

Appendix 7.5

Ascerta

Landscape, Arboricultural & Ecological Solutions
for the Built Environment

Brown Hare Survey Report

Manchester Road,
Slattocks,
M24 2SH
Ref: 1172.19

March 2022

Revision	Date	Description

Ascerta

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Brown Hare Survey Report

For

**Manchester Road,
Slattocks,
M24 2SH**

11th March 2022

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Appendix 1 Drawing: *P.1172.19.03 Brown Hare Survey 16.11.21, P.1172.19.04 Brown Hare Survey 14.12.21, P.1172.19.05 Brown Hare Survey 11.01.22, P.1172.19.06 Brown Hare Survey 25.02.22, P.1172.19.07 Brown Hare Transect Route*

Appendix 2 Brown Hare Survey Sheets

Appendix 3 *P.1172.19 Ascerta Preliminary Ecological Appraisal, Manchester Road, Slattocks, M24 2SH May '19*

EXECUTIVE SUMMARY

Four surveys for brown hare have been carried out at Manchester Road, Slattocks, M24 2SH in November 2021, December 2021, January 2022 and February 2022. The four visits were undertaken in suitable weather conditions at the appropriate time of day to check for the presence of brown hares on site.

Overall, a low level of brown hare activity was recorded during the surveys, indicating that a small population of brown hares are present onsite. The majority of brown hares were recorded within the habitats inside the north half and towards the east of the site. During the surveys all brown hares were recorded running across the site and were predominantly located adjacent to field boundaries including hedgerow and fencing.

The following is recommended in order to protect brown hares during the proposed works and post development:

1. Creation of a buffer around the site boundaries to enable connectivity throughout site post development;
2. Retain and enhance habitats for brown hare towards the north, inline with survey findings, incorporating suitable landscaping;
3. Replacement habitat and appropriate management within sections of proposed areas of public open space; and
4. Implementing the Reasonable Avoidance Measures Method Statement for Brown Hare outlined in section 6.1, during the development works.

The above recommendation, if fully implemented, will enable the proposals to meet the requirements of national and local guidance and legislation including the NPPF, The Biodiversity and Geological Conservation policies within the Oldham Council Joint Core Strategy and Development Plan Document (Adopted November 2011), the SPD and The Habitats Regulations.

1.0 Introduction

Ascerta has been instructed by Redrow Homes to carry out brown hare surveys for the site Manchester Road, Slattocks, M24 2SH (hereafter referred to as the site). The site OS grid reference is SD 8916 0940.

Our clients objectives are to identify the ecological constraints of the proposed development site.

The site was visited in November 2021, December 2021, January 2022 and February 2022 by Lizzie Atkinson and Liz Kenyon, when brown hare surveys were carried out in accordance with methods set out in by the North West Brown Hare Project (NWBHP) and the Lancashire Wildlife Trust (LWT) for a survey of the West Pennine Moors (Skeltscher 2007) and was partly based on Harris and Hutchings national hare survey (Hutchings et al 1996).

The survey methodology used was adopted by the North West Brown Hare Project (NWBHP) and the Lancashire Wildlife Trust (LWT) for a survey of the West Pennine Moors (Skeltscher 2007) and was partly based on Harris and Hutchings national hare survey (Hutchings et al 1996).

This report presents the results of the surveys, including proposals to ensure no harm to brown hare populations during works. This is in order to satisfy current wildlife legislation and to achieve our client's objectives.

2.0 Objectives

Our client's objectives are to identify if brown hares are present within the survey area in order to inform measures that will need to be taken to ensure no harm to brown hares during and post development.

Our objectives are to undertake surveys for brown hares and design an appropriate brown hare protection plan that meets the objectives of the client whilst following the 'avoid, mitigate, compensate' hierarchy in accordance with paragraph 118 of the National Planning Policy Framework (NPPF) and other relevant national and local legislation.

3.0 Relevant Legislation

3.1 UK Legislation

Brown Hare are a designated UK Biodiversity Action Plan (BAP) species and are given priority status under the UK Biodiversity Plan with the goal to increase hare populations.

The Hare Preservation Act 1892 is an Act to enact a Close Time for hares during the breeding season. The close time means it is not lawful during the months of system March, April, May, June, or July to sell or expose for sale in any part of Great Britain any hare or leveret.

3.2 The NFFP

The National Planning Policy Framework (NPPF) 2021 has been published to provide further planning guidance. Wildlife, biodiversity and ecological networks are referred to in Section 15 '*Conserving and enhancing the natural environment*'. The NPPF states that the planning system should contribute to and enhance the natural and local environment by: recognising the wider benefits of ecosystem services, minimising impacts on biodiversity and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures. Further guidance is provided within Government Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System.

3.3 Biodiversity Action Plan Species

Background information about the lists of priority species (Species of Principal Importance) can be found within the UK Biodiversity Action Plan (UK BAP). Although this has been succeeded by The '*UK Post-2010 Biodiversity Framework*', many of UK BAP tools are still relevant. BAPs identify habitats and species of nature conservation priority on a UK (UK BAP) and Local (LBAP) scale. Most BAP priority species have Species Action Plans (SAP) and there are also "grouped action plans" for groups of related species with similar conservation requirements. The LBAP relating to this survey area is the Greater Manchester Biodiversity Action Plan.

3.4 Local Legislation

The site lies within Oldham and is covered by the Oldham Council Joint Core Strategy and Development Management Policies Development Plan Document (Joint DPD) (adopted November 2011). Policies 6 and 21 deal with Biodiversity and Geological Conservation and are the policies of relevance here.

4.0 Survey Methods

4.1 Desk Study

A review of UK and Local priority species and habitats known to occur in the region of the site has been undertaken; using the Joint Nature Conservation Committee website and local records from Greater Manchester Ecology Unit (GMEU, P.1172.19 Ascerta Preliminary Ecological Appraisal, Manchester Road, Slattocks, M24 2SH May '19, Appendix 3). Brown hare records will only be referred to within the text of this report. Full record search details are included within P.1172.19 Ascerta Preliminary Ecological Appraisal, Manchester Road, Slattocks, M24 2SH May '19 Appendix 3.

4.2 Field Study

The brown hare surveys were carried out in November 2021, December 2021, January 2022 and February 2022 by suitable qualified ecologists Liz Kenyon and assisted by Lizzie Atkinson. All surveys lasted a minimum of two hours. The survey dates, times and weather conditions are presented in table 5.2.

The survey method followed the NorthWest Brown Hare Project (NWBHP) and the Lancashire Wildlife Trust (LWT) survey methodology. Brown hare surveys follow a transect around a 1km square, however the survey route was partially adapted to accommodate fencing and hedgerow. Surveyors re-joined route at the next nearest point. To cover the site, two 1km transects were followed around the site. The transect squares can be seen in *P.1172.19.07 Brown Hare Transect Route*. Surveyors were aided with close focusing binoculars during the survey.

Surveyors walked the transect route slowly and recorded:

- Number of hares;
- Location;
- Behaviour; and
- Habitat

4.3 Limitations

The surveys were undertaken in suitable weather conditions at the appropriate time of year. There are no limitations considered to affect the conclusions of the report.

5.0 Survey Results

5.1 Desk Study

Two records for brown hare were returned within the site and an additional two records were returned east of the site within 1km. Brown hare were recorded on the site during the phase one habitat survey within the semi improved grassland fields within the north of the site. A dead brown hare was also recorded near the entrance to off-site farm buildings (*P.1166.19 Ascerta Preliminary Ecological Appraisal, Manchester Road, Slattocks, M24 2SH May '19, Appendix 3*).

5.2 Field Survey

Table 5.2: Brown Hare Survey Times and Weather Conditions.

Date	Start	End	Temperature (°C) start/end	Cloud cover (⁰ / ₈)	Wind (Beaufort Scale)	Precipitation
16 th November 2021	07:30	09:30	5.0/6.0	8/8	F0	Dry
14 th December 2021	11.15	13.25	6.0/6.0	8/8	F1	Dry
11 th January 2022	14:10	16:20	6.0/6.0	4/8	F0	Dry
25 th February 2022	09:30	11:30	6.0/6.0	2/8	F0	Dry

On 16th November 2021, no brown hares were recorded within the onsite habitats during the survey.

On 14th December 2021, four brown hares were recorded and the locations are shown on drawing *P.1172.19.04 Brown Hare Survey 14.12.21* in Appendix 1. The first brown hare was identified at 11:20am and was recorded running south-east along the hedge line within a field F7. At 11:45 a brown hare was recorded running east along the fence line within F11. At 12:23 a brown hare was identified running east along the scrub habitat and then traversed north across a stream that borders fields F19 and F20. The last recording was at 13:02 with a brown hare running north within a field F2 adjacent to residential dwellings.

On 11th January 2022, one brown hare was recorded during the survey. The location and habitats are shown on drawing *P.1172.19.05 Brown Hare Survey 11.01.22* in Appendix 1. The brown hare was recorded at 14:20 running south-east along the hedge line in F6.

On 25th February 2022, two brown hare were recorded during the survey and the locations are shown on drawing *P.1172.19.06 Brown Hare Survey 25.02.22* in Appendix 1. The first brown hare was identified at 09:45 and was recorded running east along the hedge line within F6. This brown hare was then recorded in field F7 running south. The second brown hare was recorded at 11:00 and was recorded running east along the hedge line within the site centre in F16.

5.3 Other wildlife

During the survey on 16th November 2021, two buzzards were recorded within a field F9 to the east of the site, the buzzards then flew north-west. The locations and flight paths are recorded on drawing *P.1172.19.03 Brown Hare Survey 16.11.21* in Appendix 1.

During the survey on 14th December 2021, a buzzard was recorded flying north-west over field F18, and a heron was recorded flying north-west over field F2. A kestrel was observed flying north-east across the site over fields F3 and F4. A rabbit (TN1) was also noted within field F19 adjacent to the hedgerow along the southern boundary of the field. The locations and flight paths of species observed are recorded on drawing *P.1172.19.04 Brown Hare Survey 14.12.21* in Appendix 1.

During the survey on 11th January 2022, a kestrel was noted perching with a tree on the northern boundary of field F23 and then flew south. A group of approximately 70 Canadian geese (TN2) were noted foraging within F19 and within P2, the geese flew off site to the west. A buzzard was observed in field F19 flying across the site towards the south. The locations and flight paths of species observed are recorded on drawing *P.1172.19.05 Brown Hare Survey 11.01.22* in Appendix 1.

During the survey on 25th February, two Canadian Geese (TN3) were noted within pond P3 in field F15. Two buzzards were observed flying over fields F15 and F26 and were seen again flying above the stream bordering fields F19 and F20. A single lapwing (TN4) was recorded within the centre of the site in F11. The locations and flight paths of species observed are recorded on drawing *P.1172.19.06 Brown Hare Survey 25.02.22* in Appendix 1.

5.4 Evaluation

The results from the four surveys indicate that a small population of brown hares are present onsite. Brown hares were identified on three of the four surveys, within the majority of the sightings occurring inside the habitats towards the north and east of the site in fields F6, F7, F11, F18. Two brown hare sightings were recorded towards the west and within the centre of the site within fields F11 and F20. During the surveys all brown hares were recorded running across the site and were predominantly located adjacent to field boundaries including hedgerow and fencing.

6.0 Assessment & Recommendations

Brown hares were identified within the survey area predominately within the semi-improved grassland habitats inside the north half and east of the site in fields F6, F7, F11, F18. Two brown hare sightings were recorded towards the west and within the centre of the site within fields F11 and F20 indicating a small population of brown hare are present on site. It is considered that there will be an impact of brown hares during and post development. To avoid harm to Brown Hare during construction work, it is recommended that a Brown Hare Reasonable Avoidance Measures (RAMs) Method Statement (see section 6.1) is implemented.

The site is poorly connected as it is bound by the M62 to the north, the A627 to the east and west and residential dwellings towards the west. To avoid adverse impacts on brown hare post development it is recommended that a buffer is provided along the site boundaries, to provide connectivity throughout the site post development. Lifted sections of garden and plot boundary fencing could encourage a passage for brown hare and other wildlife, further enabling connectivity throughout site.

It is recommended, that areas of suitable grassland habitats are retained and enhanced towards the northern half and east of the site, where the majority of brown hares were recorded during the surveys within fields F6, F7, F11, F18 to conserve the current brown hare population on site and avoid population fragmentation. This could be achieved by liaising with landscapers to create suitable buffers and habitats towards the north of the site as well as along the site boundaries. It is further recommended that existing hedgerows on site are retained and enhanced to provide connectivity and areas of refuge.

To compensate for lost habitat, it is recommended that suitable habitat is provided within areas of public open space (POS). The POS could be divided into more intensively managed areas, along with areas that have a relaxed management programme. The relaxed management areas would replicate suitable habitat for brown hare. This could be provided by a relaxed cutting regime within grassland habitats in POS as well as planting of native, species rich hedgerow to provide areas of refuge and connectivity.

