The Cambridge South East Transport Order

Transport And Works Act 1992

Transport And Works (Applications And Objections Procedure) (England And Wales) Rules 2006

Appendix 10.5 – Otter and Watervole Surveys

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Executive Summary

Contents	Summary
Site Location	The site comprises a linear route which extends from the Cambridge Biomedical Campus in Cambridge, through to the A11 beyond the village of Babraham. The site is centred at Ordnance Survey National Grid Reference (OSNGR) TL 48499 51169. The most north-western point is OSNGR TL 45829 55102. The most easterly point is OSNGR TL 53005 49788.
Proposals	Phase 2 of the Cambridge South East Transport (CSET) project proposes a new off-road public transport route linking the Cambridge Biomedical Campus via Great Shelford, Stapleford and Sawston to a new travel hub near the A11/A1307/A505 with connections to Babraham, the Babraham Research Campus and Granta Park.
Existing Site Information	Previous surveys carried out by Plowman Craven and WYG have identified habitats on site to be of suitable quality to support foraging and commuting otter.
Scope of this Survey(s)	The purpose of this survey is to identify presence / absence of otters on site along the River Granta. The River Granta flows through two sections of the site, both of which were identified as having the potential to support otter. A walkover survey along the bank of the river was adopted as the survey methodology, noting any signs of otter evidence.
Results	Eight otter spraints were found on the site across the two locations, confirming the presence of otter along the River Granta. The main location where seven otter spraints, four potential otter slides and two potential resting places were found was under the A11 bridge which extends to the east of the site at OSNGR TL 51851 49332. One otter spraint was located next to a potential couch location, located centrally to the development at OSNGR TL 48477 51240.

Glossary

The following terms are used within this report:

Table 1: Glossary

Term	Meaning
Otter *Lutra Lutra*	
Core Area	This is the area of an otter female's home-range where her activity is concentrated while she rears her cubs for the first few months.
Couch	Resting site used by otters which is above ground. They are often in tall vegetation such as coarse grasses and herbs, under wind blown trees or in dense scrub; although, can also be on man-made structures such as open crevices under bridges.
Holt	An underground resting site used by otters which is enclosed; for example, behind bank-side tree roots or in rock piles.
Natal Holt	The place where otter cubs are born. They remain in the natal holt without appearing for approximately two months.
Rearing / Breeding Holt	Any structure which houses a female otter and young cubs after they have emerged from the natal holt. Rearing holt and breeding holt are synonymous.
Spraint	A spraint is an otter dropping. They are often left at conspicuous landmarks along rivers such as on rocks, at weirs and under bridges.
Spraint Site	A place that is regularly used by otters for sprainting that is regularly refreshed. Often leaves discolouration on substrate.
Resting Site	The generic term used to describe areas where otters rest or sleep during the day (commonly termed holts and couches).
General Terms	
CEnv	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology & Environmental Management
EcIA	Ecological Impact Assessment
EPS	European Protected Species
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
NERC Act	Natural Environment and Rural Communities Act 2006
PEA	Preliminary Ecological Appraisal

1.0 Introduction

1.1 Background

WYG was commissioned by Greater Cambridgeshire Partnership in August 2019 to undertake an otter *Lutra Lutra* survey at the proposed route for Cambridgeshire South East Transport Strategy (CSET) site starting at Cambridge Biomedical Campus to the A11 beyond the village of Babraham (hereafter referred to as the 'site'), to identify potential ecological constraints to the development that may be imposed by the presence of otters. This follows the completion of a constraints survey conducted by WYG (2019) which identified the River Granta as suitable to support otter and therefore otter may be present within the red line boundary.

This report was prepared by WYG Assistant Ecologist Thomas Cumberland and should be read with reference to the Report Conditions provided in Appendix A.

1.2 Site Location

The site comprises a linear route which extends from the Cambridge Biomedical Campus in Cambridge, through to the A11 beyond the village of Babraham. The site is centred at OSNGR TL 48499 51169. The most north-western point is OSNGR TL 45829 55102. The most easterly point is OSNGR TL 53005 49788.

