 Existing drainage

Other than field boundary drainage ditches, there are no formal watercourses. Prenton Brook to the north of the Site is the nearest significant watercourse and is classed as a Main River by the Environment Agency. Prenton Brook is fed by a culvert draining surface water from the residential area to the west of the Site boundary and has a limited upstream catchment. Field drains within the central northern part of the Site discharge into a tributary of Prenton Brook which extends towards the central northern part of the Site boundary.

The Site currently comprises agricultural fields and is situated mainly on permeable geology. The permeability of the glacial till deposits and sandstone is currently unknown, especially given the large degree of lithological variation anticipated, but it is likely the majority of rainfall falling on the Site infiltrates to ground. However, during a significant rainfall event, whereby rainfall exceeds the infiltration rate/capacity, runoff from the north and west of the Site will flow in accordance with the topographic gradient north east toward Prenton Brook. Any exceedance flow from areas of the Site to the south and east will follow topographical gradients to the east towards lower land east of Barnston Road.

3.6 Utilities

A Utility Search Report (SLR Ref:406.10133.00007 Version 1) has been prepared by SLR Consulting in April 2022. The report consists of a number of drawings showing approximate position of utilities apparatus known to be in the vicinity of the Site. These include:

- Sewer records
- Water main records
- Gas assets records
- Electrical equipment and network records
- BT (Open Reach) records
- Communication network records

There are no utilities running across the Site. There are a number of services running under the footways and carriageways of Barnston Road and Pensby Road outside the Site boundary including electric cable, water and gas pipes.

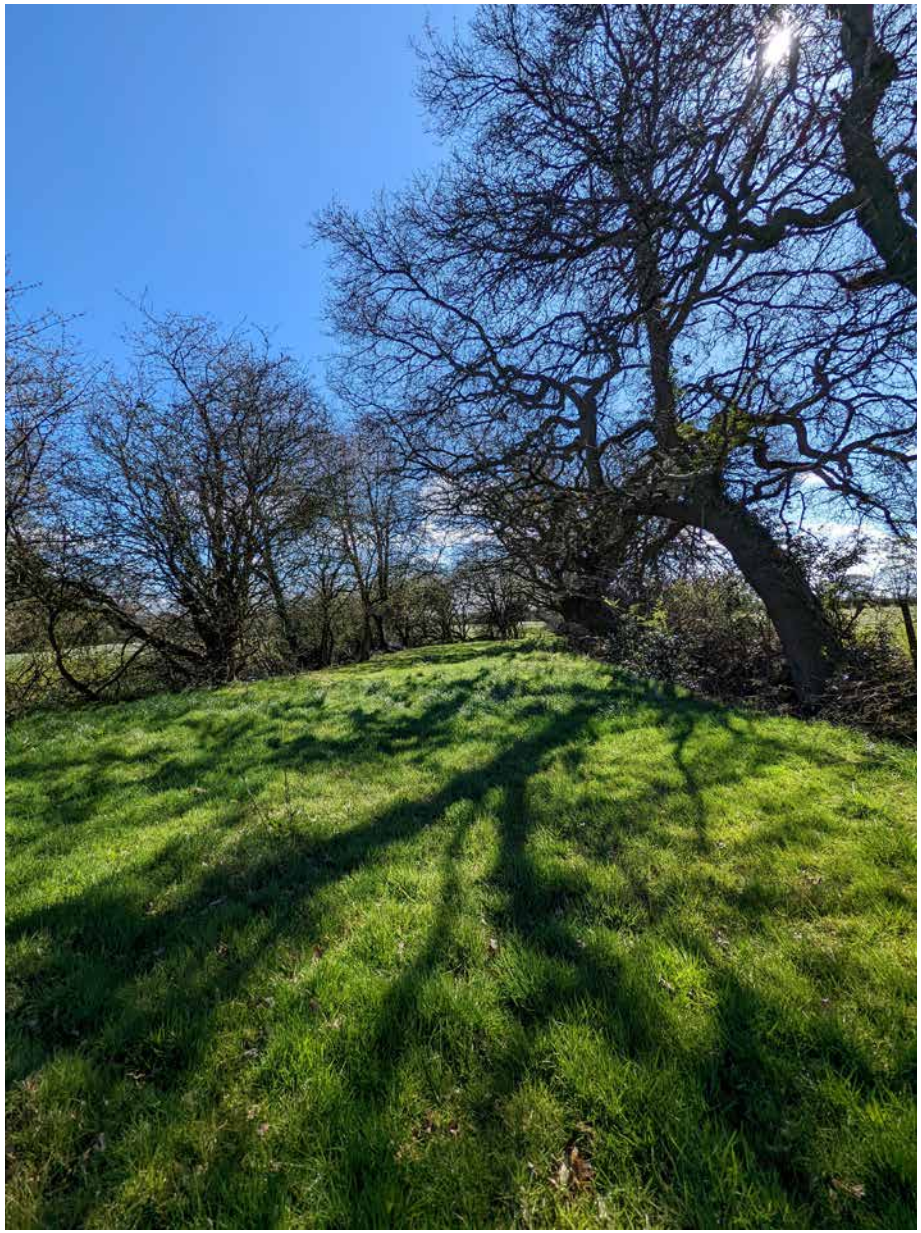
3.7 Summary of constraints and opportunities

The Site is currently in agricultural use and does not have any significant physical constraints that would prevent SANG development.

The design of the proposed scheme has carefully considered the existing character and features of the Site and the surrounding area.

These include:

1. The existing landscape structure including field boundaries, ponds, individual trees and tree groups, hedgerows and woodland habitat will be retained and enhanced.
2. Existing hedgerows at the edges of the Site and at field boundaries will be retained, with small sections removed to create footpath crossings where necessary.
3. A habitat buffer will be provided to the Site of Biological Importance (SBI) at Barnston Dale woodland to encourage increased biodiversity.
4. The setting of the Barnston Conservation Area and Grade II Listed Christ Church will be preserved and the openness of the view to the church will be retained.
5. Existing footpath FP25 will be retained and linked with a new circular walking route.
6. The area to the rear of properties on Belmont Drive will be kept free of development ensuring minimal effects upon their visual amenity.
7. Access to the proposed SANG carpark will be taken from Barnston Road at the southern end of the Site. Removal of a small section (c.11m) of sandstone wall will be required.