6.1 Reasonable Avoidance Measures Method Statement

Reasonable Avoidance Measures (RAMs) will be implemented during the works to avoid any impact on brown hare that may be present. The RAMs will be as follows:

1. Prior to the start of works, all site operatives working within the site will receive a Tool box Talk (TBT) by the Ecological Clerk of Work (ECoW). The TBT will include information on the ecology, identification and legislation, where relevant, related to brown hare. All operatives must sign a register to confirm they have received the TBT and understand the legal protection of these species once the TBT has been given.
2. The vegetation clearance will be undertaken in two stages under ecological supervision. The first cut will be to 150mm and the second cut will remove vegetation to ground level (with a minimum of 24 hours between cuts). In areas of very short vegetation the material can be removed with machinery under supervision. All vegetation removal will operate from the centre of each area outwards to allow any brown hare that may be present to leave the area;
3. Vegetation clearance applies to all habitats cleared in daytime air temperatures above 5°C. Works must be avoided in cold temperatures or if prior overnight temperatures have been less than 1°C;
4. The cut material is to be chipped and placed in discrete piles outside the working areas or removed from the site;
5. Existing tracks should be utilised for vehicle movements where possible; and
6. Throughout the works all trenches must be covered at night or ramps provided to prevent brown hare from getting stuck. Large pipes must also be covered to prevent brown hare access and risk of these species getting stuck;

It is considered that brown hare will not be adversely impacted within their natural range, provided the recommendations detailed above are followed. In summary these include:

1. Creation of a buffer around the site boundaries to enable connectivity throughout site post development;
2. Retain and enhance habitats for brown hare towards the north, in line with survey findings, incorporating suitable landscaping;
3. Replacement habitat and appropriate management within sections of proposed areas of public open space; and
4. Implementing the Reasonable Avoidance Measures Method Statement for Brown Hare outlined in section 6.1, during the development works.

The above recommendations, if fully implemented, will enable the proposals to meet the requirements of national and local guidance and legislation including the NPPF, The Biodiversity and Geological Conservation policies within the Oldham Council Joint Core Strategy and Development Plan Document (Adopted November 2011), the SPD and The Habitats Regulations.

7.0 References

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Appendix 1

Key

- Site boundary
- ➔ Buzzards 16.11.21

DO NOT SCALE.
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CLIENT:
Redrow Homes

PROJECT:
Manchester Road, Slattocks

DRAWING TITLE:
Brown Hare Survey 16.11.21

SCALE: NTS@A3	DRAWN BY: LA	DRAWING No: P.1172.19.03
DATE: 11/03/2022	CHKD BY: LK	REV: -

Key

- Site boundary
- Brown hare 14.12.21
- Buzzard 14.12.21
- Heron 14.12.21
- Kestrel 14.12.21
- Target Notes
- TN1 - Rabbit

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DRAWING TITLE:
Brown Hare Survey 14.12.21

SCALE: NTS@A3	DRAWN BY: LA	DRAWING No: P.1172.19.04
DATE: 11/03/2022	CHKD BY: LK	REV: -

Key

- Site boundary
- Brown hares 11.01.22
- Buzzards 11.01.22
- Kestrel 11.01.22
- Target Notes
- TN2 - Geese

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Manchester Road, Slattocks

DRAWING TITLE:
Brown Hare Survey 11.01.22

SCALE: NTS@A3	DRAWN BY: LA	DRAWING No: P.1172.19.05
DATE: 11/03/2022	CHKD BY: LK	REV: -



Key

- Site boundary
- Brown hares 25.02.22
- Buzzards 25.02.22
- Target Notes
- TN3 - Geese
- TN4 - Lapwing

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CLIENT:
Redrow Homes

PROJECT:
Manchester Road, Slattocks

DRAWING TITLE:
Brown Hare Survey 25.02.22

SCALE: NTS@A3	DRAWN BY: LA	DRAWING No: P.1172.19.06
DATE: 11/03/2022	CHKD BY: LK	REV: -



-- Site boundary
1km2

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PROJECT:
Manchester Road, Slattocks

DRAWING TITLE:
Brown Hare Transect Route

SCALE: NTS@A3	DRAWN BY: LA	DRAWING No: P.1172.21.07
DATE: 11/03/2022	CHKD BY: LK	REV: -

Appendix 2

[illegible]

2 buzzards within F9

[illegible]

Buzzards within F19 (NW)

Heron F2 (NW)

Kestrel F3/F4 (NE)

Rabbit F19

[illegible]

Buzzards within F19 (S)

Kestrel F23 (S)

Geese (approx. 70) in P2 /F19 (Flew south)

[illegible]

2 Buzzards within F15/F26 and F19/F20 (S)

Kestrel F23 (S)

2 Geese in P3 /F15

Lapwing F11

Appendix 3

Ascerta

Landscape, Arboricultural & Ecological Solutions
for the Built Environment

Preliminary Ecological Appraisal

Manchester Road,
Slattocks,
M24 2SH
Ref: P1172.19

July 2019
(see revision dates below)

Rev	Date	Details

This document contains sensitive information regarding the location of a badger sett. The report is issued in confidence and on the basis that the material will not enter the public domain.

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P.1166.19

Preliminary Ecological Appraisal

Of

**Manchester Road,
Slattocks,
M24 2SH**

For

Redrow Homes

25 July 2019

Field Work by	Neil Everett BSc (Hons) Grad CIEEM (Natural England Class 1 Bat Licence 2018-37995-CLS-CLS) and Tosha Allen BSc (Hons) (Natural England Class 1 GCN Licence 2015-14620-CLS-CLS)
Document Author	Tosha Allen BSc (Hons)
Technical Review	Dr Rosalind King MCIEEM
QA Review & Approval	Alistair McLeod

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Appendix 1	Drawing P.1172.19.01 <i>Phase One Habitat Survey</i>
Appendix 2	Drawing P.1172.19.02 <i>Ecological Constraints and Opportunities Plan</i>
Appendix 3	Species Lists and Target notes
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EXECUTIVE SUMMARY

A Preliminary Ecological Appraisal has been carried out at Manchester Road, Slattocks, M24 2SH on 22nd, 29th and 30th May 2019 by Neil Everett and Tosha Allen. The assessment comprised a desk study and biological records search, as well as a site walkover survey in order to map habitat types. The survey was extended to assess the potential for protected species to use the site. The assessment provides baseline data as to current site conditions and where appropriate allows recommendations to be made in respect of further potential work in order to satisfy current wildlife legislation.

The survey area comprises an area of agricultural land and associated buildings (the majority of buildings lie outside the red line boundary). The habitats on site comprise semi improved, improved and wet grassland, scattered trees, waterbodies, watercourses, hedgerows of varying species richness, scrub and tall ruderal vegetation of mixed species diversity.

Assessed against the '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' 2nd edition (2018), the habitats range in ecological value from **to be confirmed to within the Zone of Influence**. Some of the habitats are likely to be lost to the proposals. Recommendations have been made to contribute towards no net loss of biodiversity as a result of any proposals for future redevelopment of the site.

The site provides habitat for nesting birds, badger, reptiles, hedgehog, amphibians, water vole, white-clawed crayfish and bat species. Provided the recommendations below are followed these species will not be adversely affected by the proposals.

The recommendations, if fully implemented, will enable the proposals to meet the requirements of national and local guidance and legislation including the NPPF and policies NE3, NE4, NE5, NE8, NE9 and G7 of the Rochdale Metropolitan Borough Council Unitary Development Plan (Adopted June 2006) and the Rochdale Core Strategy (Adopted October 2016 and updated February 2017).

Recommendations

1. Bat activity surveys to confirm the level of bat commuting and foraging activity throughout the site to be carried out between May and September in suitable weather conditions. Between six and 12 nocturnal bat activity surveys will be required (one to two per month during the bat active season) together with deployment of static bat detectors in hedgerows that are to be lost within the proposals to determine bat use of these as commuting habitats.
2. For any trees or buildings lost to the proposals, a detailed daytime inspection would be required in the first instance. This can be undertaken at any time of year. Further nocturnal surveys (between May and September) may be required following the daytime inspection if the buildings or trees provide suitable shelter for roosting bats;
3. Further surveys to assess badger activity within the site if proposals are to take significant areas of badger habitat. Use of Reasonable Avoidance Measures (RAMs) to avoid harm to badger during construction will be required and a Badger Mitigation Strategy may be needed to support the application;
4. Further survey of the watercourses present within the site to assess the suitability for white-clawed crayfish.
5. Further surveys to assess the activity of brown hare within the site to be carried out between November and February;

6. Avoiding vegetation removal or any demolition or roof works of the buildings during the bird breeding season (1 March to 31 August inclusive) or undertaking a survey for breeding birds and ensuring any active nests found are protected within a suitable buffer zone until they are no longer in use;
7. Mitigation for the loss of nesting bird habitat with the provision of bird boxes such as open fronted nest boxes, 26mm hole nest boxes and 32mm hole nest boxes;
8. The use of Reasonable Avoidance Measures (RAM's) in relation to hedgehog, to include the strimming and hand clearing the bramble scrub and storage of construction materials on pallets to avoid harm to hedgehog;
9. Provision of a hedgehog hibernaculum on site to mitigate for loss of the bramble scrub, or enhance the site for hedgehog;
10. Provision of gaps of 13cm by 13cm under fences to enable hedgehog continued access across the site following development;
11. Lighting sensitive to the needs of bats, designed to avoid overspill onto key habitats including the River Beal and any identified during the bat activity surveys;
12. Habitat enhancement with the provision of bird and boxes, hedgehog, amphibian, and reptile hibernacula and bug boxes. The provision of new ponds, wet land area, woodland or shelter belts and hedgerow planting to improve connectivity between existing and new habitats could also enhance the site for wildlife. Suitable landscaping within the residential development incorporating species that provide a food or shelter resource to wildlife would also be beneficial to biodiversity.

1.0 Introduction

Ascerta has been instructed by Redrow Homes to carry out a preliminary ecological assessment of land at Manchester Road, Slattocks, M24 2SH (hereafter referred to as the site). The site central OS grid reference is SD 89167 09404.

Our client wishes to identify the constraints and opportunities within the site with a view to secure continued allocation of the land for housing within the Local Plan. The ultimate aim of the client is for redevelopment of the site for residential purposes.

The site was visited on 22nd, 29th and 30th May 2019 by Neil Everett and Tosha Allen when a Preliminary Ecological Appraisal, which included an assessment of the potential for protected species to be using the site or surroundings, was carried out in accordance with the *Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit* (JNCC, 2010). The report was prepared following methods detailed in the CIEEM 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (2018) and 'Guidelines for Ecological Report Writing' (2017). This report presents the results of the survey including evaluation of habitats on site and potential for protected species to be using the site. The report includes recommendations for further actions where applicable in order to satisfy current wildlife legislation and to achieve our client's objectives.

2.0 Objectives

Our client's objectives are to ascertain the potential ecological constraints and opportunities of the site to inform potential future redevelopment of the site for residential purposes.

Our objectives are as follows:

- Identify and evaluate any features of ecological value and the potential of the site to support protected species based on the walkover survey and biological records search;
- Identify designated sites within 2km of the site;
- Review protected species records within 1km of the site boundary;
- Map the habitats within the site using JNCC (2010) methods;
- Provide recommendations for further species-specific surveys and mitigation measures where current legislation requires;
- Provide recommendations that seek to enhance the ecological value of the site;
- Provide recommendations to assist our clients in achieving their objectives whilst satisfying current wildlife legislation.

3.0 Relevant Legislation

3.1 European Legislation

The following Directives have been adopted by the European Union and provide protection for fauna and flora species of European importance and the habitats which support them:

- Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive);
- Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive).

3.2 UK Legislation

The Habitats Directive has been transposed into national legislation through the Conservation of Habitats and Species Regulations 2017 (The Habitats Regulations). This provides for the designation and protection of 'European Sites' (SPAs, SACs and Ramsar Sites, including proposed or potential European Sites) and the protection of 'European Protected Species'.

The key UK legislation relating to nature conservation is the Wildlife and Countryside Act 1981 (as amended) (W&C Act). This Act is supplemented, *inter alia*, by provision in the Countryside and Rights of Way (CROW) Act 2000, and the Natural Environment and Rural Communities Act 2006 (NERC Act). Additional species and habitat specific UK legislation includes the Protection of Badgers Act 1992 and the Hedgerow Regulations 1997.

The UK legislation is due to be updated, with the publication of The Environment (Principles and Governance) Bill, which is due to be passed through parliament in the summer of 2019. The draft Environment Bill sets out how the UK will maintain environmental standards following leaving of the EU. The Bill builds on the vision of the 25 Year Environment Plan, with the ambition from the government to leave the environment in a better state than it was when inherited.

The Defra Biodiversity Metric is being implemented to work alongside the Environment Bill. This tool calculates potential biodiversity impacts as a result of development and identifies mitigation and compensation requirements to ensure no net loss of biodiversity. In addition, it identifies measures that can be implemented in order to meet Biodiversity gain as a result of development. It is due to be released officially by Defra in 2019, with trial version 2.19, prepared by Warwickshire Council, being used in the interim.

The National Planning Policy Framework (NPPF) 2019 has been published to provide further planning guidance. Wildlife, biodiversity and ecological networks are referred to in Section 15 '*Conserving and enhancing the natural environment*'. The NPPF states that the planning system should contribute to and enhance the natural and local environment by: recognising the wider benefits of ecosystem services, minimising impacts on biodiversity and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures. Further guidance is provided within Government Circular 06/05: *Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within The Planning System*.