The River Granta extends through the site at two locations. The wider landscape consists of agricultural land and the villages of Stapleford, Sawston and Babraham. It also partially incorporates a total of five sites designated for nature conservation, comprising a single statutory site and four non-statutory sites. There are a total of 56 waterbodies within 500 m of the proposed development.

1.3 Development Proposals

Phase 2 of the Cambridge South East Transport (CSET) project proposes a new off-road public transport route linking the Cambridge Biomedical Campus via Great Shelford, Stapleford and Sawston to a new travel hub near the A11/A1307/A505 with connections to Babraham, the Babraham Research Campus and Granta Park.

1.4 Purpose of the Report

The purpose of the survey and the subsequent report are to:

- Outline the legislative protection and conservation policy afforded to otter;
- Detail the results of an otter survey conducted to assess the potential suitability of freshwater and terrestrial habitat features on and within agreed distances from the site and to identify field evidence indicating their presence and potential places of shelter.

2.0 Methodology

2.1 Desk Study

The following sources of information were consulted:

2.1.1 Previous Reports

The following reports relating to the site and immediate environs were consulted:

- WYG (2019), Cambridge South East Transport Study (CSET): Constraints Report;
- Plowman Craven (2019), Otter Survey: A1307 Haverhill to Cambridge, Otter Survey; and
- Plowman Craven (2018), Cambridge South East Transport Study Phase 2: Strategy 1.

2.1.2 Online Resources

A search of publicly available information sources was conducted to:

- Identify supplementary records of otter activity/places of shelter within 2 km of the site; and
- To gain knowledge of their status and distribution.

The following publicly available information sources were used to inform this report:

- MAGIC www.magic.gov.uk - DEFRA's interactive, web-based database for statutory designations and information on any EPSL applications that have been granted in the local area since 2015.
- NBN Atlas https://nbnatlas.org/ - for records of protected and notable species.

Note that the use of some NBN Atlas data is limited (e.g. commercial use of data provided under a CC BY-NC licence is not possible) therefore we may not be able to report full details of those records in such cases.

2.2 Field Surveys

2.2.1 Otter

The otter surveys were conducted on 26th and 27th of February 2020 by WYG Senior Ecologist, David Goddard MCIEEM supported by Assistant Ecologist Thomas Cumberland. Weather conditions were deemed suitable to collect valid data despite heavy rainfall two days prior to the survey. The River Granta had been in spate for a short period before the survey occasion and was exhibiting an elevated water level with debris present higher up the bankside during the survey.

An inspection was made of all previously identified suitable freshwater habitats (i.e. watercourses and waterbodies including ponds) within the site boundary, where access was possible and where possible within 250 m up and down stream of the site boundary. Inspections were made from within channels/waterbodies, where safe to do so, extending up to 50 m from the water's edge to survey terrestrial habitat or further if deemed appropriate. Inspections of inaccessible areas were undertaken using binoculars, where possible.

Survey methodology was based on Chanin (2003a) *Monitoring the Otter*. Field signs of otter activity were searched for within the survey area including footprints, feeding remains, spraints, sign heaps

and slides. Particular attention was given to attempting to identify above and below ground places of otter shelter/rest (i.e. holts and couches).

This is a factual report therefore no mitigation guidance or recommendations for further survey work will be stated within this report.

2.3 Limitations

The comprehensiveness of any ecological assessment will be limited by the season in which surveys are undertaken and the conditions present during specific survey(s). The survey focused on assessing the potential of the site to support otter; yet, to fully determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year.

This report, therefore, should be considered to provide a comprehensive assessment of the ecological interest present on the day of the visit.

It was not possible to conduct the survey to the full recommended distance of 250 m up and down stream of the River Granta during the survey as access was only provided to areas within the red line boundary. Areas along the River Granta could not be fully inspected due to dense vegetation and as such these areas were viewed using binoculars from the opposite side of the river, where possible. This is not considered a limitation to the survey effort as evidence of otter was recorded along both sections of the River Granta within the red line boundary, and is therefore assumed otter are present along the connecting section between.