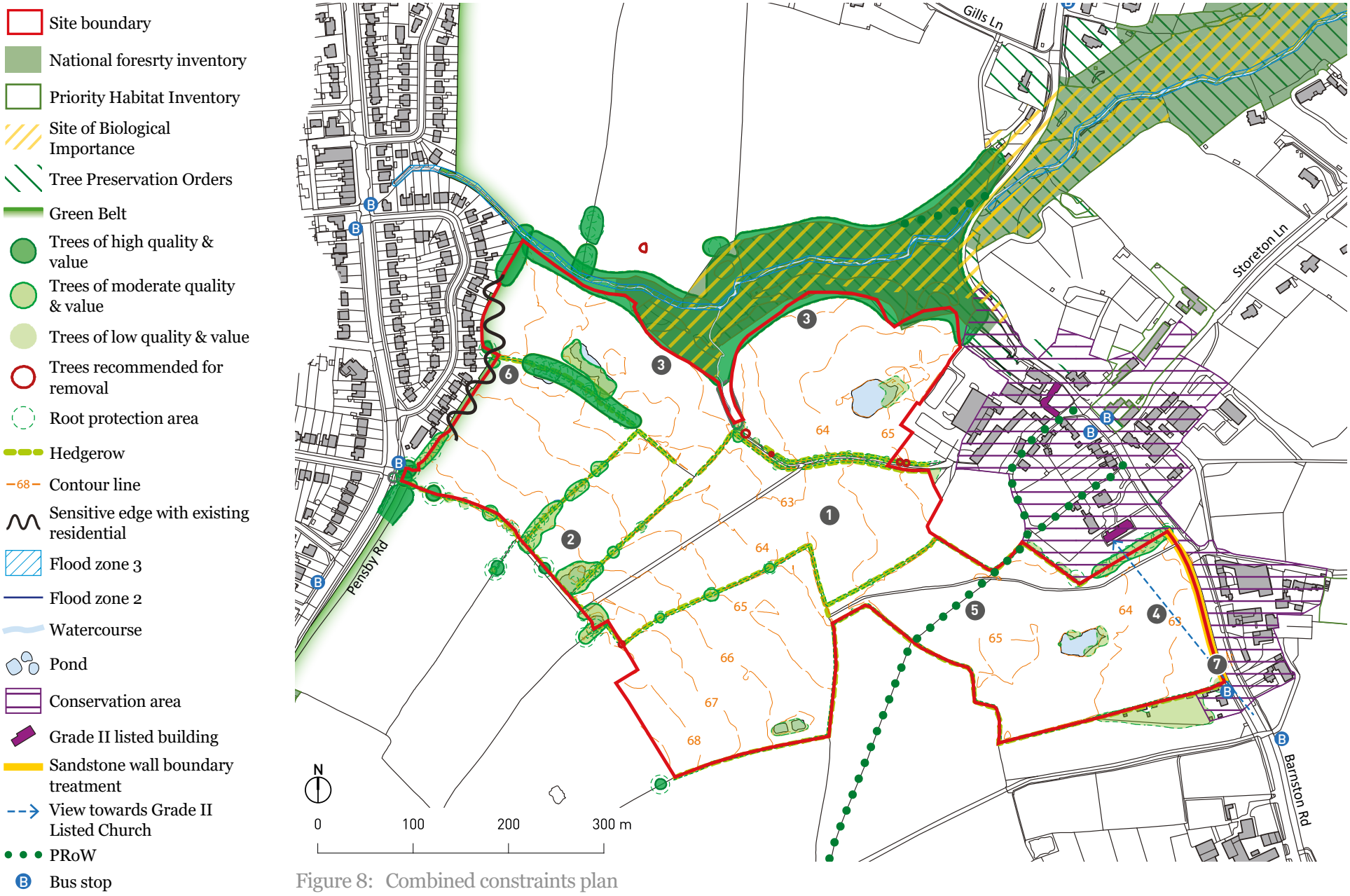


Figure 8: Combined constraints plan

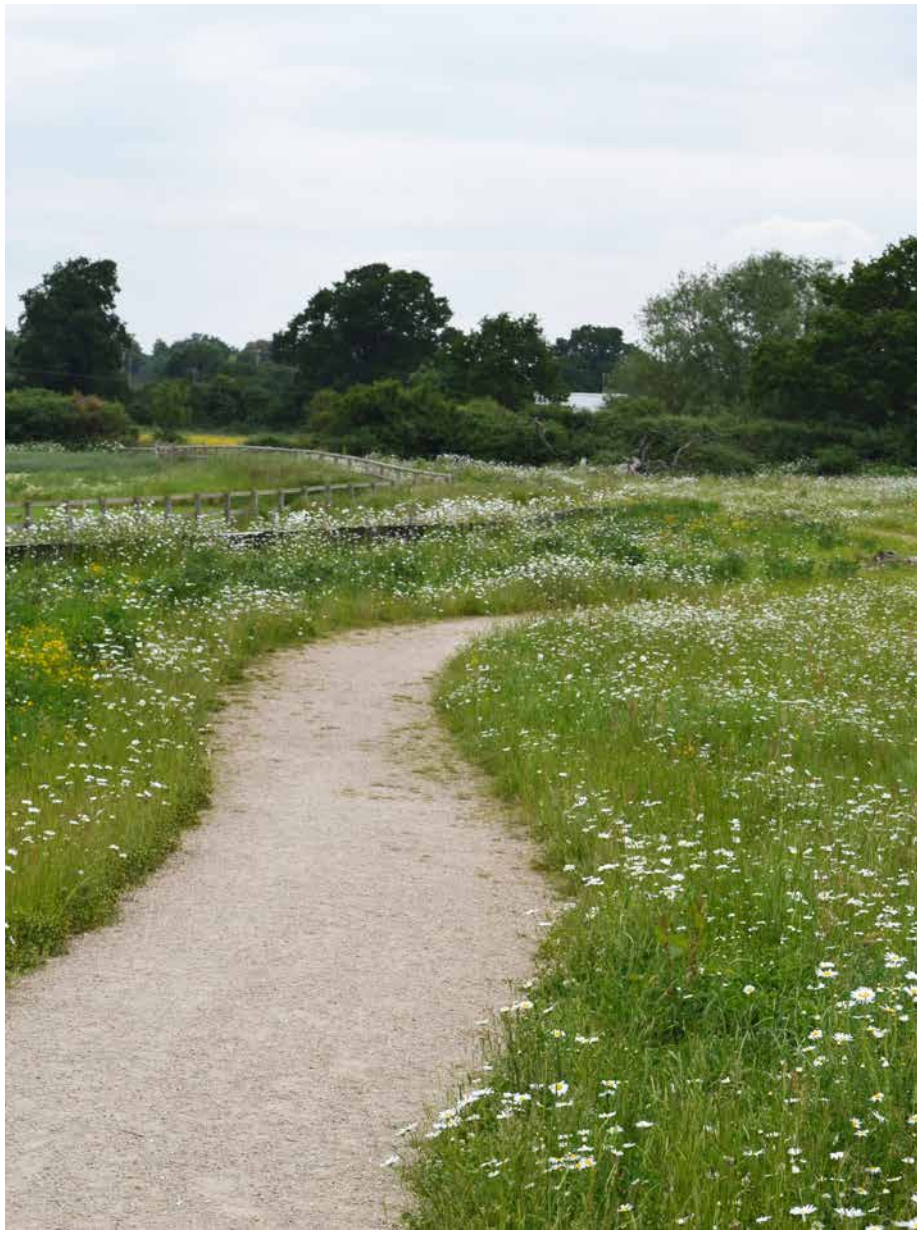
4.0
Vision and masterplan

4.1 SANG vision

The proposed Suitable Alternative Natural Greenspace will create a permanent area of newly accessible landscape between Barnston and Pensby.

The SANG will be a managed, rural landscape, preserving the character of the local landscape and the setting to Barnston Conservation Area and retaining and enhancing trees, hedgerows and ponds.

A network of footpaths will create a circular route for countryside leisure walks and dog walking, whilst significantly improving connectivity with the existing PRoW network and existing and proposed urban areas.



SANG at Kentwood Farm, Wokingham, Allen Pyke Associates

4.2 Leverhulme Design Charter

Leverhulme's Design Charter sets out its commitment to delivering beautiful and long-lasting living environments in line with the requirements of the National Planning Policy Framework.

The Charter's ten commitments to sustainable, high quality design respond to the ten themes of the Government's National Design Guide and reflect the heritage and ethos of Leverhulme and are reflected in the approach taken to the design of the SANG.

In particular, the SANG application supports Leverhulme's Commitment 3.0 Nature:

"To make green spaces, trees, hedgerows and gardens core characteristics of every Leverhulme neighbourhood for the benefit of the environment, climate and community wellbeing.

To bring significant environmental gains to Wirral through enhancement of habitats across the rural Leverhulme estate."

4.3 SANG design guidance

SANG provide avoidance measures for potential impacts of residential development on a National Site Network (NSN) site, in this case the Dee Estuary Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar site, by preventing an increase in visitor pressure on the site. The effectiveness of SANG as mitigation depends upon its location and design. They must be such that the SANG is more attractive than the NSN site to users of the kind that currently visit the SPA. The location of the SANG in relation to the proposed developments and the Dee Estuary and the quality of the SANG must follow the guidance (*Guidelines for Creation of Suitable Alternative Natural Greenspace (SANG), August 2021)* provided by Natural England, which are summarised below.

SANG may be created from:

- Existing open space of SANG quality with no existing public access or limited public access, which for the purposes of mitigation could be made fully accessible to the public;
- Existing open space, which is already accessible, but which could be changed in character so that it is more attractive to the specific group of visitors who might otherwise visit the protected site; and
- Land in other uses which could be converted into SANG.

SANG must:

- Have adequate parking for visitors, which can be safely accessed by car and clearly signed, unless the site is intended for local use, i.e. within easy walking distance (400 m) of the developments linked to it. The amount of car parking space should be determined by the anticipated use of the site and reflect the visitor catchment of both the SANG and the SPA;

- Make it possible to complete a circular walk of 2.3-2.5km around the SANG;
- The accessibility of the site must include access points appropriate for the visitor use the SANG is intended to cater for;
- The SANG must have a safe route of access on foot from the nearest car park and/or footpath/s;
- All SANG with car parks must have a circular walk which starts and finishes at the car park;
- SANG must be designed so that they are perceived to be safe by users; they must not have tree and scrub cover along parts of the walking routes;
- Paths must be easily used and well maintained but most should remain unsurfaced to avoid the site becoming too urban in feel;
- SANG must be perceived as semi-natural spaces with little intrusion of artificial structures, except in the immediate vicinity of car parks. Visually sensitive way-markers and some benches are acceptable;
- All SANG larger than 12 ha must aim to provide a variety of habitats for users to experience;
- Access within the SANG must be largely unrestricted with plenty of space provided where it is possible for dogs to exercise freely and safely off lead; and
- SANG must be free from unpleasant intrusions (e.g. sewage treatment works smells etc).

The guidance also states that a SANG should be clearly signposted and have leaflets produced for the purpose of attracting potential users to the SANG. In addition, it is desirable if the SANG allows dog owners to take dogs from the car park to the SANG safely off the lead, have a SANG with gently undulating topography and have access points to include signage outlining the layout of the SANG and the routes available to visitors.

Appendix A sets out how the proposed SANG performs against the Natural England guidelines document.