Species and Habitats of Principal Importance

Species and Habitats of Principal Importance are listed under section 41 of the NERC Act and are a material consideration in planning decisions. Planners require relevant, up to date information from ecological surveys in order to assess the effects of a proposed

development on biodiversity as Councils have a statutory obligation under section 40 of the NERC Act to consider biodiversity conservation in the determination of planning applications.

Background information about the lists of priority habitats and species (Species and Habitats of Principal Importance) can be found within the UK Biodiversity Action Plan (UK BAP). Although this has been succeeded by The 'UK Post-2010 Biodiversity Framework', many of UK BAP tools are still relevant. BAPs identify habitats and species of nature conservation priority on a UK (UK BAP) and Local (LBAP) scale. Most BAP priority habitats and species have Habitat Action Plans (HAP) and Species Action Plans (SAP) and there are also "grouped action plans" for groups of related species with similar conservation requirements. The LBAP relating to this Site is the Greater Manchester Biodiversity Action Plan.

Badgers

The legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992.

Under the Protection of Badgers Act 1992 it is an offence *inter alia* to:

- Wilfully kill, injure or take a badger, or to attempt to do so;
- Cruelly ill-treat a badger; or
- Intentionally or recklessly interfere with a badger sett by (a) damaging a sett or any part of one; (b) destroying a sett; (c) obstructing access to or any entrance of a sett; (d) causing a dog to enter a sett; or (e) disturbing a badger when it is occupying a sett.

The Badger Act 1992 defines a badger's sett as "*any structure or place which displays signs indicating current use by a badger*"

Natural England can issue licences to enable works to continue that may affect a protected species. In relation to disturbance of badgers, Natural England (2009) gives guidelines on disturbance which will require a licence. These includes: "*using very heavy machinery (generally tracked vehicles) within 30 metres of any entrance to an active sett; using lighter machinery (generally wheeled vehicles), particularly for any digging operation, within 20 metres; light work such as hand digging or scrub clearance within 10 metres. There are some activities which may cause disturbance at greater distances (such as using explosives or pile driving) and these should be given individual consideration.*"

Bats

In England, all bats and their roosts are protected under the Conservation of Habitats and Species Regulations 2017 and the Wildlife & Countryside Act 1981 (as amended). Several species of bat are also highlighted as Priority Species under the UK Biodiversity Action Plan and within the Local BAP.

Under the current legislation as summarised on pages 8 and 9 of the Bat Surveys for Professional Ecologists Good Practice Guidelines – 3rd Edition (2016) it is a criminal offence to:

"To kill, capture, injure or take a wild bat;

- *To damage or destroy a place used by a bat for breeding or resting. All offences of this nature are identified within the Habitats Regulations. This offence is*

unique in that it can be committed accidentally. No element of intentional, reckless or deliberate action needs to be evidenced;

- *To disturb bats anywhere (roosts, flight lines or foraging areas) if levels of disturbance can be shown to impair their ability to survive, to breed or reproduce, to rear or nurture their young, to hibernate or migrate or to affect significantly local distribution or abundance;*
- *To intentionally or recklessly disturb a bat, whilst it is occupying a place of shelter or protection;*
- *To intentionally or recklessly obstruct access to any place used by a bat for shelter or protection; and*
- *To be in possession or control of a bat alive or dead (or any part of a bat or anything derived from a bat, although bat droppings are generally considered to be acceptable), or to transport a bat, to sell or exchange a bat or to offer to sell or exchange a bat taken from the wild."*

Breeding Birds

Breeding Birds are protected under the Wildlife and Countryside Act which make it an offence to:

- *intentionally kill, injure or take any wild bird or take, damage or destroy the nest of any wild bird whilst it is in use or being built;*
- *intentionally take or destroy the egg of any wild bird;*
- *have in one's possession or control any wild bird, dead or alive, or any part of a wild bird (including eggs), which has been taken in contravention of the Act or the Protection of Birds Act 1954;*
- *intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.*

Great Crested Newt

The great crested newt (*Triturus cristatus*) is fully protected under the Wildlife and Countryside Act, 1981 (as amended) and the Habitats Regulations, 2017. It is also a Species of Principal Importance. The legislation makes it an offence to:

- *Deliberately (or intentionally) kill, injure or capture (or take) a great crested newt, or great crested newt egg or eft;*
- *Deliberately (intentionally) damage or destroy any breeding site or resting place (i.e. pond, refuge, hibernaculum);*
- *Deliberately or recklessly obstruct access to any breeding site or resting place;*
- *Deliberately, intentionally or recklessly disturb a great crested newt, in particular disturbance which is likely to:*
 - *impair the ability of the great crested newt to survive, breed, reproduce, or to rear or nurture young;*
 - *impair the ability of the great crested newt to hibernate or migrate; or significantly affect the local distribution or abundance of great crested newts*

Invasive Species

It is an offence under Section 14(2) of the Wildlife and Countryside Act 1981 to 'plant or otherwise cause to grow' in the wild any plant in Schedule 9 Part II.

Other Aquatic Species

Water vole (*Arvicola amphibious*) are a Species of Principal Importance and also fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to:

- intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection;
- intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose;
- intentionally kill, injure or take water voles;
- possess or control live or dead water voles or derivatives;
- sell water voles or offer or expose for sale or transport for sale; and
- publish or cause to be published any advertisement which conveys the buying or selling of water voles.

Otter (*Lutra lutra*) are similarly protected under the Wildlife and Countryside Act, 1981 (as amended) and have additional protection as a European Species under The Habitats Regulations 2017.

3.3 Local Policy

The site lies within the Rochdale Borough Council administrative area and is subject to the Rochdale Metropolitan Borough Council Unitary Development Plan (Adopted June 2006) and the Rochdale Core Strategy (Adopted October 2016 and updated February 2017). The policies of relevance here are policies NE3, NE4, NE5, NE8 and NE9 and policy G7 respectively and these policies have been taken into account when preparing this report.

The following table provides a summary of the main species within the UK that could be encountered within or within proximity of this development site, together with the legislation that affords them protection.

Table 3.1 Protected Species and the Associated Legislation.

Species		Legislation
Amphibians	Great crested newt (<i>Triturus cristatus</i>)	Schedule 5, W&C Act 1981 (as amended); Schedule 2, The Habitats Regulations 2017; and Section 41, NERC.
Mammals	Badger (<i>Meles meles</i>)	Protection of Badgers Act 1992.
	All species of bat	Schedule 5, W&C Act 1981 (as amended); Schedule 2, The Habitats Regulations 2017; and Section 41, NERC.
	Brown hare (<i>Lepus europaeus</i>)	Schedule 5, W&C Act 1981 (as amended); and Priority Species under the UK Post-2010 Biodiversity Framework.
	Water vole (<i>Arvicola amphibious</i>)	Schedule 5, W&C Act 1981 (as amended) and Section 41, NERC.

Birds	All wild birds	Schedule 5, W&C Act 1981 (as amended) and Section 41, NERC.
Reptiles	Adder (<i>Vipera berus</i>) Common lizard (<i>Zootoca vivipara</i>) Grass snake (<i>Natrix natrix</i>) Slow worm (<i>Anguis fragilis</i>)	Schedule 5, W&C Act 1981 (as amended) and Section 41, NERC.
Crustacean	White-clawed crayfish (<i>Austropotamobius pallipes</i>)	Schedule 5, W&C Act 1981 (as amended) and Section 41, NERC.

It is a criminal offence to intentionally, wilfully kill, injure or take any of the aforementioned protected species or to destroy or disturb its habitat.

4.0 Survey Methods

The Preliminary Ecological Appraisal involved the collection and review of data from a desk study and field survey along with assessment of the value of the habitats following CIEEM guidelines.

4.1 Desk Study

A review of the designated sites and habitats within 2km of the site has been undertaken using the Multi-Agency Geographic Information for the Countryside (MAGIC) and the Natural England websites.

A review of UK and Local priority species and habitats known to occur in the region of the site has been undertaken; using the Joint Nature Conservation Committee website and local records from Greater Manchester Ecology Unit (Appendix 5).

4.2 Field Survey

A walkover survey of the site was conducted on 22nd, 29th and 30th May 2019, when the habitat types and features of ecological interest were identified and mapped in compliance with the Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit (JNCC, 2010). The survey methods involve the recording and mapping of all habitat types and ecological features present on site, including the identification of the main species present and examination of the potential for any protected species. Habitats were mapped and target notes made for any interesting features.

The surveys particularly focused on the following species and habitat features:

- Mammals (badgers, bats, otter and water vole);
- Birds (including birds that are designation species of Ramsar or SPA sites) ;
- Amphibians and reptiles;
- Invertebrates;
- Hedgerows and boundaries;
- Invasive plant species; and
- Plant communities and trees.

4.3 Bat Survey Methods

The survey methods followed the guidelines set out by the Bat Conservation Trust Bat Surveys for Professional Ecologists Good Practice Guidelines – 3rd Edition (2016). Habitats, Buildings and Trees were assessed for suitability for use by bats and categorised independently using table 4.1 page 35 within the Bat Conservation Trust Guidelines (Collins, 2016).

Preliminary Ecological Appraisal for Bats

Habitats on site were assessed for their suitability for bats to use them for roosting, commuting and foraging both on the site and surrounding area. Commuting and foraging habitat suitability was categorised **low** to **high**. Commuting and foraging habitat valued as Moderate or above may need further survey effort if lost to the proposals.

Preliminary Roost Assessment Trees

All trees were inspected for Potential Roost Features (PRFs). Features searched for included: Natural or woodpecker holes, cracks/splits in major limbs, loose bark, hollows/cavities, dense epicormic growth, bird and bat boxes. Where such features were found they were investigated for scratches or staining, bat droppings and smoothing of

surfaces around entry points. Trees assigned a suitability of **moderate** or above may require further inspection if they are to be lost to the development.

Table 4.1: Guidelines for assessing Potential Roost Features (PRFs), commuting and foraging habitat within a proposed development site. Guidelines taken from table 4.1 page 35 of the Bat Conservation Trust Bat Surveys for Professional Ecologists Good Practice Guidelines – 3rd Edition (2016).

Suitability	Roosting Habitats	Commuting and Foraging Habitats
Negligible	<i>Negligible habitat features on site likely to be used by roosting bats.</i>	<i>Negligible habitat features on site likely to be used by commuting or foraging bats.</i>
Low	<i>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation ^b). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. ^c</i>	<i>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</i>
Moderate	<i>A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions^a and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).</i>	<i>Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</i>
High	<i>A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ^a and surrounding habitat.</i>	<i>Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.</i>

^a For example, in terms of temperature, humidity, height above ground level, light levels of disturbance.

^b Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

^c This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI,2015).

4.4 Badger Survey Methods

The site was searched for setts and badger field signs including foraging areas, latrines and tracks. Attention was paid to the presence of the following field signs:

- Setts: single holes or a series of holes likely to be interconnected underground;
- Latrines: badgers usually deposit faeces in excavated pits;
- Paths and footprints;
- Scratching posts: at the base of trees;
- Snuffle holes: areas where badgers have searched for insects;
- Day nest: bundles of vegetation where badgers may sleep above ground; and
- Traces of hair.

4.5 Water vole and Otter

The watercourses within the site were briefly assessed for use by otters and water voles following methods outlined in *Chanin P (2003). Monitoring the Otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough* and Strachan, R., Moorhouse, T., Gelling, M. (2011). *Water Vole Conservation Handbook*, 3rd Edition. Wildlife Conservation Research Unit: Abingdon.

Signs of otter use including prints, spraints, couches or holts were searched for from the banks. Signs of water vole use, including latrines, footprints, feeding remains, runs and burrows were searched for along the banks of the watercourses.

4.6 Evaluation

Habitats and species on the site were evaluated following the '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' 2018. A geographical frame of reference is assigned to each habitat and species, with International Value being most important, then National, Regional, County, District, Local and lastly, within the immediate Zone of Influence (Zoi) of the proposals only

Value judgements are based on characteristics that can be used to identify ecological resources or features likely to be important in terms of biodiversity. These include site designations such as SSSIs. For undesignated features, the size, conservation status (locally, nationally or internationally), and the quality of the ecological resource are considered. Ecological resource quality can refer to habitats (for instance if they are particularly diverse, or a good example of a specific habitat type), other features (such as wildlife corridors or mosaics of habitats) or species populations or assemblages.

Although we cannot assess the survey findings fully in relation to the draft Environment Bill and Biodiversity Metric, the recommendations detailed within this report aim to meet requirements of the Environment Bill and Biodiversity Metric as far as possible at this stage.

4.7 Limitations

The site visit was undertaken in late May, an optimal time of the year for phase 1 habitat surveys. Three fields within the site were not accessible due to livestock and calves present within the fields. These fields were surveyed from the boundaries, however this is not considered a limit to the conclusions of the report based on the habitats found within the site and the high-level nature of the report. The visits provide only a snapshot of habitats and species present at the time of survey. This limitation has been taken into account within the report conclusions.