A large pond is present adjacent to the River Granta located at OSNG TL 51682 49541, this could not be accessed due to the presence of a barbed wire and mesh fence which restricted access during the survey. This is not considered to be a limitation to the survey as the pond was assessed from the fence line using binoculars which identified the pond as being lined, therefore it is unlikely to allow animals, including otter, to burrow into the banks and no evidence of otter was recorded, the land between the River Granta and the large pond was also surveyed for evidence of otter, with none found.

It is possible that some signs of otter activity or places of shelter may have previously been washed away by fluctuations in water levels in the recent past; and evidence such as footprints may not have been conclusive due to the wet mud resulting in smudged footprints which could not be directly attributed to otter. Nevertheless, it is considered that sufficient evidence of otter was gathered during the surveys to make valid conclusions within this assessment.

All potentially suitable habitat was searched where access permitted; however, restricted views of terrestrial habitat and lack of safe access limited collation of data at certain points along the River Granta. This is not deemed to be a limitation as the banks were generally visible from the opposite side of the river using binoculars where necessary.

The details of this report will remain valid for a period of **one year** (CIEEM, 2019). Beyond this period, if works have not yet been undertaken, it is recommended that a review of the validity of the evidence found during the survey occasion is undertaken. Note that the evidence found within this report should be reviewed (and reassessed if necessary) should there be are any changes to the red line boundary or development proposals which this report was based on.

3.0 Baseline Conditions

3.1 Otter

3.1.1 Previous Survey Reports

WYG (2019)

A constraints report produced by WYG (2019), identified the habitat along the River Granta as being of a suitable quality to support otter. Further within the report, detailed personal communications with local landowners and tenants along the River Granta indicate otter presence.

Plowman Craven (2018)

A preliminary ecological appraisal was conducted by Plowman Craven (2018), which identified the survey area as having the potential to support otter. A desk study search conducted for this report returned two records of otter spraint, which are detailed in Table 2 below. The report identifies white-clawed crayfish *Austropotamobius pallipes* which have been recorded adjacent to the site boundary next to Granta Park, being a contributary factor to the potential for otter to be present along the River Granta.

Plowman Craven (2019)

A previous otter survey was completed by Plowman Craven (2019). When a survey was conducted on 26th September 2018, no otter field signs were recorded in the area surveyed within the site boundary. The survey was also conducted to the south-east of the site boundary, following the River Granta south-east towards the village of Linton. Field signs recorded outside the site boundary are given below in Table 2.

Table 2: Summary of Previous Survey Results

Record Type	Distance & Direction	Notes
Otter spraint	5.88 km south-east of the site boundary at TL 57161 46353	Two records of otter spraint were returned via the desk study associated with the PEA conducted by Plowman Craven (2018). The two otter spraints were recorded in 2012 and 2017 and were located under the A1307 bridge near Linton.
Otter spraint	5.88 km south-east of the site boundary at TL 57161 46353	Two otter spraints were identified as part of the 2018 otter survey conducted by Plowman Craven (2019). The two otter spraints recorded were located under the A1307 bridge near Linton.

3.1.2 Online Sources

A search of the MAGIC website identified no European protected species licenses (EPSL) granted for otter within 2 km of the site.

A search of the NBN atlas website identified 97 records of otter within 2 km of the site. A summary of the results are shown below in Table 3.

Table 3: Summary of Online Records

Record Type	Distance & Direction	Notes
96 Otter records	The records provided are for a 10 km grid square, due to the low resolution of these records, it is not possible to comment if they are hydrologically connected to the site. The records are west of the Addenbrookes hospital located outside of the site boundary.	Due to the low resolution of the grid references, no accurate location could be attributed with these records.
1 Otter record	0.78 km west of the central site boundary.	The record is located along the River Granta, upstream from the survey area.