4.4 Design principles

The proposed SANG layout is structured by key design principles. These respond to the SANG design guidance, commitments of the Design Charter and the Site's character, context and opportunities.

- Maintain and enhance the existing defined character of Landscape Character Area 4a: Landican and Thingwall Lowland Farmland and Estates and its managed rural landscape by retaining field boundaries, ponds and trees, ensuring the primary walking routes track around the peripheries of the existing fields, rather than across them and responding positively to the Landscape Guidelines set out within the Landscape Character Assessment
- Create a walking route of 3.25km of new footpaths, 400m of existing farm track and 150m of existing footpath FP25. The new network of footpaths will provide a variety of routes and loops with distance options of between 0.5km and over 3km, which in turn links into Barnston Village to the north or Heswall to the south, direct links to Barnston Road to the east and Pensby Road/Pensby to the west and potential future links across Prenton Brook to land to the north/Gills Lane.
- Connect the SANG walking routes with existing and proposed footpaths in the surrounding area to encourage local access on foot
- Provide a small, screened car park (with bicycle stands) for visitors off Barnston Road
- Provide a pedestrian access with cycle stands at the western entrance to the site off Pensby Road
- Provide interpretation information associated with local ecology and heritage
- Provide a durable, functional walking surface that is accessible, with appropriate associated furniture in the form of DDA compliant kissing gates, benches, dog bins and bins
- Create a new extended woodland habitat buffer to Barnston Dale woodland
- Enhance wetland, hedgerow and grassland habitats across the site
- Increase levels of tree cover across the site
- Minimise or omit any adverse effects upon the visual amenity of nearby residents.

4.5 Proposed development parameters

Full planning approval is sought for the development framework shown on Figure 9 which reflects the design principles. The proposed development framework comprises:

- 22.6 ha accessible natural green space
- provision of 3.25km of new footpaths, 400m of existing farm track and 150m of existing Public Footpath. The new network of footpaths will provide a variety of routes and loops with distance options of between 0.5km and over 3km
- 0.08 ha visitor car park and planting to screen
- provision of a new junction and access road from Barnston Road to the car park
- provision of a pedestrian access onto Pensby Road
- provision of footpath connection points to proposed footpaths to the north and south of the site, to be delivered in association with phase 1 and 2 residential developments.

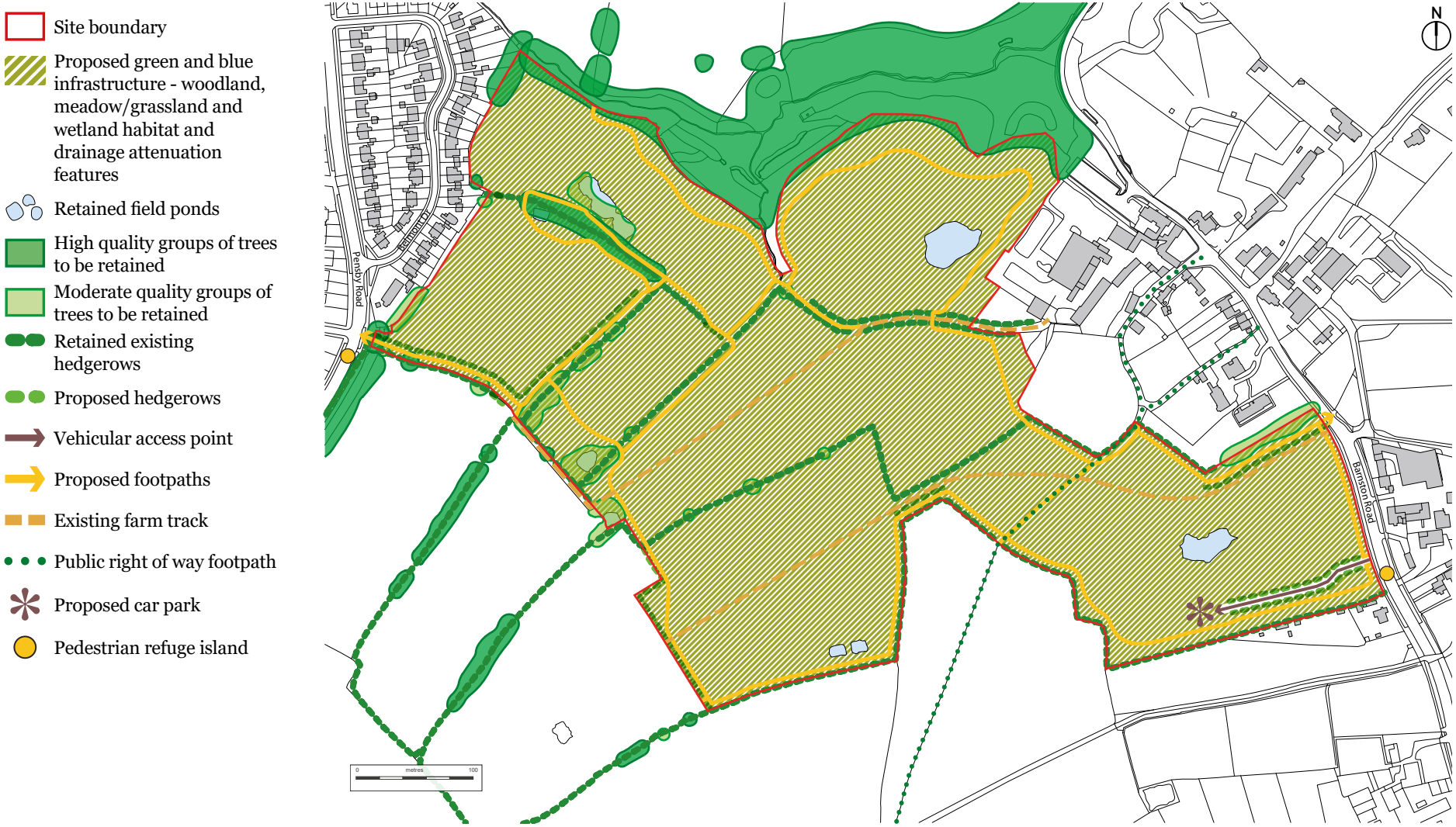


Figure 9: Framework plan

4.6 Design evolution

The approach has been consistent throughout in that the above design principles remained a constant through the evolution of the design proposals as set out below.

4.6.1 Initial concept plan, May 2022

The initial sketch scheme for the site comprised a circular walking route of just over 3km, which started at a proposed parking area to the west, off Pensby Road.

4.6.2 Masterplan evolution, June-July 2022

In response to the findings of technical work in relation to heritage, trees, land ownership and transport the draft masterplan was amended in the following manner:

- The boundary of the SANG application was finalised, omitting the south-western most field close to Pensby Road
- The vehicle access was confirmed as being via a new junction onto Barnston Road, rather than from Pensby Road
- A footpath access was proposed onto Pensby Road, with a single pedestrian refuge in the centre of Pensby Road
- A new section of footpath adjacent to Barnston Dale was added,

Figure 10: Initial concept plan, May 2022

Figure 11: Masterplan, June-July 2022

with associated new woodland planting adjacent to the existing woodland, enabling a connection with Site B proposals for a footpath link to Gills Lane

- References were removed to culverted crossings of ditches to reduce environmental impact, with all crossings to be timber bridges/boardwalk
- References were removed to proposed trees on the boundary with Barnston Road, to retain views of the Church identified within the Conservation Area Appraisal
- The proposed location of the car park was moved westwards, and screening planting added around the car park to minimise impact upon adjacent property/residents and maintain views to the north
- References were added to route options and heritage interpretation to be provided at the car park
- Further details were provided in relation to the indicative planting schedules.

4.6.3 Response to public consultation, August 2022

All comments received throughout the virtual consultation process have been reviewed by the project team and addressed in the application documents where appropriate.

Throughout the consultation period, Leverhulme's project team responded directly to enquiries received via the telephone line and email address.

Feedback received from the pre-app consultation in August 2022 was generally not related to the specific design or layout of the SANG. Therefore, no changes to the SANG design proposals have been made in response.

Observations which arose during the pre-application consultation process are the following:

- Concerns over the use of Green Belt land
- Highway and pedestrian safety concerns
- Modest levels of support for the SANG proposals
- Concern over pressure that new homes will put on existing infrastructure
- Concerns over the impacts that the Leverhulme Vision could have on Biodiversity
- Proposals would see significant improvement to local area
- Concern over privacy for neighbouring properties
- Pleased with cycle provision

For detailed a chronological account of the community engagement undertaken and the main issues raised, along with Leverhulme's responses see Suitable Alternative Natural Greenspace in Barnston SCI report prepared by BECG (August 2022).

4.7 Illustrative masterplan

The masterplan for the proposed SANG is the culmination of the design and consultation process outlined in previous sections.

It illustrates how the Site would be developed within the parameters of the planning application to deliver 22.6 ha of SANG including a 3.25 km walking route and 0.08 ha visitor car park.