5.0 Survey Results

5.1 Desk Study

Three statutory sites were identified within a 2km radius of the proposed development site (with distance and direction from the site):

- Hopwood Woods Local Nature Reserve (LNR) (380m south west)
- Rochdale Canal Sites of Special Scientific Interest (SSSI) and Special Areas of Conservation (SAC)

Six non-statutory sites were identified within 1km of the proposals (with distance and direction from the site):

- Lords Wood Site of Biological Importance (SBI) (380m south west);
- Hopwood Clough SBI (870m, south west);
- Rochdale Canal SBI (Scowcroft to Warland, west) running north / south to the west of the site, with the nearest point lying 135m from the site boundary);
- A627m by Tandle Hill SBI (40m south east and 645m north);
- Gerrard Wood SBI (235m south east); and
- Tandle Hill Country Park SBI (700m, east)

The site lies within a Natural England SSSI Impact Risk Zone, and the development will trigger a consultation with Natural England as the proposals fall within the likely impacts to the SSSI. The category that would currently trigger a consultation with Natural England if residential development is of 100 units or more.

Following a review of records held by the Greater Manchester Ecology Unit (GMEU), several priority species that have the potential to occur within the vicinity of the proposed development have been identified. These include bats, reptile, GCN, brown hare, water vole, bird species, white clawed crayfish and badger.

Four European Protected Species Licence (EPSL) applications within 2km of the site since 2011 were identified using Magic Maps;

- EPSM2010-2397 for the damage and destruction of a breeding site and destruction of a resting place for common pipistrelle (1,075m south west).
- EPSM2012-5119 for the destruction of a resting place for common pipistrelle (944m north east).
- 2016-20262-EPS-MIT for the destruction of a resting place for common pipistrelle (758m north east); and
- 2017-31535-EPS-MIT to impact a breeding site, damage and destruction of a breeding site and damage and destruction of a resting place for GCN (2km west).

One priority habitat is present within the site. This habitat is deciduous woodland and is located along the northern boundary.

A list of key habitats is shown in **Table 5.2** below and a summary description of key habitats within the survey area is provided in **Section 5.2**. Notes on the presence or potential presence of protected species are provided in **Section 5.3**. The Phase 1 Habitat map can be found in **Appendix 1**. The Target Notes (TN) and lists of species recorded during survey are presented in **Appendix 3**.

5.2 Habitat Survey

The site lies south of junction 20 on the M62 carriageway, located south of Rochdale. The site comprises an area of farmland. The habitats on site comprise semi improved grassland of varying species richness, improved grassland, hedgerows, waterbodies and watercourses, scrub, scattered trees and tall ruderal vegetation. These habitats are presented on plan P.1172.19.01 (Appendix 1).

The site is bound by Thornton New Road to the north, the A672 to the east, Manchester Road (A664) to the west and Slattocks Link Road (A664) to the south.

Within the wider environment there is agricultural land, residential dwellings, Manchester Golf Course, industrial and retail units.

Weather conditions during the survey are detailed within Table 5.1 below:

Table 5.1: Weather conditions

Date	Temperature (°C)	Cloud cover	Wind (Beaufort Scale)	Rain
22 nd May 2019	16	7/8	F1	Dry
29 th May 2019	13	5/8	F2	Dry
30 th May 2019	16	8/8	F1	Dry

The weather conditions on 22nd, 29th and 30th May 2019 were appropriate for this type of survey.

Table 5.2 on the following pages details the habitat types recorded on the site.

Description	Photograph
Semi-improved grassland: The site is dominated by semi improved grassland with varying levels of species richness. The height of the sward ranges between 30-50cm. The grassland is mown once a year as discussed with the tenant on 29th May 2019. Species present include Yorkshire fog, False oat grass, Cock's foot, Perennial ryegrass, Meadow buttercup, White clover, yellow vetchling and common mouse ear for example. Additional species are listed within Appendix 3. This habitat is of value to amphibians, small mammals and birds. This habitat is common within the wider landscape. Bats may also use the areas for forage. The longer sward also provides good foraging habitat for barn owl. This type of habitat would need to be replaced with wildflower planting or areas of grassland under a relaxed mowing regime.	
Ecological Value	Within the Zone of Influence
Further Work	Detailed vegetation surveys, brown hare and bat activity surveys may be required if significant areas of this grassland are to be lost to the proposals to inform appropriate mitigation (see section 5.3 below).
Improved Grassland: Areas of improved grassland grazed by cattle are located within the north of the site. The grass sward height is approximately 5cm. Species present include yorkshire fog and perennial ryegrass. Additional species are listed within Appendix 3. The areas are of value to birds, small mammal species and amphibians. Bats may also use the areas for forage. This type of habitat is common within the wider environment and can be replaced with wildflower planting or areas of grassland under a relaxed mowing regime.	
Ecological Value	Within the Zone of Influence
Further Work	Detailed vegetation surveys are unlikely to be required as this habitat is intensely managed. However, it could be of value to bats therefore, bat activity surveys are likely to be required to inform appropriate mitigation (see section 5.3).

Description	Photograph
Tall Ruderal: Small pockets of tall ruderal vegetation have established along field margins and footpaths. These are dominated by nettle, broadleaved dock and common hogweed. This habitat is common in the wider landscape and any loss can be mitigated for by the provision of areas of wildflowers.	
Ecological Value	Within the Zone of Influence
Further Work	Detailed vegetation surveys are unlikely to be required due as this habitat is common in the wider area and not species rich.
Wet Grassland: Areas of wet grassland are present throughout the site. The locations of this habitat are shown on plan P.1172.19.01 in Appendix 1. The areas are of value to birds, small mammal species and amphibians. Bats may also use the areas for forage. This type of habitat is less common within the wider environment and can be replaced with water meadow wildflower planting or areas of grassland under a relaxed mowing regime.	
Ecological Value	Within the Zone of Influence
Further Work	Detailed vegetation surveys, nesting bird surveys and bat activity surveys may be required if significant areas of this grassland are to be lost to the proposals to inform appropriate mitigation (see section 5.3 below).

Description	Photograph
Hedgerows: Boundary hedgerows border the semi-improved and improved grassland fields within the site. The hedgerows were not surveyed under the Hedgerow Regulations Act 1997 methodology during the survey. Flora species present within the hedgerows were noted during the survey and are listed within Appendix 3. Hawthorn, blackthorn, ash and elder were present within the majority of hedgerows within the site. This habitat is suitable for small mammals, birds, bats. This habitat is common within the wider landscape however, further surveys are required to assess the importance of the hedgerows present within the site to inform further mitigation requirements.	
Ecological Value	Within the Zone of Influence
Further Work	Detailed hedgerow surveys under the Hedgerow Regulations Act 1997 may be required to determine their importance and assess further mitigation for the loss.

Description	Photograph
Running Water: A stream (slow flowing) is located within the south east of the site. The stream follows the field boundaries and is culverted in places. The water within the stream is flowing from north west to south east direction. The stream is heavily vegetated and surrounded by dense scrub and wet grassland. The water within the stream located at approximate OS central grid reference SD 887 091 was orange in colour. The banks of the drainage ditches are earth and could provide water vole habitat. Species present within the stream and its banks include rosebay willow–herb, soft rush and yellow flag iris. The drainage ditches connect habitats of value and are of ecological value in their own right. Therefore, measures will need to be taken to ensure the water is not contaminated during works or once the proposals are implemented. The drainage ditches are of value to birds and small mammal species. Bats may also use the areas for forage and as connectivity to more favourable habitat.	 Figure 1: drainage ditch located at SD 8877091  Figure 2: Heavily vegetated drainage ditch located at SD885088
Ecological Value	Local
Further Work	Water vole surveys may be required if works within 5m of the ditches are proposed (see section 5.3 below).

Description	Photograph
Standing water: Five ponds and a wet ditch are present within the site. All ponds and one ditch were assessed for their suitability to support amphibians. This was done using the Habitat Suitability Index (HSI). A summary of the assessment is listed below, and detailed results are located within Appendix 4. Pond 1- This pond is located within the north of the site. The pond is approximately 330m² and is located within a SI grassland field. This pond is a fishing pond and two Canada geese were present at the time of survey. The pond has a HSI score of 0.48 'Poor'. Pond 2- This pond is man-made and is approximately 1,200m². Two Canada geese and two goslings were present at the time of survey. This pond has a HSI score of 0.44 'Poor'. Pond 3- This pond is located within a semi-improved grassland field. The pond is surrounded by marginal vegetation including yellow flag iris and soft rush. This pond is approximately 524m² and has a HSI score of 0.83 'Excellent'. Pond 4- Pond 4 is located within an improved grassland field grazed by cattle. This pond is approximately 156m² and has a HSI score of 0.70 'Good'. Pond 5- Pond 5 is a fishing pond located within the south of the site. This pond lies within a semi-improved grassland field. The pond is approximately 2,662m² and has a HSI score of 0.45 'Poor'. Ditch- A ditch is located within the north east of the site. Standing water is present within the ditch. The ditch has a HSI score of 0.66 'Average'. The areas of habitat are of value to birds and amphibians. Bats may use this habitat for foraging.	 Figure 3: Pond 1  Figure 4: Pond 2  Figure 5: Pond 3

	 Figure 6: Pond 4  Figure 7: Pond 5  Figure 8: Ditch
Ecological Value	Within the Zone of Influence

Further Work	There are suitable aquatic and terrestrial habitat present within the site to support GCN and other amphibians. Therefore, further survey requirements are required. It is recommended that eDNA samples are taken from all five ponds and one wet ditch present to assess if GCN are present or likely absent. If the analysis of the samples returns a positive result additional population size class surveys will be required to assess the population size present and inform mitigation.
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Description	Photograph
Dry ditch: One dry ditch is present within the site. this is located within the semi-improved grassland fields within the north of the site. It is though that the ditch becomes wet during the wetter months of the year. The ditch is vegetated with grass species. This habitat is common within the wider landscape.	No photo available
Ecological Value	Unable to confirm at present
Further Work	Further survey is not required.
Scrub: Dense willow scrub is present along the drainage ditch within the south west of the site. Scattered hawthorn scrub is also present within the site as per the photograph. The locations of this habitat are displayed on the phase 1 habitat plan P.1172.19.01 in Appendix 1. These areas of habitat are of value to birds and small mammals. This habitat is common within the wider landscape and the loss can be mitigated with native species planting incorporated within the design and bird nest boxed erected onto retained trees and new dwellings.	
Ecological Value	Within the Zone of Influence
Further Work	Nesting bird surveys may be required if this habitat is to be cleared between 1 March and 31 August (see section 5.3 below)

Description	Photograph
Scattered Trees: Trees occur throughout the site. Species present include predominantly silver birch and willow. The trees are of value to birds and small mammal species. Some are of value to nesting birds and roosting bats. Bats may use the trees for forage and as a commuting corridor to surrounding habitats. This type of habitat is common within the wider environment. However, the proposals should seek to retain as many of the mature scattered trees as possible as they could not be replaced in the short term.	
Ecological Value	Within the Zone of Influence
Further work	The more mature trees would require a more detailed assessment during the day to determine bat roost potential if they are to be lost to the proposals, with any recommended bat surveys completed prior to determination of any future planning application to inform mitigation requirements for bats (see 5.3 below).
Building: One stable is present within the site. The stable is constructed with breeze block structure with a metal corrugated roof. The building is of value to nesting birds and could be of value to bats.	
Ecological Value	Within the Zone of Influence
Further work	Nesting bird surveys may be required if this building is to be demolished between 1 March and 31 August (see section 5.3 below). A more detailed assessment in relation to bats would also be required.
Bare ground: An area of bare ground is located within the north of the site at a gate entrance. This area consists of bare earth where vehicles have been entering the field.	No photo available
Ecological Value	N/A
Further work	N/A

Earth mound: earth mound is located in the east of the site and adjacent to the area of bare ground. This habitat is of value to reptiles and amphibians.	
Ecological Value	Within the Zone of influence
Further work	Precautionary working methods may be required for the removal of the earth mound.