3.1.3 Field Survey Results

Otter spraints and potential places of otter shelter were identified during the survey. Table 4 summarises the results of the survey and Figure 2 shows the locations of signs of otter activity with target note numbers and any holts or couches which were identified. Photographs for each target note number are provided in Appendix B.

Table 4: Target Notes from Survey Conducted 27/02/2020 and 28/02/2020

Target Note	Ordnance Survey National Grid Reference	Description	Notes
1	TL 48477 51240	Otter spraint	The spraint was located on an exposed tree root above the river bank.
2	TL 48477 51240	Potential otter couch	The potential couch was located under a fallen tree which was located on the river bank. Otter footprints were also found on the bank in front of the potential couch and on the bank of the adjacent land drainage ditch discharging into the River Granta.
3	TL 51774 49439	Potential otter couch	The potential couch had smudged suspected otter footprints around the area. The area was well sheltered and located on the northern river bank.
4	TL 51833 49341	Otter spraint	There is otter spraint staining on the northern bank of the river, under the bridge for the A11.
5	TL 51831 49336	Otter spraint	Two otter spraints were found on the southern bank of the River Granta, under the A11.
6	TL 51831 49336	Otter slide	Two potential otter slides were found on the southern bank of the River Granta, under the bridge for the A11. Two otter spraints were found next to the potential slide locations.

Target Note	Ordnance Survey National Grid Reference	Description	Notes
7	TL 51868 49324	Otter slide	A potential otter slide was found on the southern river bank, under the bridge for the A11.
8	TL 51870 49328	Otter spraint	Four otter spraints were found under the bridge for the A11. All four spraints were located within a 1 m linear distance, along the northern river bank.
9	TL 51833 49341	Otter slide	A potential otter slide was located on the northern bank of the River Granta, under the bridge for the A11. Evidence of otter spraint staining was found next to the slide location.
10	TL 51868 49324	Potential otter resting place	The drainage holes from the bridge may provide suitable refuge for otter, due to other features identified including spraints and a potential slide it could not be determined if this feature has been or is being used as a potential otter resting place.
11	TL 51831 49336	Potential otter resting place	The drainage holes from the bridge may provide suitable refuge for otter, due to other features identified including spraints and a potential slide it could not be determined if this feature has been or is being used as a potential otter resting place.

4.0 Legislation

4.1 Otter

Otter is a Species of Principal Importance in England (Natural Environment and Rural Communities Act 2006 Section 41)(NERC Act) and is afforded full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5 of the Act. Otter also receive full protection as European Protected Species under Section 41 of The Conservation of Habitats and Species Regulations 2017 (as amended) through their inclusion on Schedule 2 of the Regulations.

It is an offence *inter alia* to:

- Intentionally, deliberately or recklessly capture, kill, injure or take a wild otter; and/or
- Intentionally, deliberately or recklessly damage or destroy any breeding site, structure or resting place which any otter uses for shelter or protection; and/or
- Intentionally, deliberately or recklessly disturb any otter while it is occupying a structure or place which it uses for shelter or protection; and/or
- Intentionally or recklessly obstruct access to any structure or place which an otter uses for shelter or protection; and/or
- Deliberately take an animal; and/or
- Deliberately possess or control, transport, sell or exchange or offer for sale or exchange and live or dead otter or any part or derivative of one (if obtained after May 1994); and/or
- Sell, offer or expose for sale, or possess or transport for the purpose of sale, any live or dead otter, or any part of anything derived from such an animal; and/or
- Publish or cause to be published any advertisement likely to be understood as conveying that one buys or sells, or intends to buy or sell, any of those things; and/or
- Knowingly cause or permit any of the above acts to be carried out.