The masterplan seeks to retain and enhance the existing managed, rural landscape character of the Site in order to maintain the quality of the landscape setting to Barnston Conservation Area, while enhancing access and biodiversity.

The masterplan incorporates the following key features:

1. Retaining and enhancing circa 22.6ha of managed, rural landscape and its defined landscape character by retaining and improving existing hedgerow boundaries, increasing numbers of hedgerow trees and managing field ponds
2. The field margins located between the proposed primary footpath and the adjacent hedgerow boundary is to be mown twice yearly to create areas of longer grass and potentially wildflower, thus enhancing levels of biodiversity over and above that associated with the pastoral grasslands within the existing fields
3. A 3.25km circular walking route which is accessed from a new carpark accessed off Barnston Road and a footpath link to Pensby Road, with connectivity with the existing Public Footpath FP25 and the proposed footpath running north from Barnston Dale to Gills Lane, which is to be delivered as part of the phase 1 residential developments
4. New blocks of native species woodland adjacent to existing woodland along Barnston Dale and smaller blocks of native species woodland located along the southern boundary of the site will increase the tree cover in the area in a manner consistent with its inherent character, whilst providing enhanced levels of biodiversity, particularly as they become established. Smaller blocks of native species woodland and new sections of native species hedgerow in locations to the west will also provide screening in order to maintain the visual amenity of residents located on Belmont Drive
5. The proposed car park will be accessed via a new junction onto Barnston Road
6. The new car park is to be located circa 130m to the west of Barnston Road and set behind a native species woodland block. The set-back position of the car park responded to the presence of the adjacent property no.83 Barnston Road 'The Lodge' and the amenity of its residents, whereas the proposed woodland screen to the north of the car park is proposed in order to mitigate intervisibility between the car park and the conservation area to the north and east
7. The proposed car park covers an area of circa 0.08ha and will contain spaces for 23 cars (2 of which will be disabled spaces), along with stands for up to 10 no. bicycles
8. The new 3.25km walking route will be surfaced in hoggin and contained by timber boards. A series of DDA compliant kissing gates will ensure the route is not readily accessible to cycles, motorcycles and horses, whilst ensuring the agricultural fields remain secure and functional
9. In some locations, the proposed footpaths cross over existing ditches and agricultural access points. Ditch crossings will be achieved through the implementation of sections of timber boardwalk/bridges with handrails and non-slip surfacing, whereas the sections of footpath that cross agricultural access points will be made up of a short section of tamped concrete to create a durable crossing point for agricultural vehicles/machinery
10. The walking route will be accompanied by interpretive information boards/signage regarding local flora and fauna and heritage and a number of benches, bins and dog bins.

Figure 12: SANG masterplan

4.8 Relationship to Leverhulme Vision

The proposed SANG forms part of an important first phase of Leverhulme's strategic, estate-wide vision. This has been long in the making - the final Vision document which gave form to the ideas was prepared in April 2020.

The Vision seeks to meet local housing need while providing significant community and environmental benefits making use of Leverhulme's wider landholding. By planning strategically in this manner, the right infrastructure (green and blue, movement and community) can be provided in a coordinated and timely manner.

The Vision identified the opportunity for a green buffer between Barnston and Pensby alongside residential growth to the north and south.

This SANG application is submitted alongside applications for development at Sites A-H. The delivery of SANG is to be conditioned as part of those applications.

In addition to the provision of SANG, each individual application targets and delivers both on-site and off-site benefits which (guaranteed by formal planning obligations made by Leverhulme) will be binding on the areas concerned. These compensatory enhancements to the remaining Green Belt form phase 1 of delivery of the Leverhulme Vision to create a connected network of new cycleways and footpaths, habitat corridors, woodland planting, leisure and heritage trails and other environmental enhancements.

The off-site benefits to be delivered by phase 1 Sites B, C, D and E are located to the north and south of the proposed SANG, and the SANG design co-ordinates with these proposals:

- the SANG circular footpath includes a spur in the north-west corner to enable a connection with a proposed bridge over Barnston Dale and a footpath to Gills Lane
- proposed woodland planting to the south of Barnston Dale within the SANG, co-ordinates with proposed woodland and grassland planting to the north of Barnston Dale associated with Sites B and C creating a wide habitat corridor
- off-site habitat creation and hedgerow planting associated with Site D is located to the south west of the proposed SANG expanding the area of enhanced landscape.

The SANG design includes the following features which would co-ordinate with future phases of development should these come forward in phase 2:

- the circular footpath includes passive provision on its southern boundary for additional connections towards Heswall and proposed phase 2 developments
- the circular footpath provides passive provision on its eastern boundary for a connection with a proposed phase 2 footpath and cycleway running to the east of Barnston Road
- the SANG has the potential to be expanded to the south east to support future phases of development.

- Leverhulme ownership
- Milner ownership

Existing

- Primary schools
- Retail / local centres
- Existing footpath/ permissive path

Proposed

- Phase 1 site boundary
- New footpath
- New cycle supergreenway
- Enhanced existing footpath
- Linking cycle supergreenway way outside Leverhulme land following existing street
- Potential locations for phase 1 self-build/custom build
- Enhancement to existing hedgerow
- New hedgerow
- SANG area with connecting footpaths
- Public green space including habitat and recreation areas
- Non-woodland habitat creation and enhancement
- Residential
- Access roads
- Highway improvements

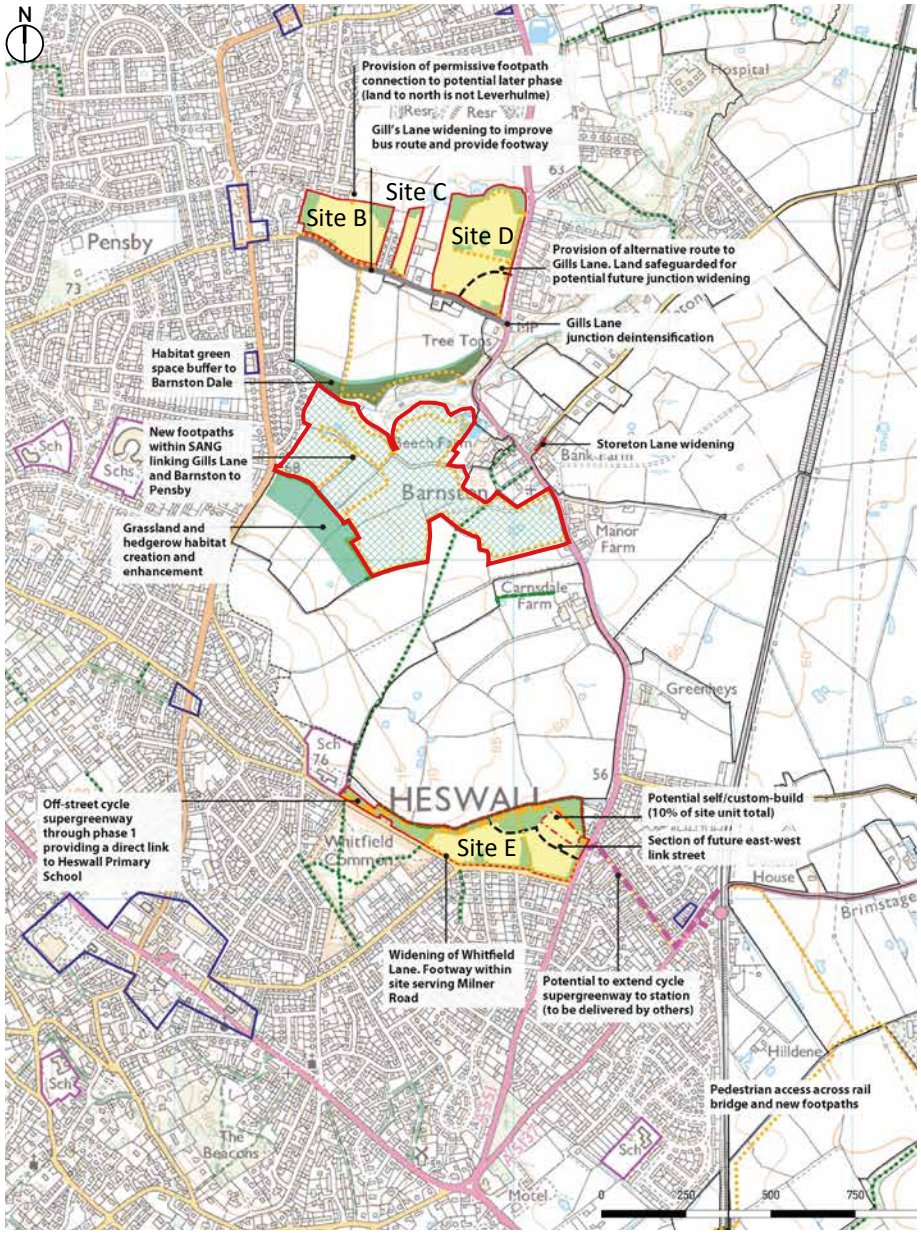


Figure 13: Phase 1 embedded and off-site enhancements

4.9 Indicative Landscape Proposals

4.9.1 Planting

Proposed Native Species Woodland

This will comprise a mix of Alder, Birch, Hazel, Hawthorn, Beech, Blackthorn and Oak. 90% of the plants are to be planted as 60-90cm bareroot transplants, which will be notch planted at a density of 0.44 plants per m² (1.5m cc) and protected by a spiral rabbit guard and supporting cane. The remaining 10% of the planting is to comprise 10-12cm selected standard trees supported by a single, angled stake, appropriate rubber tie and plastic spacer (tree species only). These larger stock trees will help realise some tangible levels of visual and physical effect from the day these areas are planted.