5.3 Protected and Invasive Species

Species Results	Evaluation and Recommendations
Badger: Seven records of badger setts and signs have been returned within 1km of the site. The closest record of badger was field signs located along the M62 carriageway embankment approximately 14m north of the site boundary. The closest record of a sett is located approximately 219m south west of the site boundary. Two badger setts were identified within the site during the survey. The locations of the setts are shown on drawing P.1172.19.01 as Target notes 5 and 6. The site provides good badger habitat and connectivity to the wider environment. Mammal tracks were evident throughout the north and east of the site indicating that badger may be foraging and commuting across the area.	As badger was found to be using the site for foraging, commuting and sett creation, further surveys will be required to determine badger use throughout the site. Measures will need to be taken to ensure no harm to badger as a result of the proposals and would likely require the inclusion of wildlife corridors along key badger commuting routes, to enable continued badger access across the site. To avoid harm to badger that may stray on to site during construction it is advised that spoil heaps are fenced off to prevent badger access and that deep excavations have ramps to enable badger escape should they fall in. It is likely a Badger Method Statement would be required to support the proposals at planning application stage, which may need to be supported by camera trap surveys that can be undertaken at any time of year. Bait marking surveys may be required if any setts are proposed to be closed under licence.
Ecological Value	Within the Zone of Influence

Species Results	Evaluation and Recommendations
Bats: Thirteen roosts and 21 records of activity were returned within 1km of the site. The closest record was for a pipistrelle sp. roost located approximately 48m west of the site. Records returned included common pipistrelle, pipistrelle sp., Daubenton's bat, Noctule bat, soprano pipistrelle and bat sp. Two records for European Protected Species (EPS) licence applications to destroy a resting place for common pipistrelle where returned within 1km of the site in 2012 and 2016 from Magic maps. <u>Preliminary Ecological Appraisal for Bats</u> <i>Habitats:</i> The habitats on site, including the hedgerows, semi improved, improved and wet grassland and scattered trees have the potential to provide good bat foraging and commuting habitat. <i>Trees:</i> The willow and hawthorn are too young to have formed features suitable for use by bats as a roost. <i>Building:</i> The building present on site is an open fronted stable constructed with wood and breeze blocks, with a metal corrugated roof. This building has at least low potential for roosting bats.	<i>Habitat:</i> The habitats on the site are considered to provide moderate-high bat commuting and foraging suitability. It is unknown if some of these features will be retained within the proposals. Bat activity surveys are likely to be required to inform a detailed panning application and appropriate mitigation. These would require between six and 12 nocturnal bat activity surveys (one to two per month during the bat active season) together with deployment of static bat detectors in hedgerows that are to be lost within the proposals to determine bat use of these as commuting habitats. <i>Trees:</i> The trees within the site provide negligible to low bat roost habitat. The trees were not subject to a detailed inspection during the visit, if they are to be included within the proposals further daytime surveys will be required to assess for bat roost potential. Nocturnal surveys may also be required if the trees with moderate or higher bat roost potential are to be lost within the proposals. <i>Building:</i> The building present within the site provides at least low bat roost potential. The building was not subject to a detailed inspection during the visit, if the building is to be included within the proposals further daytime surveys will be required to assess for bat roost potential. To enable bats continued use of retained commuting and foraging habitats on the site it is advised that lighting is kept to a minimum and designed to avoid spill into the foraging habitat i.e. the areas of broadleaf woodland. Lighting design should follow advice set out in <i>Bats and lighting in the UK- bats and the built environment series</i>, (Bat Conservation Trust, 2018).
Evaluation	Moderate-high bat commuting and foraging habitat, at least low roosting habitat.

Species Results	Evaluation and Recommendations
Breeding Birds: Two records for barn owl were returned approximately 630m south of the site. Other records of barn owl and kingfisher occur within 1km of the site. The site provides high quality foraging habitat for barn owl. Twenty records of Section 41 bird species were returned within the site boundary. These species included bullfinch, cuckoo, curlew, dunnoek, herring gull, house sparrow, lapwing, linnet, redpoll, reed bunting, skylark, song thrush and starling. Other bird records were returned within 1km of the site. Full details are included within Appendix 5. The site provides nesting and foraging habitat for these species. The habitats on site offer nesting opportunities for common bird species within trees and the species poor hedgerow. The less intensively managed grasslands offer habitat for ground nesting birds such as lapwing. During the survey on all three dates lapwing were recorded calling over the north of the site (TN3). Birds including blackbird, swift, robin, wood pigeon and Canada geese were noted during the walkover survey.	There will be habitat loss for breeding and foraging birds as a result of the proposals. However, the loss can be mitigated for by appropriate provision within the development proposals, to include inbuilt nest features for birds within buildings, together with provision of tree and shrub planting to include nesting habitat and retaining areas of grassland for barn owl in the east of the site. If significant areas of grassland under a relaxed management regime are to be lost to the proposals, breeding bird surveys may be required to inform mitigation requirements for ground nesting birds such as lapwing. Most resident and migrant birds breed in the spring and summer months, although woodpigeons and collard doves nest throughout the year. In order to avoid harm to nesting birds, vegetation should not be cleared during the bird breeding season along with any demolition works on the building (between 1 March and 31 August). If vegetation needs to be cleared during this period a nesting bird survey will be required, conducted by a suitably qualified ecologist, before works begin. If any active nests are observed during the survey, exclusion zones will be set up and works will not occur in these areas until nesting is complete.
Ecological Value	Within the Zone of Influence to local

Species Results	Evaluation and Recommendations
Amphibians: Records of common toad have been returned approximately 965m south west of the site located within Hopwood Woods Local Nature Reserve (LNR). Records of great crested newt (GCN) absence were returned approximately 900m south east of the site beyond the M6. No records of GCN presence were returned by GMEU. The waterbodies, wet grassland, hedgerows and areas of scrub and grassland provide suitable aquatic and terrestrial habitat for amphibians. Records of EPS Licences for GCN were not returned within 2km of the site from Magic maps.	The site contains suitable terrestrial and aquatic habitat for amphibians, within waterbodies hedgerows, improved, semi-improved and wet grassland, and scrub. The running water features present are not suitable breeding habitats for amphibians due to the speed of the flowing water. Absence of GCN records may mean lack of survey effort rather than the species is not present. Therefore, further surveys for amphibians are required. It is recommended that eDNA samples of the ponds are undertaken to assess if GCN are present or absent. If the results of the analysis return a positive result further population size class surveys will be required. There is the potential to significantly enhance the area for amphibians by open water habitat provision within the proposals.
Ecological Value	To be confirmed
Reptiles: Two records for reptiles were returned within 1km of the site. The records were for Slow worm and grass snake located approximately 920m east of the site beyond the M6 motorway. No records of reptiles were returned for the site or the wider area, this could be due to lack of survey effort for these species rather than the species not being present on the site. The site provides suitable commuting and foraging habitat for grass snake, common lizard and slow worm.	The site provides suitable habitat for basking, sheltering, commuting and foraging reptiles. Suitable habitats include the waterbodies and watercourses on site for grass snake providing connectivity to the wider land scape. The grasslands, hedgerows embankments, manure piles, earth banks and scrub provide suitable habitat for basking, foraging, shelter and commuting grass snake, slow worm and common lizard. It is likely that reptile surveys would be required to support redevelopment of the site due to the risk of habitat loss for these species. Reptile surveys are best conducted in April/May and September, although they can be conducted throughout the summer provided, they are undertaken in suitable weather conditions.
Ecological Value	To be confirmed

Species Results	Evaluation and Recommendations
Other species Three records of hedgehog where returned within 1km of the site with the closest record located approximately 235m north east of the site. The site provides suitable foraging and sheltering habitat for hedgehog within the grassland, scrub and hedgerows. No records of otter where returned within 1km of the site. Two record of white clawed crayfish was returned within 1km of the site. This was identified within the Rochdale canal with the closest recording to the site located approximately 118m south west of the site. Records of water vole and water vole signs where returned located within the Rochdale canal approximately 200m south west of the site. The watercourses may provide suitable habitat for water vole and crayfish. They may also provide commuting corridors and forage for otter. Two records for brown hare were returned within the site and an additional two records where returned east of the site within 1km. Brown hare where recorded on the site during within the semi improved grassland fields within the north of the site (TN2). A dead brown hare was recorded near the entrance to off-site farm buildings TN7. The site provides suitable habitat for hares within the semi improved and improved grassland areas. Other species noted on the site include fox (TN4) and rabbit (TN 9).	The site provides suitable habitat for brown hare. Brown hare were recorded within the north of the site during the survey. Transect surveys, between November and February will be required to assess the population and the associated impacts and mitigation requirements in relation to the proposed development. It is advised that if works are to occur within 5m of the streams, a survey for water voles should be undertaken to identify appropriate mitigation measures to avoid harm to water vole and inform the planning application. The stream substrate is unknown due to the overgrown vegetation along the banks of the watercourses. Therefore, a further assessment for suitability for white claw crayfish may be required. Habitat exists for hedgehog and hedgehog could be influenced by the proposals as they have large territories. Therefore it is recommended that Reasonable Avoidance Measures (RAMs) be employed in respect to hedgehog during the works. These include: • Construction materials stored on pallets so as not to create a hedgehog refuge area; • Existing refuge areas (brash pile and bramble scrub) should be removed by hand so hedgehog within are not harmed during their removal; To enable hedgehog continued use of the site it is advised that gaps of at least 13cm by 13cm are left under any new garden fences to enable hedgehog to roam freely within the area following development. To mitigate for the loss of habitat that could be used by hibernating hedgehog (such as bramble scrub) it is recommended that a hedgehog hibernaculum is provided within the landscaping.
Ecological Value	Within the Zone of Influence

Species Results	Evaluation and Recommendations
Invasive Species: During the survey, Himalayan balsam was identified in three locations within the site. the locations where Himalayan balsam were recorded are displayed as Target Note 8 on the Phase one habitat plan P.1172.19.01 within Appendix 1 .	Invasive species are listed in Schedule 9 Part II of the Wildlife and Countryside Act 1981. It is advised that an update survey for invasive species be undertaken between May and October to support any future planning application for the site. if invasive species establish within the site prior to development that they are controlled using suitable methods to avoid spread in the wild during works.
Ecological Value	N/A

6.0 Assessment & Recommendations

6.1 Designated Sites and Habitats

The site lies within a Natural England SSSI Impact Risk Zone. Natural England will need to be consulted for this type of planning proposal as the proposals are for the erection of residential dwellings and the likely impacts are 'Residential development of 100 units or more'. The influence of the proposals on the statutory and non-statutory protected sites within the search area cannot be confirmed until the proposals have been finalised.

The habitats on site comprise semi improved grassland, improved grassland, scrub, bare ground, building, tall ruderal, scattered trees, woodland, wet grassland water bodies, water courses and hedgerows with varying species richness. These habitats are considered to have an ecological value of **within the Zone of Influence** of the site or lower. Some of these habitats will be lost to the proposals, such as the areas of semi improved grassland. It is recommended that the hedgerows be retained and where possible new areas or woodland or shelter belts be created to provide shelter and forage for species. New hedgerow planting within the site is also recommended to improve the connectivity for species such as small mammals between existing and new habitats. Improving the species diversity of hedgerows and the woodlands, together with wildflower planting, will help to mitigate for loss of vegetated habitat. The inclusion of new habitats and the improvement of existing habitats will improve the ecological connectivity across the site following development.

Areas of more valuable habitat have been marked on drawing **P.1172.19.02** in **Appendix 2** as a potential constraint to development (pink). Although there could be some development in these areas, they will require greater compensatory measures than other areas such as the improved grassland. If retained, these pink areas could be used as potential areas for ecological enhancement in order to meet the biodiversity net gain requirements. Areas marked in blue are areas that could be significantly enhanced in order to meet the biodiversity net gain requirements, for example by hedgerow or screening belt planting. The majority of blue areas are marked along the site boundaries, in order to improve connectivity to offsite habitats. The areas are indicative, and there is some flexibility with zones for retention and enhancement to fit in with the development requirements for access for example.

Bats

The trees on site have not been fully assessed for bat roost potential and will require further daytime surveys if they are to be lost within the proposals. Nocturnal surveys will be required if the trees are assessed as having at least moderate bat roost potential.

The building was not fully accessed during the walkover survey but has at least **low** bat roost potential. If the building is to be included within the proposals, it will require further inspection to assess for bat roost potential. Between one and three nocturnal surveys will also be required if the building is to be lost or modified within the proposals.

The habitats on the site are considered to provide **moderate-high** bat commuting and foraging suitability. Bat activity surveys are likely to be required to inform a detailed planning application and appropriate mitigation. These would require between six and 12 nocturnal bat activity surveys (one to two per month during the bat active season) together with deployment of static bat detectors in hedgerows that are to be lost within the proposals to determine bat use of these as commuting habitats.

If bats are found to be roosting within the building or trees, a licence from Natural England will be required for the destruction of a bat roost. The site also provides habitat for nesting birds and badger. Further works to be taken in relation to protected species are presented in **Section 5.3** above

Amphibians

The site provides suitable aquatic and terrestrial habitat for amphibians. It is recommended that eDNA samples of the ponds are undertaken to assess if GCN are present or likely absent. If the results of the analysis return a positive result further population size class surveys will be required to fully assess the appropriate mitigation required.

Breeding birds

There will be habitat loss for breeding and foraging birds as a result of the proposals. However, some nesting habitat will be retained, and the loss can be mitigated for by:

- appropriate provision within the development proposals, to include inbuilt nest features for birds within buildings; and
- provision of tree and shrub planting to include nesting habitat.

Lapwing were identified calling above the semi improved grassland fields within the north of the site. If suitable nesting habitat for lapwing are to be impacted by the proposals, works should be undertaken outside of the nesting bird season (1st March- 31st August inclusive) where possible and a lapwing survey undertaken following the O'Brian and Smith (1992) methods for censusing lowland breeding water populations will be required to inform appropriate mitigation requirements for ground nesting birds.

Vegetation removal should avoid the nesting bird season (1st March – 31st August inclusive). If works cannot avoid the nesting bird season a nesting bird check undertaken by a suitably qualified ecologist will be required prior to works commencing.

Badger

Badger were found to be using the site for foraging, commuting and sett creation further surveys may be required to determine badger use throughout the site, depending on the proposals. Measures will need to be taken to ensure no harm to badger as a result of the

proposals and would likely require the inclusion of wildlife corridors along key badger commuting routes, to enable continued badger access across the site.

To avoid harm to badger that may stray on to site during construction it is advised that spoil heaps are fenced off to prevent badger access and that deep excavations have ramps to enable badger escape should they fall in. It is likely a Badger Method Statement would be required to support the proposals at planning application stage.

Other Species

The site provides suitable habitat for brown hare and brown hare were recorded within the site during the site visit. Transect surveys, between November and February will be required to confirm if brown hare are present within the site.