5.0 Summary

The following otter evidence recorded during the survey is given below:

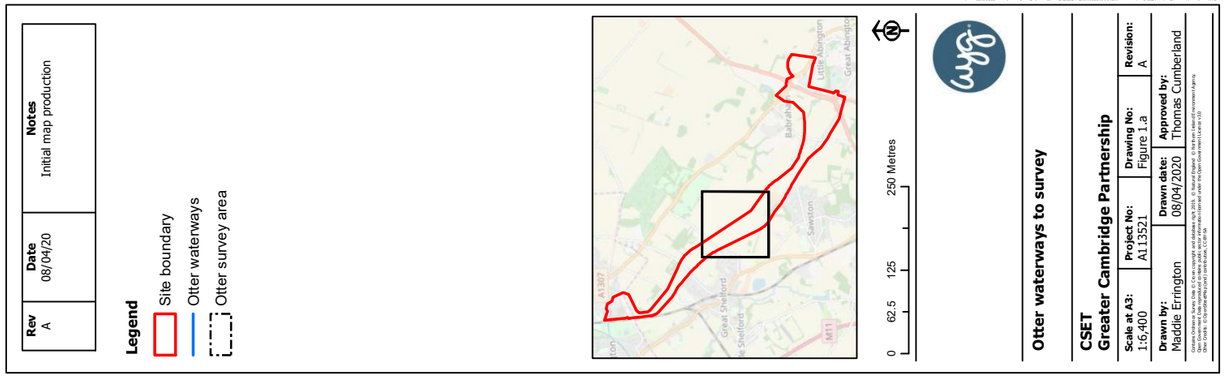
- Eight individual otter spraints were identified within the site boundary.
- Four potential otter slides were identified within the site boundary.
- Two potential otter holts were identified within the site boundary.
- Two potential otter couches were identified within the site boundary.

6.0 References

- Chanin, P. (2003a). *Monitoring the Otter Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough. Biodiversity: The UK Action Plan. HMSO (1994), London, UK.
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2019). Advice note: On the lifespan of ecological reports and surveys. CIEEM, Hampshire.
- Plowman Craven, (2018), Cambridge South East Transport Study Phase 2: Strategy 1: Preliminary Ecological Appraisal.
- Plowman Craven, (2019), Greater Cambridgeshire Partnership: A1307 Haverhill to Cambridge: Otter Survey
- Wildlife and Countryside Act, 1981 (as amended), HMSO.
- WYG (2019) Cambridgeshire South East Transport Strategy (CSET): Constraints Report.

FIGURES

Figure 1 – Site Location Plan
Figure 2 – Otter Evidence



Rev	Date	Notes
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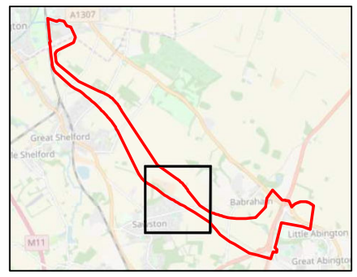
Legend

- Site boundary
- Otter waterways
- Otter survey area



0 62.5 125 250 Metres

N

Otter waterways to survey

CSET
Greater Cambridge Partnership

Scale at A3:	Project No:	Drawing No:	Revision:
1:6,400	A113521	Figure 1.b	A

Drawn by:	Drawn date:	Approved by:
Maddie Errington	08/04/2020	Thomas Cumberland

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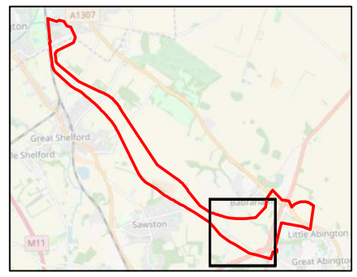
Rev	Date	Notes
A	08/04/20	Initial map production

Legend

- Site boundary
- Otter waterways
- Otter survey area



0 62.5 125 250 Metres

N

Otter waterways to survey

CSET
Greater Cambridge Partnership

Scale at A3:	Project No:	Drawing No:	Revision:
1:6,400	A113521	Figure 1.c	A

Drawn by:	Drawn date:	Approved by:
Maddie Errington	08/04/2020	Thomas Cumberland

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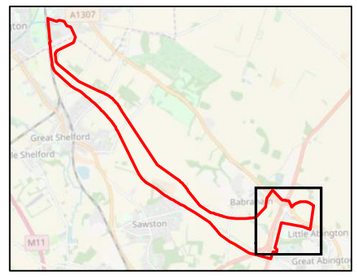
Rev	Date	Notes
A	08/04/20	Initial map production