Proposed Native Species Tree Planting

Individual trees are to be located into existing hedgerows where existing tree numbers are limited. New trees are to be positioned within appropriate existing gaps in the hedgerow and will comprise a 12-14cm heavy standard tree, supported by a single, angled stake, appropriate rubber tie and plastic spacer.

Proposed Native Species Hedgerow

New sections of native species hedgerow, along with existing sections that require improving/gapping up will be planted on a double staggered row at a density of 5no plants per lin m. The proposed species mix will be notch planted as 60-90cm bareroot transplants (except for Holly that will be container grown) and will comprise Hazel, Hawthorn, Holly, Blackthorn and Gorse. All new plants will be protected by a spiral rabbit guard and supporting cane (Holly to be protected by an appropriate tree guard).

Alder (Alnus glutinosa)

Birch (Betula pendula)

Native wood planting

Hazel (Corylus avellana)

Blackthorn (Prunus spinosa)

Beech (Fagus sylvatica)

Oak (Quercus robur)

Mixed Native Hedge

Hawthorn hedgerow

Gorse hedgerow

4.9.2 Materials

A simplified summary of the proposed materials and their location is shown on Figure 14. Detailed information associated with hard landscape elements and furniture is described by Barnes Walker drawing M2738-PA-12-V2. This section should therefore be read with reference to this drawing.

Surfacing

The proposed walking route and the car parking area is to be surfaced in compacted gravel/hoggin, which will be contained by tantalised timber board edges and car parking spaces will be defined by rows of reclaimed gritstone setts, which will be set flush with adjacent surfacing (see details D01, D02 and D04 on drawing M2738-PA-12-V2).

Where the proposed footpath enters into the root protection areas of nearby trees, an alternative reduced dig detail will be utilised (see detail D03).

In instances where the proposed footpath crosses routes used by agricultural vehicles, a section of gently cambered, tamped concrete will be implemented in order to present a more durable surface at these crossing points (see detail D05).

Furniture

The walking route will be furnished with a number of timber benches, litter bins and dog waste bins, located at key locations along the proposed footpath.

In order to maintain a series of secure fields that can continue to be farmed, a series of new gates are proposed, primarily where the route crosses from one field to another. These gates will be timber, self-closing kissing gates, which are DDA compliant. In addition, new agricultural, timber, five bar field gates are proposed to ensure all field boundaries have the potential to be contained/secure.

In a number of instances, the proposed walking route crosses ditches which accompany the hedgerows located along the peripheries of the agricultural fields. In such locations, timber footbridges, with handrails and anti-slip surfacing are proposed.

The proposals also include secure cycle parking areas to the west (close to the Pensby Road entrance) and to the east (within the car park). These will comprise 5no galvanised ‘Sheffield stands’ providing secure parking for up to 10 bicycles at each location.

Low level, timber bollard lights are proposed within the car parking area to provide a functional level of lighting, whilst remaining appropriately visually discrete.

Lighting Bollard

Proposed self-closing gate

Proposed kissing gate

Proposed bench

Timber field gate

Proposed litter bin

Proposed dog bin

Proposed Sheffield bike strand

Proposed timber ditch crossing

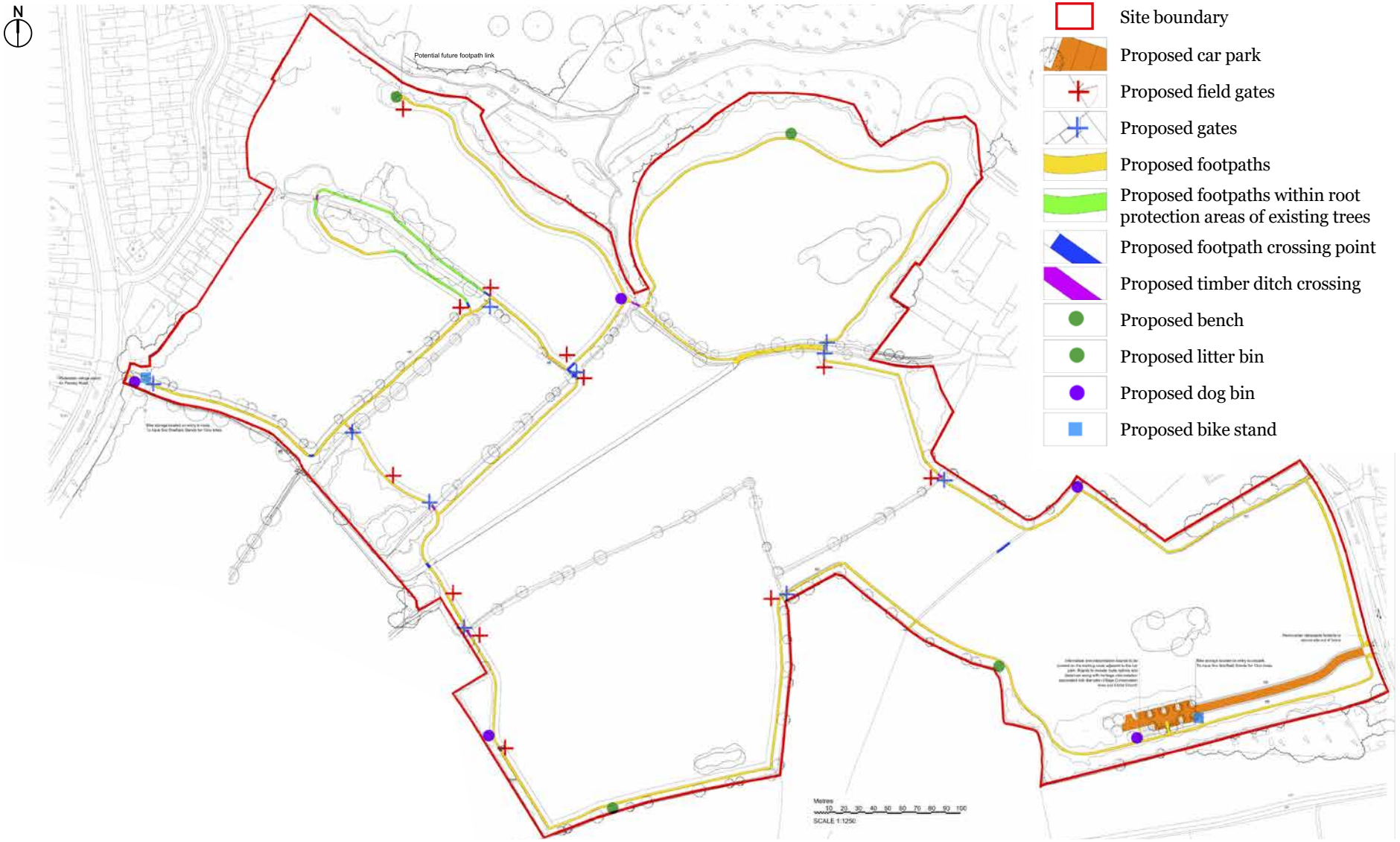


Figure 14: Detail location plan

4.10 Drainage

The SANG will not introduce any significant built development other than an access road and car parking area to the south east of the site and a number of footpaths across the site. These features would not impact water movement across the site. Detailed design will consider the use of permeable surfaces for the access road, car park and footpaths and as such any surface water drainage will be managed locally at source and will not require formal management.

If at the detail design / conditions discharge stage there is any aspect of the SANG that it is considered necessary to manage surface water runoff, this will be undertaken in line with local and national sustainable drainage (SuDS) guidance.

4.11 Biodiversity net gain

Currently the Site lacks any notable biodiversity value comprising mainly intensively managed agricultural land. At present, the Site has a value of 47.02 Biodiversity Units for habitats and 13.50 Biodiversity Units for hedgerows.

The proposals for the Site include:

- Increasing the floral diversity within the grassland sward and managing appropriately;
- Existing trees and hedgerows to be brought under suitable management with the inclusion of understory planting of native berry, nut and fruit bearing species;
- Increasing the floral diversity of the ponds and management of encroaching scrub;
- Several native woodland copses are to be created throughout the site; and
- The adjacent woodland to the north is to be buffered by further woodland and grassland planting.