The site provides suitable habitat for grass snake, slow worm and common lizard. Depending on the habitat loss that is proposed, reptile surveys may be required to assess if reptiles are present/likely absent within the site. These can be carried out between April and September, with optimal survey periods being during cooler weather in April and September.

It is advised that if works are to occur within 5m of the streams, a survey for water voles should be undertaken to identify appropriate mitigation measures to avoid harm to water vole and inform the planning application.

White-clawed crayfish records were returned within the Rochdale Canal which is hydrologically linked to the water courses within the site. A further survey of the watercourse on site is required to fully assess the suitability for white-clawed crayfish.

Habitat exists for hedgehog and hedgehog could be influenced by the proposals as they have large territories. Therefore, it is recommended that Reasonable Avoidance Measures (RAMs) be employed in respect to hedgehog during the works. These include:

- Construction materials stored on pallets so as not to create a hedgehog refuge area;
- Existing refuge areas (brash pile and bramble scrub) should be removed by hand so hedgehog within are not harmed during their removal;

To mitigate for the loss of habitat that could be used by hibernating hedgehog (such as bramble scrub) it is recommended that a hedgehog hibernaculum is provided within the landscaping. Gaps of 13cm by 13cm would be required under new fencing to enable hedgehog continued access across the area following development.

6.3 Enhancements

In order to meet requirements for biodiversity protection and enhancement outlined within the NPPF, it is recommended that ecological enhancements are included. These need to be confirmed once the proposals are finalised but could include:

1. Provision of bird boxes (25mm or 32mm entrance hole boxes, house sparrow terraces, swift boxes, house martin cups, barn owl boxes), attached to retained trees and new buildings as appropriate on site;
2. Provision of bat boxes (e.g. Schwegler 2F type) attached to a retained or new tree on site and provision of bat boxes (e.g. Beaumaris woodstone box, Vivara pro products ibstock bat bricks) attached to or incorporated within new buildings;
3. Provision of hedgehog, amphibian and reptile hibernacula and bug boxes;
4. Provision of ponds or new wetland areas;
5. Provision of new woodland or shelter belt planting to connect exiting features and enhancement of the existing water courses on site to include oak, hazel, field maple, holly, hawthorn, silver birch, crab apple, rowan and bird cherry as tree species, a woodland wildflower mix and bulb planting to include English bluebell, native daffodil and snowdrop;
6. Wildflower planting incorporating meadow flower mix to include meadow buttercup, meadow fescue, sweet vernal grass, common knapweed, vetch, cranesbill and clover species;
7. Hedgerow planting to improve connectivity between existing and newly created habitats to include hawthorn, honeysuckle, blackthorn, hazel and holly; and
8. Suitable landscaping within the residential development incorporating species that provide a food or shelter resource to wildlife such as hawthorn, lavender, rowan, hazel, field maple, crab apple, pear, bird cherry, spring bulbs and late flowering species.

7.0 Conclusions

The impact on the local ecology as a result of the proposals cannot be fully confirmed until the proposals have been finalised. However, provided the recommendations detailed above are followed the impact on the local ecology should be limited and there could be net gain in biodiversity. In summary these include:

1. Bat activity surveys to confirm the level of bat commuting and foraging activity throughout the site to be carried out between May and September in suitable weather conditions. between six and 12 nocturnal bat activity surveys will be required (one to two per month during the bat active season) together with deployment of static bat detectors in hedgerows that are to be lost within the proposals to determine bat use of these as commuting habitats.
2. For any trees or buildings lost to the proposals, a detailed daytime inspection would be required in the first instance. This can be undertaken at any time of year. Further nocturnal surveys (between May and September) may be required following the daytime inspection if the buildings or trees provide suitable shelter for roosting bats;
3. Further surveys to assess badger activity within the site if proposals are to take significant areas of badger habitat. Use of Reasonable Avoidance Measures (RAMs) to avoid harm to badger during construction will be required and a Badger Mitigation Strategy may be needed to support the application;
4. Further survey of the watercourses present within the site to assess the suitability for white-clawed crayfish.
5. Further surveys to assess the activity of brown hare within the site to be carried out between November and February;
6. Avoiding vegetation removal or any demolition or roof works of the buildings during the bird breeding season (1 March to 31 August inclusive) or undertaking a survey for breeding birds and ensuring any active nests found are protected within a suitable buffer zone until they are no longer in use;
7. Mitigation for the loss of nesting bird habitat with the provision of bird boxes such as open fronted nest boxes, 26mm hole nest boxes and 32mm hole nest boxes;
8. The use of Reasonable Avoidance Measures (RAM's) in relation to hedgehog, to include the strimming and hand clearing the bramble scrub and storage of construction materials on pallets to avoid harm to hedgehog;
9. Provision of a hedgehog hibernaculum on site to mitigate for loss of the bramble scrub, or enhance the site for hedgehog;
10. Provision of gaps of 13cm by 13cm under fences to enable hedgehog continued access across the site following development;
11. Lighting sensitive to the needs of bats, designed to avoid overspill onto key habitats including the River Beal and any identified during the bat activity surveys;
12. Habitat enhancement with the provision of bird and boxes, hedgehog, amphibian, and reptile hibernacula and bug boxes. The provision of new ponds, wet land area, woodland or shelter belts and hedgerow planting to improve connectivity between existing and new habitats could also enhance the site for wildlife. Suitable landscaping within the residential development incorporating species that provide a food or shelter resource to wildlife would also be beneficial to biodiversity.

If the above recommendations are fully implemented, they should be enough to support the continued allocation of the site for redevelopment. The recommendations will enable the proposals to meet the current requirements of national and local guidance and legislation including the NPPF and Policies NE3, NE4, NE5, NE8 and NE9 and policy G7 within Rochdale Metropolitan Borough Council Unitary Development Plan (Adopted June 2006) and the Rochdale Core Strategy (Adopted October 2016 and updated February 2017).

8.0 References

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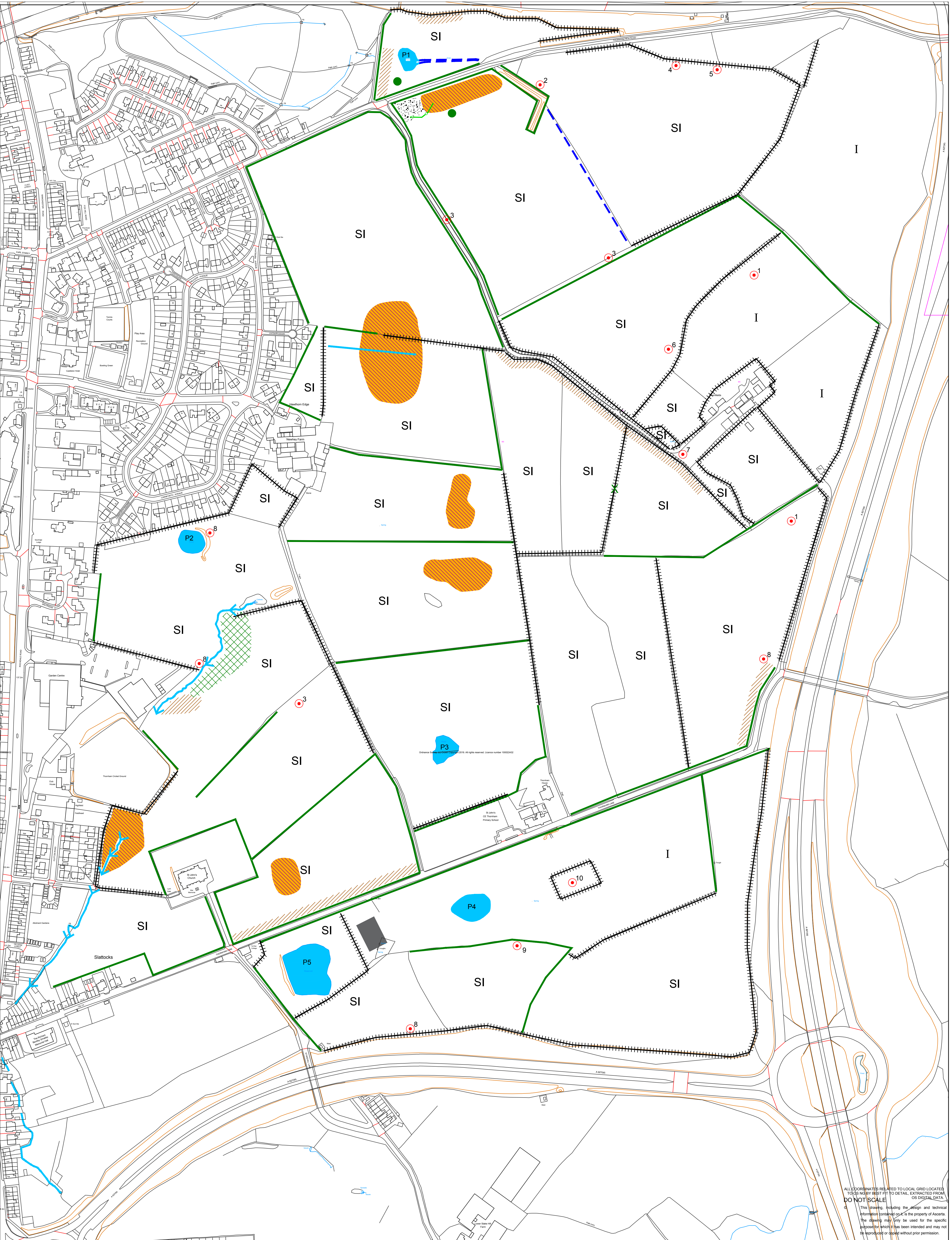
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Appendix 1



Ascerta

Landscape | Trees | Ecology

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CLIENT:
Redrow Homes Ltd

PROJECT:
Manchester Road, Slattocks

DRAWING TITLE:
Phase One Habitat Survey

SCALE:
1:2000@A1

DATE:
22/05/2019

DRAWN BY:
CP

CHKD BY:
TA

DRAWING NO:
P.1172.19.01

REV:
-

KEY

Bare ground	Improved grassland	Building	Earth mound	Target note
Pond	Wet grassland	Scattered scrub	Tall ruderal	1 - Manure heap
Hedgerow	Dense continuous scrub	Dry ditch	Fence	2 - Brown hare
Semi-improved grassland	Broadleaved scattered tree	Wet ditch	Stream	3 - Lawping
				4 - Fox
				5 - Badger sett

6 - Badger sett
7 - Dead brown hare
8 - Himalayan balsam
9 - Fox
10 - Potential pond

Appendix 2

Appendix 3

Flora Species List

English Name	Scientific Name
Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Bindweed	<i>Convolvulus arvensis</i>
Bird's foot trefoil	<i>Lotus corniculatus</i>
Bistort	<i>Polygonum bistorta</i>
Bittercress	<i>Cardamine sp.</i>
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus agg</i>
Broadleaved dock	<i>Rumex obtusifolius</i>
Brome	<i>Bromus sp.</i>
Cherry	<i>Prunus sp.</i>
Chickweed	<i>Stellaria media</i>
Cleavers	<i>Galium aparine</i>
Clover	<i>Trifolium repens</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common bent	<i>Agrostis capillaris</i>
Common mouse ear	<i>Cerastium fontanum</i>
Common daisy	<i>Bellis Perennis</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Creeping bent grass	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping thistle	<i>Cirsium arvense</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Cuckoo flower	<i>Cardamine pratensis</i>
Curled dock	<i>Rumex crispus</i>
Dandelion	<i>Taraxacum officinale</i>
Elder	<i>Sambucus nigra</i>
False oat grass	<i>Arrhenatherum elatius</i>
Field maple	<i>Acer campestre</i>
Forget-me-not	<i>Myosotis sp.</i>
Foxglove	<i>Digitalis purpurea</i>
Garlic mustard	<i>Alliaria petiolata</i>
Goat willow	<i>Salix caprea</i>
Hawthorn	<i>Crataegus monogyna</i>
Herb robert	<i>Geranium robertianum</i>
Himalayan balsam*	<i>Impatiens glandulifera</i>
Hogweed	<i>Heracleum sphondylium</i>
Holly	<i>Ilex aquifolium</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Horse chestnut	<i>Aesculus hippocastanum</i>
Horsetail	<i>Equisetum sp.</i>
Ivy	<i>Hedera Helix</i>
Leyland cypress	<i>Cupressus × leylandii</i>
Marsh thistle	<i>Cirsium palustre</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow grass	<i>Poa sp.</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Moss	<i>Sphagnum</i>
Oak	<i>Quercus robur</i>
Perennial ryegrass	<i>Lolium perenne</i>
Pine	<i>Pinus sp.</i>
Pond weed	<i>Potamogeton natans</i>
Privet	<i>Ligustrum vulgare</i>

English Name	Scientific Name
Ragwort	<i>Senecio jacobaea</i> / <i>Jacobaea vulgaris</i>
Red campion	<i>Silene dioica</i>
Red fescue	<i>Festuca rubra</i>
Redshank	<i>Polygonum persicaria</i>
Reed canary grass	<i>Phalaris arundinacea</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Rose	<i>Rosa sp.</i>
Scentless mayweed	<i>Tripleurospermum inodorum</i>
Shepard's purse	<i>Capsella bursa-pastoris</i>
Silver birch	<i>Betula pendula</i>
Soft rush	<i>Juncus effusus</i>
Sow thistle	<i>Sonchus sp.</i>
Stinging nettle	<i>Urtica dioica</i>
Sweet vernal	<i>Anthoxanthum odoratum</i>
Sycamore	<i>Acer pseudoplatanus</i>
Vetch	<i>Vicia sp.</i>
Whitebeam	<i>Sorbus aria</i>
White clover	<i>Trifolium repens</i>
Willowherb	<i>Epilobium sp.</i>
Yellow flag iris	<i>Iris pseudacorus</i>
Yorkshire fog	<i>Holcus lanatus</i>