Legend

- Site boundary
- Otter waterways
- Otter survey area



0 62.5 125 250 Metres

Otter waterways to survey

CSET
Greater Cambridge Partnership

Scale at A3:	Project No:	Drawing No:	Revision:
1:6,400	A113521	Figure 1.d	A

Drawn by:	Drawn date:	Approved by:
Maddie Errington	08/04/2020	Thomas Cumberland

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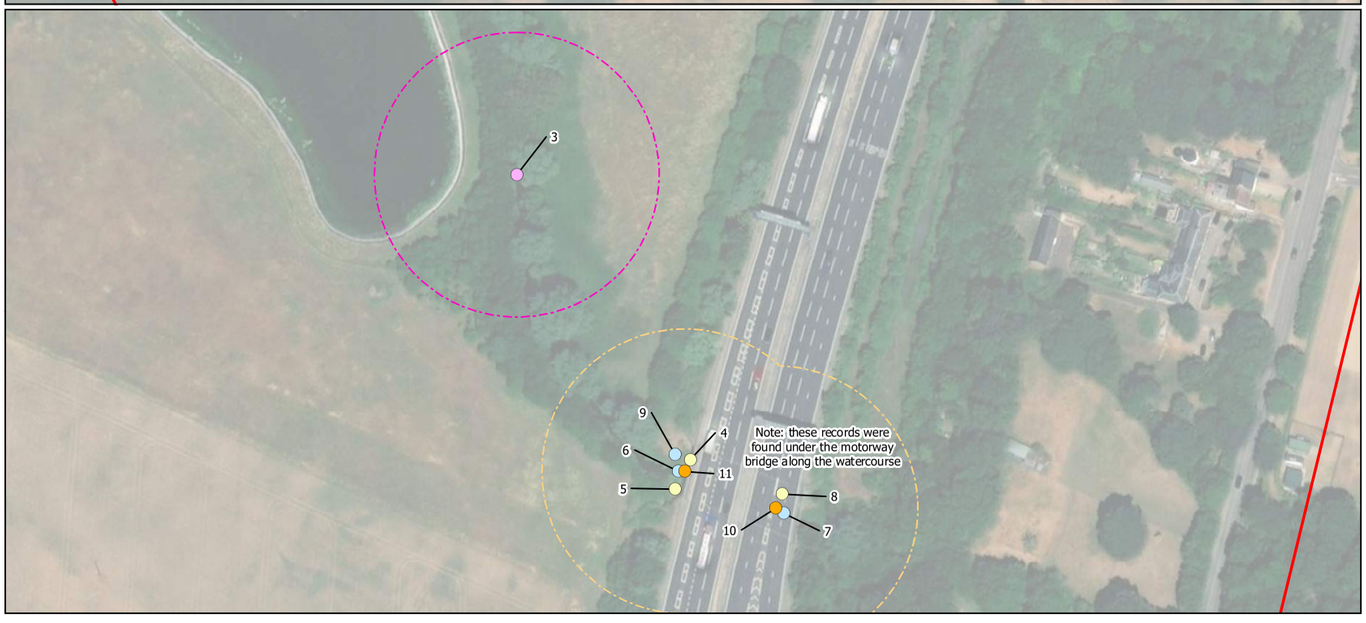
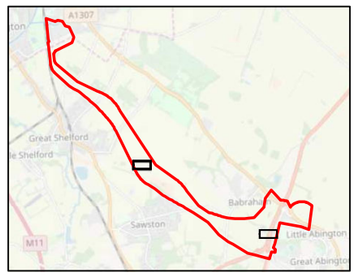


Rev	Date	Notes
A	13/03/20	Initial map production

Legend

- Site boundary
- Otter evidence - Resting place
- Otter evidence - Couch
- Otter evidence - Slide
- Otter evidence - Spraint
- Otter evidence - Couch 50m buffer
- Otter evidence - Resting place 50m buffer