Post development the Site will see an uplift in habitat BU of +42.18 (89.71%) and hedgerow BU of + 17.75 (131.49).

4.12 Access and movement

4.12.1 Walking

The layout of the SANG includes 3.25km of new footpaths, 400m of existing farm track and 150m of existing Public Footpath. The new network of footpaths will provide a variety of routes and loops with distance options of between 0.5km and over 3km.

The proposed SANG will be accessed via three pedestrian access points, one from Pensby Road and two from Barnston Road.

To assist pedestrians wishing to cross the carriageway on Pensby Road a central pedestrian refuge island, complete with dropped kerbs and tactile paving, will be provided (for details see Curtins Drawing 081158-CUR-00-XX-DR-TP-75002-P02). The provision is located south of Greenbank Drive.

The southern pedestrian and cycle access point from Barnston Road is proposed via the new junction to the proposed car park. The proposal includes a central pedestrian refuge island complete with dropped kerbs and tactile paving to assist pedestrians wishing to cross the carriageway at this location (for details see Curtins Drawing 081158-CUR-00-XX-DR-TP-75001-P02).

The northern pedestrian access point from Barnston Road will be provided via an existing agricultural gate south of Christ Church.

4.12.2 Cycling

There are twenty cycle parking spaces proposed on site, ten provided adjacent to the Pensby Road access and ten provided within the proposed car park. At both locations, the cycle parking would be provided in the form of five 'Sheffield' cycle loops.

4.12.3 Public transport

The Site is accessible on foot, by bicycle and by bus. There may also be opportunities for some users to access the site via a multi-modal journey using Heswall Railway Station. Therefore, the site is considered to be accessible by sustainable modes of travel in line with national and local transport planning policy.

4.12.4 Vehicle access points

Vehicular access to the Site is proposed via a new T-junction onto Barnston Road (for details see Curtins Drawing 081158-CUR-00-XX-DR-TP-75001-P02). Junction design will be in accordance with Wirral local design standards and Manual for Streets.

4.12.5 Parking provision

Car parking will be provided in accordance with the guidance included within the Natural England 'Suitable Alternative Natural Greenspace: a Best Practice Guide' document.

There are 23 car parking spaces proposed, accessed from Barnston Road. The provision would include 2 accessible spaces, at c.8.7% of the total parking provision.

4.13 Heritage Assessment

A Heritage Impact Assessment has been prepared by SLR Consulting Limited (SLR). It identifies known and anticipated heritage assets within the Site, and discusses their significance, in accordance with the NPPF (2021) paragraph 194.

The report also discusses the possible effect of the proposals upon the significance of heritage assets, both as a result of physical truncation and as a result of change to setting.

4.13.1 Barnston Conservation Area

Settings

The Heritage Impact Assessment identified no harm to the significance of the Conservation Area due to changes to setting as a result of the Proposed Development. The existing character of the landscape would be preserved under the proposals, including key views from and towards the Conservation Area, including the listed Christ Church. Indeed, the assessment found that there is the potential for the proposals to have a beneficial effect on the ability to appreciate the heritage interests of the Conservation Area and better reveal its significance to the public.

Through opening public access to the surrounding land to the west of the Conservation Area, the proposals would allow for greater opportunities to appreciate Barnston Village and Christ Church from additional viewpoints within the landscape.

Further, the ability to appreciate and understand the historic interest of the Conservation Area would be enhanced through the installation of heritage interpretation boards within the carpark. These interpretation boards would provide visitors with key information regarding the historic architecture and development of Barnston, which would better reveal the asset's significance to a wider section of the public and enhance visitor experience to the SANG.

Physical Effects

The Heritage Impact Assessment identified no harm to the significance of the Conservation Area as a result of the physical removal of a short stretch of sandstone walling to create the access for the car park. The assessment identified that the heritage significance of the sandstone walling does not lie individually within the stones themselves or small sections of the wall, but within the appreciation of the feature as a whole. The removal of a relatively small section of the sandstone walling (in comparison to the vast amount of such structures within the village) for the purpose of creating an access would thus not be anticipated to impact the character or appearance of the Conservation Area, and such an opening within the walling would be consistent with other such openings along this stretch of highway.

Reference should be made to the Heritage Impact Assessment for further information.

4.14 SANG management

4.14.1 Landscape Management

A landscape management plan and associated schedules will be prepared to provide details of the management of proposed landscape works associated with the SANG. This management plan can be secured by planning condition and/or the legal agreement associated with this SANG application.

The SANG Landscape Works comprise new woodland and hedgerow planting, the creation of longer, more diverse grasslands, pond management works, footpath surfacing, gates, timber bridges and furniture such as benches and bins.

The proposals are designed to restore and enhance the character and appearance of the agricultural landscape, whilst providing biodiversity enhancements.

4.14.2 The Plan Structure

The management plan will provide details of the management of the softworks, hardworks and associated furniture associated with the SANG for the first five years following its completion.

The key objective of the plan will be to organise the management of the landscape into elements by providing a framework of routine operations for each item. This will then be used to guide and instruct the landscape maintenance operations carried out by contractors on site.

The plan will form a working document and will refer to the drawings listed below prepared by Barnes Walker Ltd, to facilitate the management of the proposed landscape elements.

Landscape Drawings:

- M2738-PA-11-V9 – SANG Layout Including Landscape and Footpath Proposals
- M2738-PA-12-V3 – SANG Landscape Details

4.14.3 The Landscape Elements

The landscape elements to be managed comprise the following:

- Proposed Native Species Woodland Planting
- Proposed Individual Native Species Hedgerow Trees
- Proposed Native Species Hedgerows
- Proposed Ornamental Shrub Planting
- Proposed Long Grassland Margins
- Existing Field Ponds
- Footpaths
- Gates
- Bridges
- Benches, Litter Bins and Dog Bins

4.14.4 The Management Plan

During the first year following the completion of the construction phase, the delivery of the Management Plan will be facilitated by the contractor implementing the SANG works. Thereafter, the same contractor, an alternative landscape maintenance contractor or an appropriate management company will manage and maintain the works on behalf of Leverhulme.

5.0
Conclusion

This Design and Access Statement describes how the design of the proposed SANG has responded to the existing landscape character of the Site, its relationship to Barnston Conservation Area and Pensby and development proposals in the wider area.

The proposals will deliver 22.6 ha of accessible natural green space, as mitigation for the potential increased recreational pressure on the qualifying features of the Dee Estuary Special Area of Conservation (SAC) as a result of the in-combination effects of the phase 1 development Sites A-H.

The design of the SANG retains the character of the managed rural landscape between Pensby and Barnston village, while enabling access and enhancing biodiversity.

The Site will be managed in perpetuity as SANG by Leverhulme forming a permanent green buffer between the Pensby and Barnston.

Appendix A:
SANG compliance checklist

The following table sets out how the SANG performs against the Natural England guidance document *Guidelines for Creation of Suitable Alternative Natural Greenspace (SANG), August 2021*.

Stipulation specified by the Guidelines for Creation of Suitable Alternative Natural Greenspace (SANG), August 2021	Feature as complied with in the proposal
"SANG may be created from: • existing open space of SANG quality with no existing public access or limited public access, which for the purposes of mitigation could be made fully accessible to the public…"	The SANG area is currently in agricultural use with public access limited to the formal footpath which crosses the site. New public access will be provided across the site, including through the creation of new entrances in convenient locations for neighbouring communities.
"The identification of SANG should seek to avoid sites of high nature conservation value which are likely to be damaged by increased visitor numbers."	The Site area has been specifically drawn to avoid the high value biodiversity area along the bank of Prenton Brook. The remainder of the site has limited ecological value at present which will be significantly improved by the proposals, with only very minor collateral losses anticipated.
"SANG continue to need to be delivered in advance of any associated housing stock being occupied. They should also be funded for in perpetuity as is the current process."	These conditions will be secured in the s.106 agreement should permission be granted.

Must haves	
For all sites larger than 4ha there must be adequate parking for visitors, unless the site is intended for local use, i.e. within easy walking distance (400m) of the developments linked to it. The amount of car parking space should be determined by the anticipated use of the site and reflect the visitor catchment of both the SANG and the SPA.	Parking provision for the site has been provided at 23 car parking spaces and at least 20 bicycle parking spaces, consistent with the specification of the document *Suitable Alternative Natural Greenspace: A Best Practice Guide* of 1 space per hectare. Parking is not proposed in excess of the minimum recommended provision as it is intended the modal split for arrivals/ departures would be focused on more sustainable forms of travel such as walking, bus travel and cycling. Additional car parking spaces would not encourage this aspiration, but may instead impact negatively on the rural and open nature of the site.
Possible to complete a circular walk of 2.3-2.5km around the SANG.	The SANG design provides for 3.25km of new footpaths, 400m of existing farm track and 150m of existing Public Footpath and that the new network of footpaths will provide a variety of routes and loops with distance options of between 0.5km and over 3km.
Car parks must be easily and safely accessible by car and should be clearly sign posted.	Signage and safe access is to be provided from Barnston Road.
The accessibility of the site must include access points appropriate for the visitor use the SANG is intended to cater for.	Access to the parking area will be suitable for pedestrians, bikes and cars. The western access to the site is designed to be suitable for pedestrians and cyclists. All other entrances as well as access points between fields are designed to be accessible by pedestrians only, who are the intended users of the Site.
The SANG must have a safe route of access on foot from the nearest car park and/or footpath/s	The car park is located on site and provides safe access.