Fauna Species List

English Name	Scientific Name
Black bird	<i>Turdus merula</i>
Brown hare	<i>Lepus europaeus</i>
Canada Goose	<i>Branta canadensis</i>
Coot	<i>Fulica</i>
Lapwing	<i>Vanellus vanellus</i>
Magpie	<i>Pica pica</i>
Mallard	<i>Anas platyrhynchos</i>
Reed bunting	<i>Emberiza schoeniclus</i>
Robin	<i>Erithacus rubecula</i>
Swallow	<i>Hirundo rustica</i>
Wood pigeon	<i>Columba palumbus</i>

Target Notes

TN1 - Manure Heap

TN2 - Brown hare

TN3 - Lapwing calling

TN4 - Fox

TN5 - Badger sett with 1 entrance

TN6 - Badger sett with 3 entrances

TN7 – Dead brown hare

TN8 - Himalayan balsam

TN9 – Rabbit warren at OS grid reference SD 89078 08763

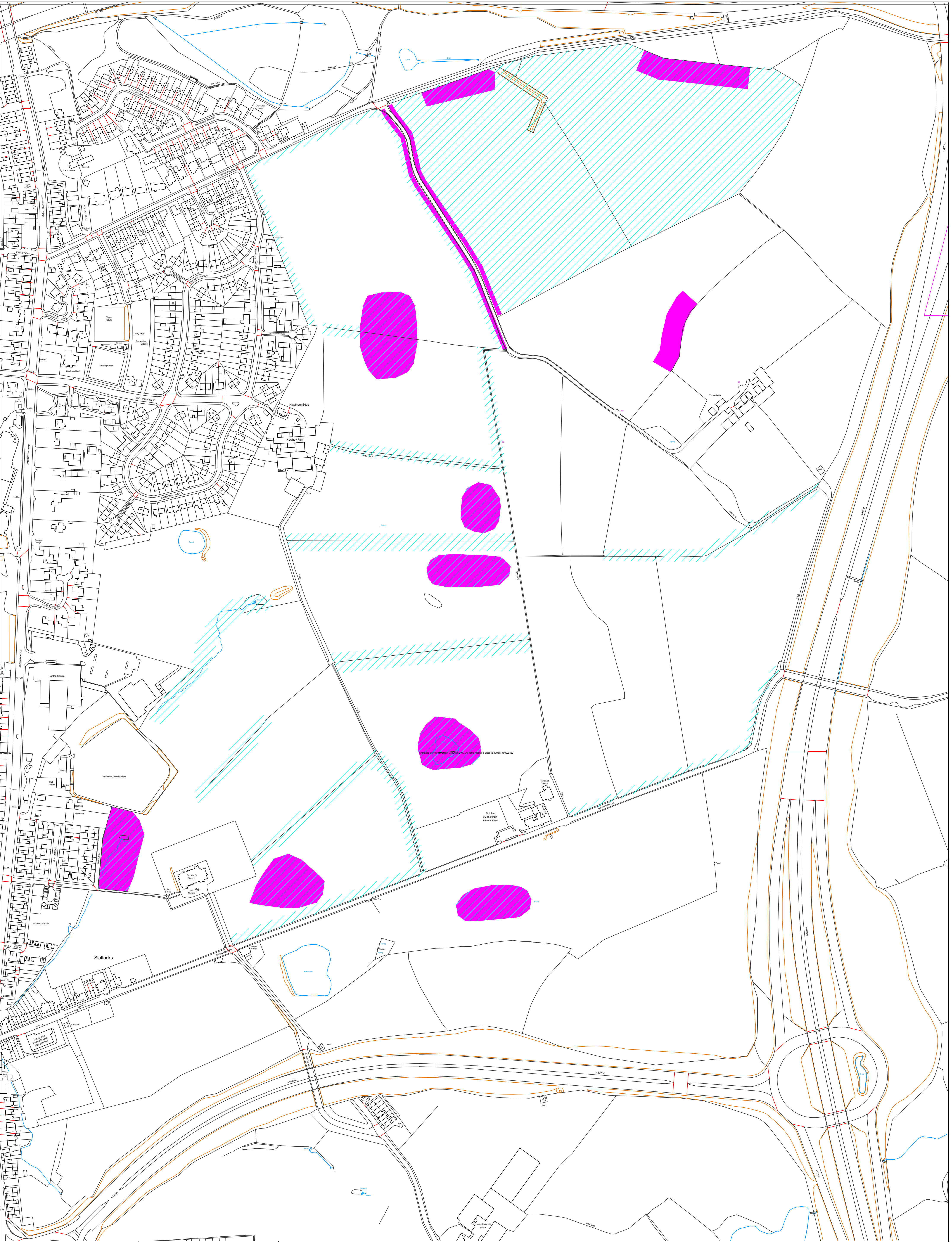
TN10 – Potential pond. (No access to field to confirm)

Appendix 4

Pond Number	1	2	3	4	5	Ditch
Geographic location.	A	A	A	A	A	A
The three Geographic regions are based on the known distribution of the species and are defined as Optimal, Marginal or Unsuitable.						
S1 Value:	1	1	1	1	1	1
Pond Area	330	1200	524	156	2662	175
The optimum size is 400-800m ² with ponds smaller or larger than this the HSI score is reduced.						
S2 Value:	0.65	0.925	1	0.3	0.8	0.35
Pond Permanence	Never dries	Never dries	Never dries	Rarely dries	Never dries	Sometimes dries
Th optimum is that a pond rarely dries rather than never drying. One of four categories based on the number of likely dry years in ten is assigned.						
S3 Value:	0.9	0.9	0.9	1	0.9	0.5
Water Quality	Poor	Poor	Moderate	Moderate	Poor	Poor
Although adults are relativley tolerant of pollution, the gill-breathing larvae are not. As such the score increases with water quality and one of four categories of oxygenation and obvious pollution based on invertebrate indicators are assigned.						
S4 Value:	0.33	0.33	0.67	0.67	0.33	0.33
Pond Shading	0%	0%	20%	0%	0%	20%

Perimeter shading of the pond can increase the nutrient level and enhance productivity, however excess shading can cause an increase in organic content and cause eutrophication. The optimum amount of shade is 0-60% with the HSI score decreasing beyond this.						
S5 Value:	1	1	1	1	1	1
Presence of Waterfowl	Minor	Major	Absent	Absent	Minor	Absent
High densities of waterfowl can damage aquatic vegetation and are detrimental to water quality owing to nutrient enrichment. One of four categories is assigned depending on the impact of waterfowl.						
S6 Value:	0.67	0.01	1	1	0.67	1
Presence of Fish	Major	Possible	Absent	Absent	Major	Absent
Some fish predate and/or compete with newt larvae. One of four categories is assigned depending on likelihood and species present: Major, Minor, Possible or Absent.						
S7 Value:	0	0.7	1	1	0	1
Local Pond Density	10	10	11	11	12	12
GCN polulations are not considered to be viable with a pond density of less than 0.7 ponds per km ² . The number of ponds within 1km are recorded.						
S8 Value:	0.95	0.95	0.975	0.975	1	1
Local Amount of Suitable Terrestrial Habitat	Moderate	Poor	Moderate	Poor	Poor	Moderate

GCNs are also reliant on good terrestrial habitat. Four categories are assigned depending on the availability and extent of suitable terrestrial habitat: good, moderate, poor or none.						
S9 Value:	0.67	0.33	0.67	0.33	0.33	0.67
Macrophyte (aquatic plant) Cover	50%	15%	10%	15%	40%	10%
Macrophytes provide cover, food for prey and egg laying material, although large density restricts vital GCN behaviour e.g. Courtship. 70-80% macrophyte cover is optimal with the HSI score falling above and below this amount.						
S10 Value:	0.8	0.45	0.4	0.45	0.7	0.4
HSI Score	0.4807	0.438	0.8313	0.7021	0.4535	0.6591
Natural England Classification	Poor	Poor	Excellent	Good	Poor	Average



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Redrow Homes Ltd

PROJECT:
Manchester Road, Slattocks

DRAWING TITLE:
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1:2000@A1

DATE:
17/06/2019

DRAWN BY:
CP

CHKD BY:
TA

DRAWING NO:
P.1172.19.02

REV:
-

KEY

Constraints (areas of more valuable ecological habitat)

Opportunities for enhancement of habitat

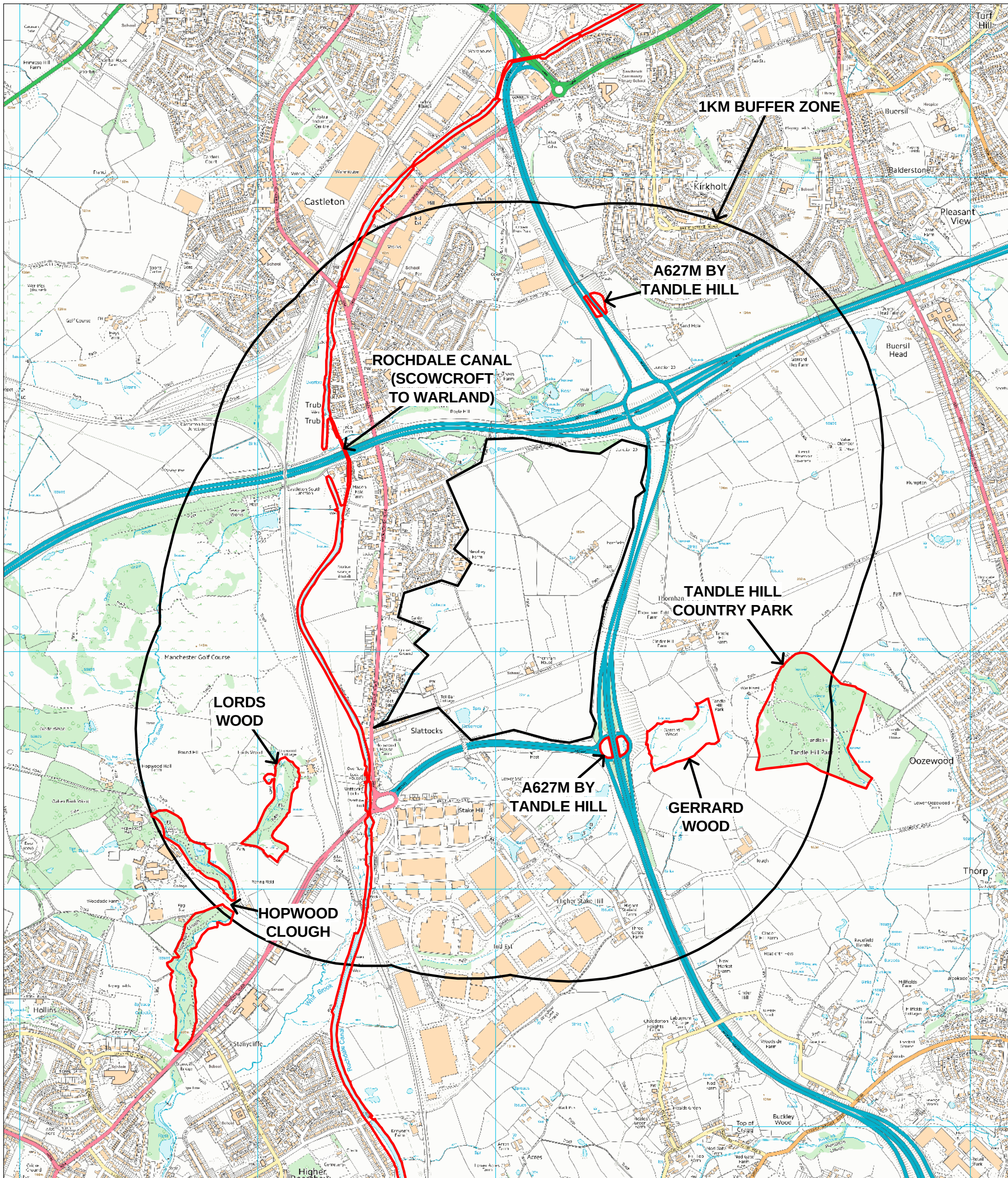
ALL COORDINATES RELATED TO LOCAL GRID LOCATED TO OS NG BY BEST FIT TO DETAIL. EXTRACTED FROM OS DIGITAL DATA.