0 15 30 60 Metres

Otter Evidence

CSET
Greater Cambridge Partnership

Scale at A3:	Project No:	Drawing No:	Revision:
1:1,500	A113521	Figure 2	A

Drawn by:	Drawn date:	Approved by:
Ben Blowers	13/03/2020	Thomas Cumberland

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Appendix A – Report Conditions

This Report has been prepared using reasonable skill and care for the sole benefit of Greater Cambridgeshire Partnership ("the Client") for the proposed uses stated in the report by WYG Environment Planning Transport Limited ("WYG"). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

No liability is accepted or warranty given for; unconfirmed data, third party documents and information supplied to WYG or for the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report. WYG does not purport to provide specialist legal, tax or accounting advice.

The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors

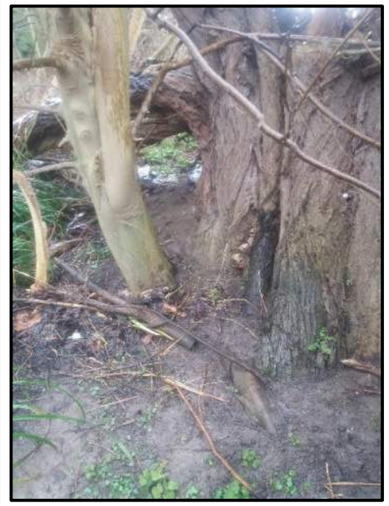
Cambridgeshire South East Transport Strategy (CSET): Factual
Otter Report

Appendix B – Target Notes and Photographs from Otter Survey

Greater Cambridgeshire Partnership June 2020
A113521

Target Note No	Ordnance Survey National Grid Reference / Description	Photographs
1	TL 48477 51240 The spraint was located on an exposed tree root above the river bank.	
2	TL 48477 51240 The potential couch was located under a fallen tree which was located on the river bank. Otter footprints were also found on the bank in front of the potential couch and on the bank of the adjacent land drainage ditch discharging into the River Granta.	

Cambridgeshire South East Transport Strategy (CSET): Factual
Otter Report

Target Note No	Ordnance Survey National Grid Reference / Description	Photographs
3	TL 51774 49439 The potential couch had smudged suspected otter footprints around the area. The area was well sheltered and located on the northern river bank.	
4	TL 51833 49341 There is otter spraint staining on the northern bank of the river, under the bridge for the A11.	

Target Note No	Ordnance Survey National Grid Reference / Description	Photographs
5	TL 51831 49336 Two otter spraints were found on the southern bank of the River Granta, under the A11.	
6	TL 51831 49336 Two potential otter slides were found on the southern bank of the River Granta.	

Cambridgeshire South East Transport Strategy (CSET): Factual
Otter Report

Target Note No	Ordnance Survey National Grid Reference / Description	Photographs
7	TL 51868 49324 A potential otter slide was found on the southern river bank, under the bridge for the A11.	
8	TL 51870 49328 Four otter spraints were found under the bridge for the A11. All four spraints were located within a 1 m linear distance, along the northern river bank.	

Greater Cambridgeshire Partnership June 2020
A113521

Target Note No	Ordnance Survey National Grid Reference / Description	Photographs
9	TL 51833 49341 The potential otter slide was located on the northern bank of the River Granta, under the bridge for the A11.	
10	TL 51868 49324 The potential holt was located under the bridge of the A11. The potential holt is a circular drainage hole. The length of the drainage hole could not be determined and therefore cannot at this stage be discounted as a potential otter holt.	

Cambridgeshire South East Transport Strategy (CSET): Factual
Otter Report

Target Note No	Ordnance Survey National Grid Reference / Description	Photographs
11	TL 51831 49336 The potential holt was located under the bridge of the A11. The potential holt is a circular drainage hole. The length of the drainage hole could not be determined and therefore cannot at this stage be discounted as a potential otter holt.	