Must haves	
All SANG with car parks must have a circular walk which starts and finishes at the car park.	The circular route can be started from and concluded at the parking area.
SANG must be designed so that they are perceived to be safe by users; they must not have tree and scrub cover along parts of the walking routes.	The SANG is designed to feel safe, with areas of open land largely retained by the proposals to encourage passive surveillance. The car park is to be closed and access to the site discouraged overnight.
Paths must be easily used and well maintained but most should remain unsurfaced to avoid the site becoming too urban in feel.	Hoggin paths composed of compactible ground cover rather than hard surfacing will be used throughout the scheme, while maintenance will be underpinned by a comprehensive land management plan secured through the s.106 agreement.
SANG must be perceived as semi-natural spaces with little intrusion of artificial structures, except in the immediate vicinity of car parks. Visually sensitive way-markers and some benches are acceptable.	The scheme does not propose to create any hard landscaping or structures with the exception of the car park and access itself.
All SANG larger than 12 ha must aim to provide a variety of habitats for users to experience.	The SANG, exceeding this threshold, seeks to create and improve various habitats around the site including field ponds, grassland, hedgerows and woodland.
Access within the SANG must be largely unrestricted with plenty of space provided where it is possible for dogs to exercise freely and safely off lead.	The fields which make up the SANG will remain open and accessible to dogs off their leads.
SANG must be free from unpleasant intrusions (e.g. sewage treatment works smells etc).	There are no obvious causes of unpleasant intrusions present which could threaten the vitality or viability of the SANG.

Should haves	
SANG should be clearly sign-posted or advertised in some way	This matter will be complied with upon implementation of the scheme.
SANG should have leaflets and/or websites advertising their location to potential users. It would be desirable for social media to be used as well, with the goal of reducing paper use…	The applicant is willing and it is intended that the creation and opening of the SANG be publicised at the appropriate time. As an aside, a virtual exhibition has also been undertaken prior to submission.
Desirable	
It would be desirable for an owner to be able to take dogs from the car park to the SANG safely off the lead.	The SANG parking area is located on-site, meaning dogs will normally be able to access the site safely from here without the need for leads.
Where possible it is desirable to choose sites with a gently undulating topography for SANG.	The SANG meets this criteria as the land has a gentle gradient falling from north to south.
It is desirable for access points to have signage outlining the layout of the SANG and the routes available to visitors.	Though not detailed at this stage, such signage is intended to form part of the SANG.
It is desirable that SANG provide a naturalistic space with areas of open (non-wooded) countryside and areas of dense and scattered trees and shrubs. The provision of open water is encouraged and desirable on sites. However large areas of open water cannot count towards capacity.	Provision is made on site to bolster or create all of these types of habitat, whist no large bodies of water are included within the site area.
Where possible it is desirable to have a focal point such as a viewpoint, monument etc within the SANG.	Though there are no notable monuments or focal points within the SANG itself, due in part to the need to retain the landscape character and gentle topography of the land, the SANG does provide new and attractive views of Christ Church in Barnston which is one of the key features of that Conservation Area.

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Produced for Leverhulme Estates Limited
by Alan Baxter Limited, August 2022

‘Leverhulme’s estate-wide approach can deliver much-needed homes and unlock strategic transport, landscape, biodiversity and economic opportunities for the benefit of all of Wirral’

LEVERHULME

Appendix S9: Technical Supplement of Biodiversity Metric (Neutral Grassland)

6 Grassland – Medium, High & Very High Distinctiveness

Condition Sheet: GRASSLAND Habitat Type (medium, high & very high distinctiveness)	
UKHab Habitat Type(s)	
Grassland - Lowland calcareous grassland **Grassland - Lowland dry acid grassland** **Grassland - Lowland meadows** **Grassland - Other lowland acid grassland** **Grassland - Other neutral grassland** **Grassland - Tall herb communities (H6430)** [Note Tall herb habitat that does not meet the Annex 1 definition should be recorded as "Other neutral grassland"] **Grassland - Upland acid grassland** **Grassland - Upland calcareous grassland** **Grassland - Upland hay meadows** **Sparsely vegetated land - Calaminarian grassland**	
Habitat Description	
See UKHab	
Condition Assessment Criteria	
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. **NB - This criterion is essential for achieving moderate condition for non-acid grassland types only.**
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
3	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.
4	Cover of bracken is less than 20% and cover of scrub (including bramble) is less than 5%.
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition[1] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.
Additional Group (Non-acid types only)	
6	There are greater than 9 species per metre squared. **NB - This criterion is essential for achieving good condition (non-acid grassland types only).**

Condition Assessment Result	Condition Assessment Score
Acid Grassland Types	
Passes 5 of 5 criteria	Good (3)
Passes 3 or 4 of 5 criteria	Moderate (2)
Passes 0, 1 or 2 of 5 criteria	Poor (1)
Non-acid grassland Types	
Passes 5 of 6 criteria, including essential criterion 1 and 6.	Good (3)
Passes 3 or 4 of 6 criteria, including essential criterion 1.	Moderate (2)
Passes 0, 1, 2 criteria of 6 criteria; OR Passes 3 or 4 criteria excluding criterion 1 and 6	Poor (1)

Appendix S10: Natural England Consultation Response on SANG

Date: 24 March 2023
Our ref: 423225
Your ref: APP/22/01502

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Marcus Shingler
Wirral Council

BY EMAIL ONLY

Dear Mr Shingler

Planning consultation: Creation of a Suitable Alternative Natural Greenspace (SANG) development of 22.6 hectares including boundary works and means for access and parking; biodiversity enhancements to hedgerows, meadows/grasslands, field ponds and woodlands; creation of green infrastructure and footpaths; creation of wildlife habitats; and off-site highway works.
Location: Land West of Barnston Road

Thank you for your consultation on the above received by Natural England on 24 February 2023.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Further information required to determine impacts on designated sites
In summary, the application could have potential significant effects on designated sites and Natural England advises that further information is required in order to determine the significance of these impacts and the scope for mitigation.

Internationally and nationally designated sites
The application site is within 2.6km of the Dee Estuary Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar and Site of Special Scientific Interest (SSSI).

Please see the subsequent sections of this letter for our advice relating to SSSI features.

In considering the European site interest, Natural England advises that you, as a competent authority under the provisions of the Habitats Regulations, should have regard for any potential impacts that a plan or project may have. The Conservation objectives for each European site explain how the site should be restored and/or maintained and may be helpful in assessing what, if any, potential impacts a plan or project may have.

Habitats Regulations Assessment (HRA)
Despite the proximity of the application to European Sites, the consultation documents provided do not include information to demonstrate that the requirements of regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) have been considered by your authority, i.e. the consultation does not include a Habitats Regulations Assessment.

It is Natural England's advice that the proposal is not directly connected with or necessary for the management of the European site. Your authority should therefore determine whether the proposal is likely to have a significant effect on any European site, proceeding to the Appropriate Assessment stage where significant effects cannot be ruled out. Natural England must be consulted on any appropriate assessment your authority may decide to make.

Special Protection Areas (SPAs) are classified for rare and vulnerable birds. Many of these sites are designated for mobile species that may also rely on areas outside of the site boundary. These supporting habitats may be used by SPA populations or some individuals of the population for some or all of the time. These supporting habitats can play an essential role in maintaining SPA species populations, and proposals affecting them may therefore have the potential to affect the European site.

It should be noted that the potential impacts that may arise from the proposal relate to the presence of SPA interest features that are located outside the site boundary. Natural England advises that the potential for offsite impacts should be considered in assessing what, if any, potential impacts the proposal may have on European sites.

Natural England advises that there is currently not enough information to determine whether the likelihood of significant effects on functionally linked land can be ruled out.

Suitable bird survey evidence will be required for birds associated with the designated sites. We advise a comprehensive desk study should first be carried out to inform the need for site specific bird surveys. The desk study should include a robust data search, including relevant local records information including any data from local bird groups and any other survey evidence together with an assessment of the suitability of the site for SPA birds.

Sites of Special Scientific Interest
Our concerns regarding the potential impacts upon the Dee Estuary SSSI coincide with our concerns regarding the potential impacts upon the international designated sites.