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Appendix 5



KEY

SITE OF BIOLOGICAL IMPORTANCE

SBI BOUNDARY

**GREATER MANCHESTER ECOLOGY UNIT
ECOLOGICAL SEARCH - SD 8936 0942
MANCHESTER ROAD - MAP 1**

SCALE 1:15,000

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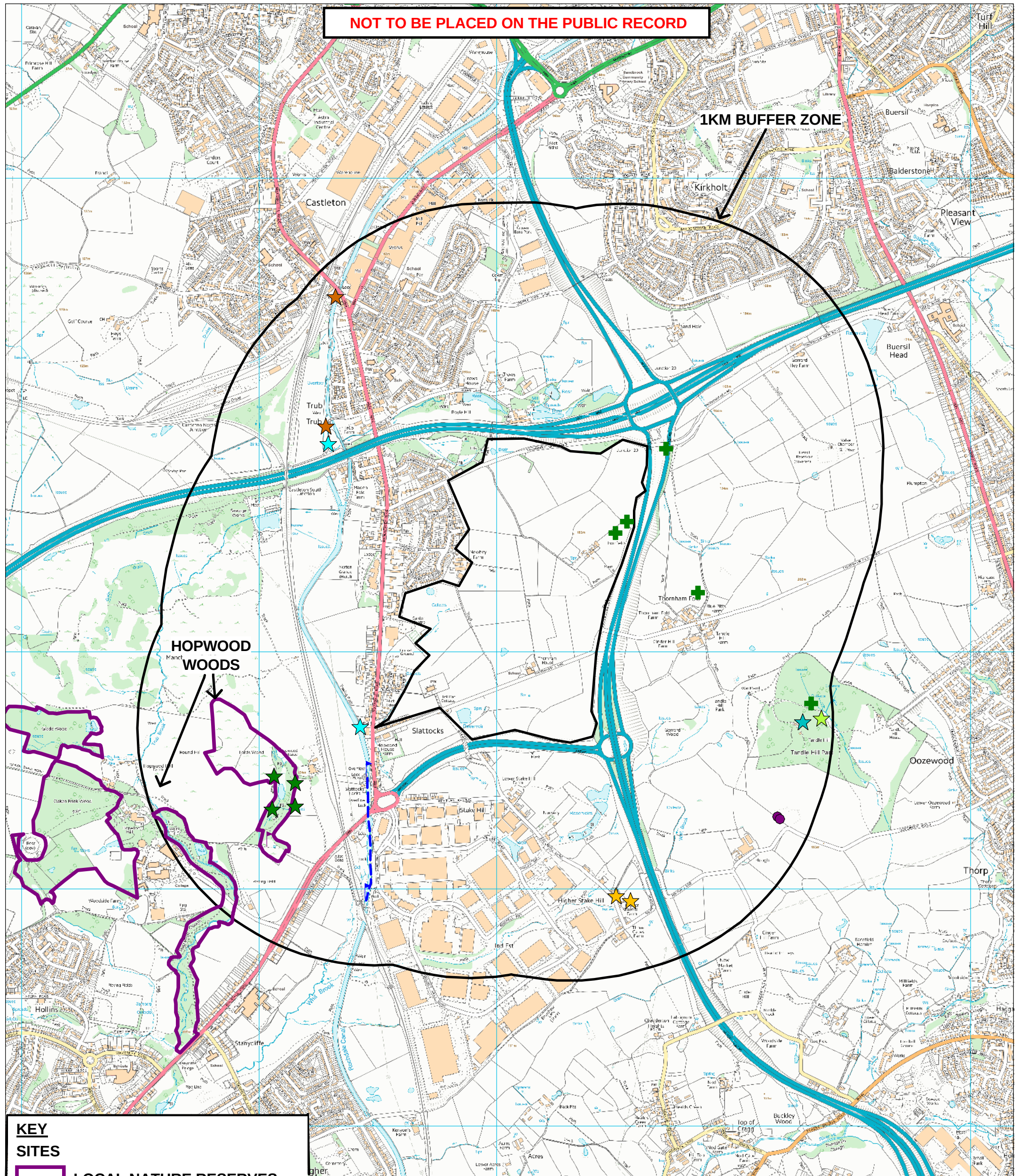


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KEY

SITES

LOCAL NATURE RESERVES

PROTECTED SPECIES

- GREAT CRESTED NEWT
- GREAT CRESTED NEWT ABSENCE
- EUROPEAN WATER VOLE
- EUROPEAN WATER VOLE SIGNS
- BROWN HARE
- BARN OWL
- FLOATING WATER-PLANTAIN
- GRASS SNAKE
- KINGFISHER
- SLOW-WORM
- WHITE-CLAWED CRAYFISH

GREATER MANCHESTER ECOLOGY UNIT
ECOLOGICAL SEARCH - SD 8936 0942
MANCHESTER ROAD - MAP 2

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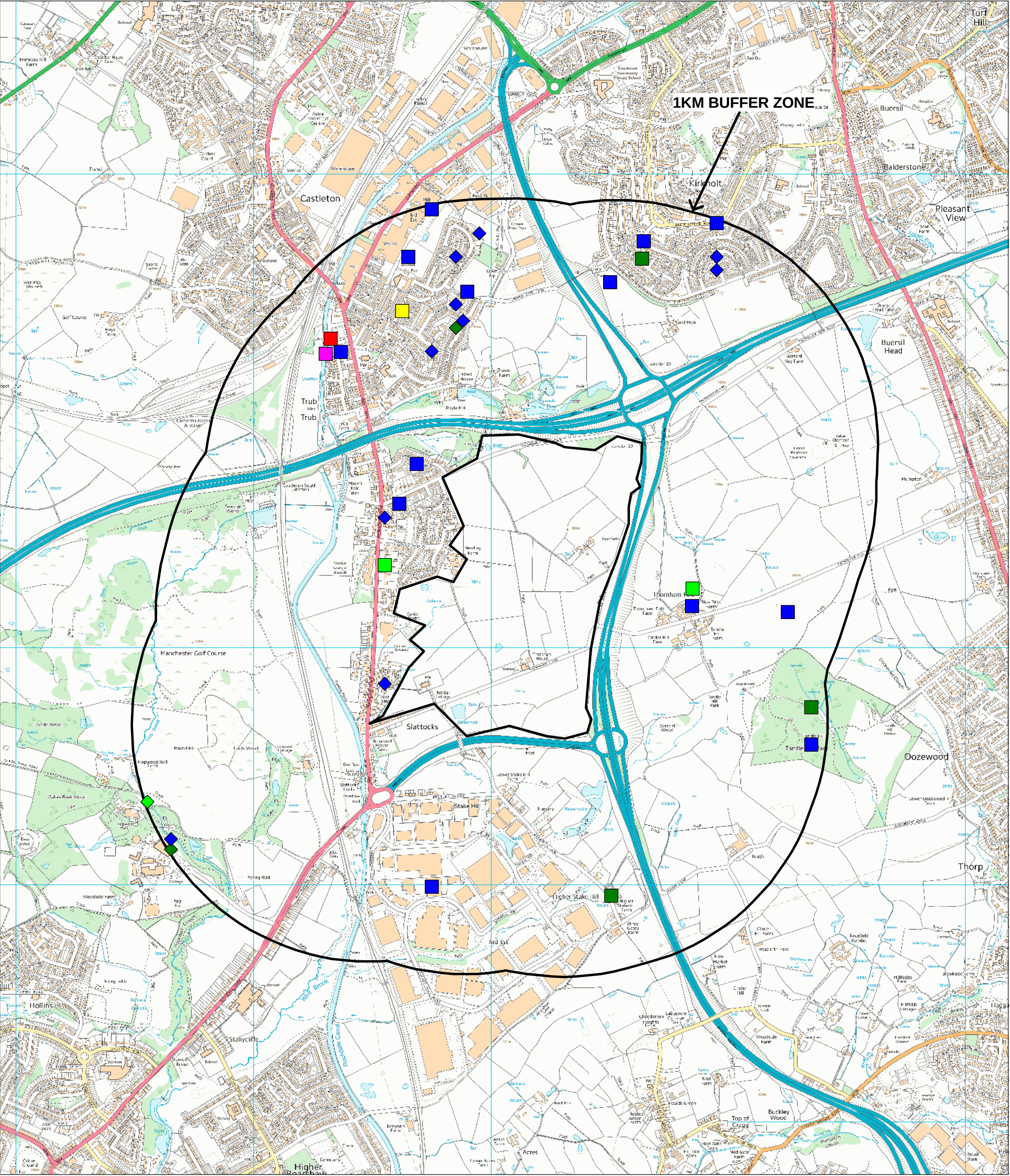
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- KEY**
- BAT ROOSTS**
- ◆ BAT SP
 - ◆ COMMON PIPISTRELLE
 - ◆ PIPISTRELLE SP
- BATS OTHER SIGNS**
- BAT SP
 - COMMON PIPISTRELLE
 - DAUBENTON'S BAT
 - NOCTULE BAT
 - PIPISTRELLE SP
 - SOPRANO PIPISTRELLE

GREATER MANCHESTER ECOLOGY UNIT
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MANCHESTER ROAD - MAP 4

SCALE 1:15,000

BAT DATA COURTESY OF SOUTH LANCS BAT GROUP

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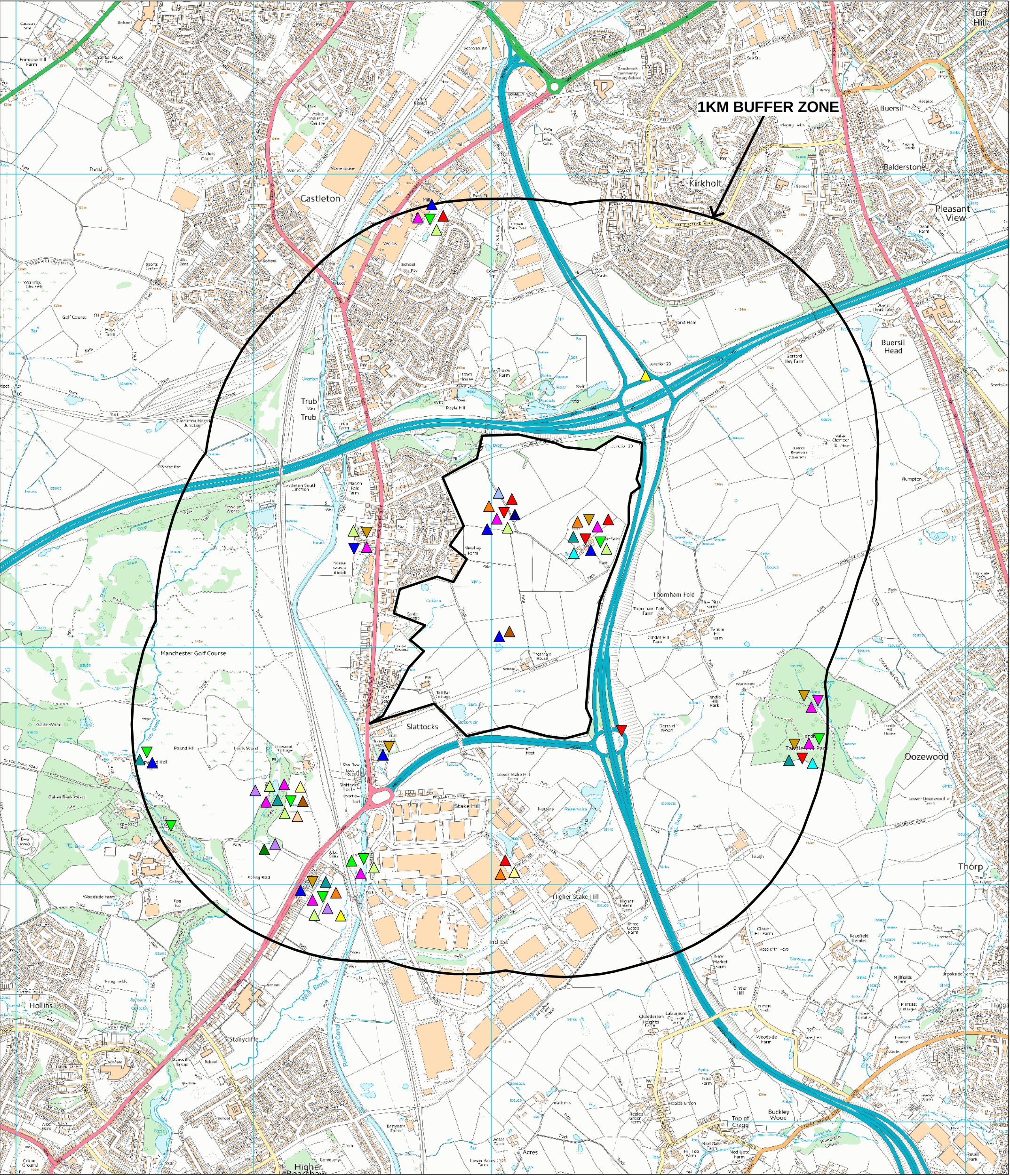
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KEY
SECTION 41 SPECIES

- | | |
|---------------------|----------------|
| ▲ BULLFINCH | ▲ LINNET |
| ▲ COMMON TOAD | ▲ MUD SNAIL |
| ▲ CUCKOO | ▲ REDPOLL |
| ▲ CURLEW | ▲ REED BUNTING |
| ▲ DUNNOCK | ▲ S41 MOTH |
| ▲ GR.HOPPER WARBLER | ▲ SKYLARK |
| ▲ GREY PARTRIDGE | ▲ SMALL HEATH |
| ▲ HEDGEHOG | ▲ SONG THRUSH |
| ▲ HERRING GULL | ▲ STARLING |
| ▲ HOUSE SPARROW | ▲ WILLOW TIT |
| ▲ LAPWING | |

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MANCHESTER ROAD - MAP 5

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