Please note that if your authority is minded to grant planning permission contrary to the advice in this letter, you are required under Section 28I (6) of the Wildlife and Countryside Act 1981 (as amended) to notify Natural England of the permission, the terms on which it is proposed to grant it and how, if at all, your authority has taken account of Natural England's advice. You must also allow a further period of 21 days before the operation can commence.

Soils and Agricultural Land Quality
From the documents accompanying the consultation we consider this application falls outside the scope of the Development Management Procedure Order (as amended) consultation arrangements, as the proposed development would not appear to lead to the loss of over 20 ha 'best and most versatile' (BMV) agricultural land.

For this reason, we do not propose to make any detailed comments in relation to agricultural land quality and soils, although sustainable soil management should aim to minimise risks to the ecosystem services which soils provide, through appropriate site design / masterplan / Green Infrastructure. Natural England would advise that any grant of planning permission should be made subject to conditions to safeguard soil resources, including the provision of soil resource information in line with the Defra guidance Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

Further guidance is available in The British Society of Soil Science Guidance Note Benefitting from Soil Management in Development and Construction which we recommend is followed in order to safeguard soil resources as part of the overall sustainability of the development.

Should the development proceed, we advise that the developer uses an appropriately experienced soil specialist to advise on, and supervise soil handling, including identifying when soils are dry enough to be handled and how to make the best use of soils on site.

Other advice
Further general advice on the protected species and other natural environment issues is provided at Annex A.

Additional comments on Suitable Alternative Natural Greenspace (SANG)
Natural England understands that this development is intended to form part of a mitigation proposal for a number of new housing developments in Wirral and thus provide further comments with regards to the siting and suitability of the proposed SANG.

We advise any SANG provides for a variety of recreational activities (e.g. walking, jogging, dog walking including off lead etc.) and that the SANG is in close proximity to the housing developments it is intended to provide for, with consideration given to the connectivity routes between the housing developments and SANG.

We note this proposed SANG outlines proposals for habitat enhancement and creation in order to increase biodiversity and this is welcomed. However, this may not be compatible with the aim of allowing dogs off lead, as is stated in the plans. Many SANG sites have designated areas where dogs can run free. However, there is no evidence of zoning or the incorporation of such sites within these proposals. We advise consideration of the following:

- Dogs off lead may disturb wildlife in the newly created or enhanced habitats. This is particularly an issue if dogs are allowed to enter ponds and watercourses, where nesting waterfowl may be disturbed, and chicks killed. The turbidity caused by dogs entering the water can be problematic for fish. Flea treatments on the animals' fur (particularly Fipronil) are toxic to fresh-water invertebrates and can lead to the poisoning of watercourses.
- Free roaming dogs can be a danger to livestock in adjoining farmland.
- Having dogs off lead throughout the site may be off-putting for other site users.

In the consultation exercise the applicant has engaged in, there is no evidence of engagement with specific user groups, such as dog walkers, horse-riders etc. Such engagement would have provided a comprehensive picture of local need and an opportunity to discuss site design in greater detail.

There is also little evidence of site management plans, rangers, signage, educational opportunities or opportunities to engage proactively with site users, particularly dog walkers.

It should be noted that the proximity of housing developments in Wirral to coastal designated sites creates a draw for people to visit the coast. This SANG alone may not provide sufficient mitigation in terms of the in-combination effects of proposed new housing on designated sites and additional measures will be required.

Should the applicant wish to discuss this response further with Natural England, we would be happy to provide advice through our Discretionary Advice Service.

II you have any queries relating to the advice in this letter please email consultations@naturalengland.org.uk quoting the reference number at the top of this letter.

Yours sincerely

Isaac Lees
Sustainable Development Adviser
Cheshire, Greater Manchester, Merseyside & Lancashire

Annex A – Additional advice

Landscape

Paragraph 174 of the National Planning Policy Framework (NPPF) highlights the need to protect and enhance valued landscapes through the planning system. This application may present opportunities to protect and enhance locally valued landscapes, including any local landscape designations. You may want to consider whether any local landscape features or characteristics (such as ponds, woodland, or dry-stone walls) could be incorporated into the development to respond to and enhance local landscape character and distinctiveness, in line with any local landscape character assessments. Where the impacts of development are likely to be significant, a Landscape & Visual Impact Assessment should be provided with the proposal to inform decision making. We refer you to the Landscape Institute Guidelines for Landscape and Visual Impact Assessment for further guidance.

Protected Species

Natural England has produced standing advice[1] to help planning authorities understand the impact of particular developments on protected species. We advise you to refer to this advice. Natural England will only provide bespoke advice on protected species where they form part of a Site of Special Scientific Interest or in exceptional circumstances.

Local sites and priority habitats and species

You should consider the impacts of the proposed development on any local wildlife or geodiversity sites, in line with paragraphs 175 and179 of the NPPF and any relevant development plan policy. There may also be opportunities to enhance local sites and improve their connectivity. Natural England does not hold locally specific information on local sites and recommends further information is obtained from appropriate bodies such as the local records centre, wildlife trust, geoconservation groups or recording societies.

Priority habitats and Species are of particular importance for nature conservation and included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Most priority habitats will be mapped either as Sites of Special Scientific Interest, on the Magic website or as Local Wildlife Sites. List of priority habitats and species can be found here[2]. Natural England does not routinely hold species data, such data should be collected when impacts on priority habitats or species are considered likely. Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land, further information including links to the open mosaic habitats inventory can be found here.

Ancient woodland, ancient and veteran trees

You should consider any impacts on ancient woodland and ancient and veteran trees in line with paragraph 180 of the NPPF. Natural England maintains the Ancient Woodland Inventory which can help identify ancient woodland. Natural England and the Forestry Commission have produced standing advice for planning authorities in relation to ancient woodland and ancient and veteran trees. It should be taken into account by planning authorities when determining relevant planning applications. Natural England will only provide bespoke advice on ancient woodland, ancient and veteran trees where they form part of a Site of Special Scientific Interest or in exceptional circumstances.

Environmental gains

Development should provide net gains for biodiversity in line with the NPPF paragraphs 174(d), 179 and 180. Development also provides opportunities to secure wider environmental gains, as outlined in the NPPF (paragraphs 8, 73, 104, 120,174, 175 and 180). We advise you to follow the mitigation hierarchy as set out in paragraph 180 of the NPPF and firstly consider what existing environmental features on and around the site can be retained or enhanced or what new features could be

[1] https://www.gov.uk/protected-species-and-sites-how-to-review-planning-proposals

[2] http://webarchive.nationalarchives.gov.uk/20140711133551/http:/www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx

incorporated into the development proposal. Where onsite measures are not possible, you should consider off site measures. Opportunities for enhancement might include:

- Providing a new footpath through the new development to link into existing rights of way.
- Restoring a neglected hedgerow.
- Creating a new pond as an attractive feature on the site.
- Planting trees characteristic to the local area to make a positive contribution to the local landscape.
- Using native plants in landscaping schemes for better nectar and seed sources for bees and birds.
- Incorporating swift boxes or bat boxes into the design of new buildings.
- Designing lighting to encourage wildlife.
- Adding a green roof to new buildings.

Natural England's Biodiversity Metric 3.1 may be used to calculate biodiversity losses and gains for terrestrial and intertidal habitats and can be used to inform any development project. For small development sites the Small Sites Metric may be used. This is a simplified version of Biodiversity Metric 3.1 and is designed for use where certain criteria are met. It is available as a beta test version.

You could also consider how the proposed development can contribute to the wider environment and help implement elements of any Landscape, Green Infrastructure or Biodiversity Strategy in place in your area. For example:

- Links to existing greenspace and/or opportunities to enhance and improve access.
- Identifying opportunities for new greenspace and managing existing (and new) public spaces to be more wildlife friendly (e.g. by sowing wild flower strips).
- Planting additional street trees.
- Identifying any improvements to the existing public right of way network or using the opportunity of new development to extend the network to create missing links.
- Restoring neglected environmental features (e.g. coppicing a prominent hedge that is in poor condition or clearing away an eyesore).

Natural England's Environmental Benefits from Nature tool may be used to identify opportunities to enhance wider benefits from nature and to avoid and minimise any negative impacts. It is designed to work alongside Biodiversity Metric 3.1 and is available as a beta test version.

Access and Recreation
Natural England encourages any proposal to incorporate measures to help improve people's access to the natural environment. Measures such as reinstating existing footpaths together with the creation of new footpaths and bridleways should be considered. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Relevant aspects of local authority green infrastructure strategies should be delivered where appropriate.

Rights of Way, Access land and Coastal access
Paragraphs 100 and 174 of the NPPF highlight the important of public rights of way and access. Development should consider potential impacts on access land, common land, rights of way and coastal access routes in the vicinity of the development. Appropriate mitigation measures should be incorporated for any adverse impacts.

Biodiversity duty
Your authority has a duty to have regard to conserving biodiversity as part of your decision making. Conserving biodiversity can also include restoration or enhancement to a population or habitat. Further information is available here.