Greater Cambridgeshire Partnership June 2020
A113521

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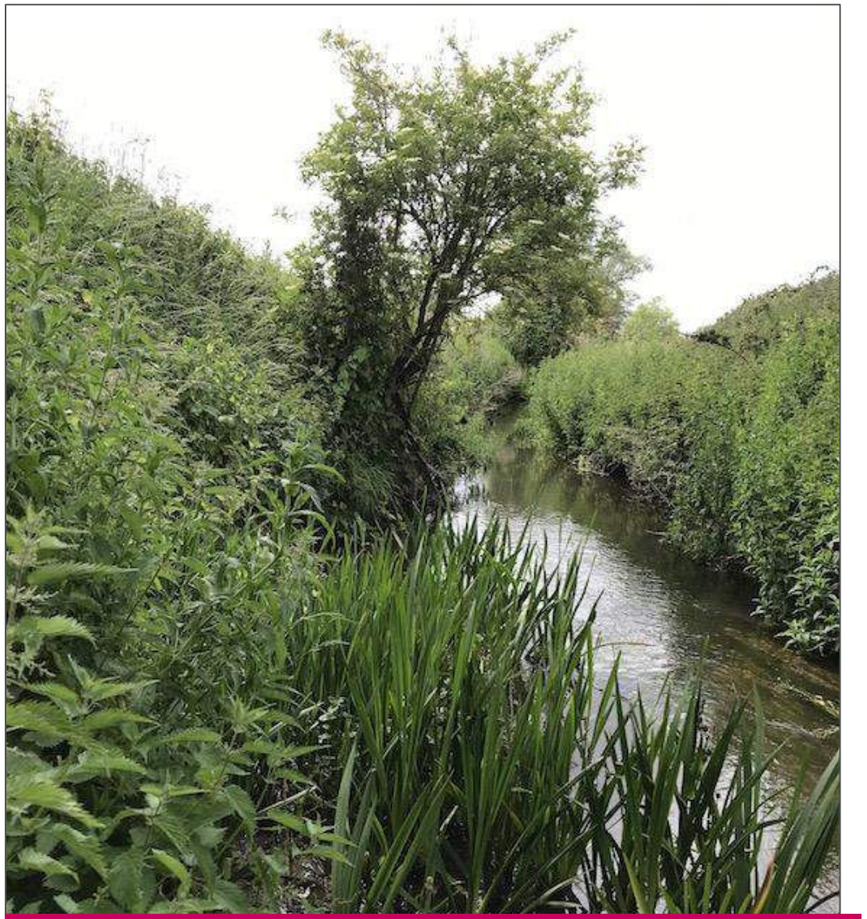

Cambridge South East Transport (CSET) Phase 2 Water Vole Survey Report

March 2021

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Quality Management

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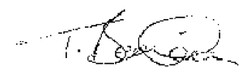
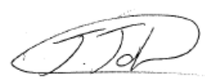
Reviewed by	Tabatha Boniface CEnv MCIEEM Ecology Technical Lead	Signature (for file)	
Authorised by	James Johnston ACIEEM Principal Ecologist	Signature (for file)	

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1. Summary

Capita Real Estate & Infrastructure's Ecologists were commissioned by the Greater Cambridgeshire Partnership to undertake water vole surveys. These surveys were undertaken across the route of Phase 2 of the Cambridge South East Transport (CSET) Project between Cambridge Biomedical Campus to A11 (near Babraham) in Cambridgeshire (henceforth referred to as the Scheme).

Surveys were carried out between May and October focussing on watercourses likely to be affected by the preferred route.

Water voles were recorded in all four watercourses surveyed: two locations at the River Granta (D1 & D2), Hobson's Conduit (D4) and a drainage ditch linked to the River Granta (D2E).

Low populations were recorded in the sections surveyed along the River Granta (D1 & D2) and Hobson's Conduit (D4) with a moderate/high population recorded in a drainage ditch linked to the River Granta D2E. It is possible that water vole populations in the River Granta are an underestimate as no late season survey was undertaken although this is considered more likely in D2. Hobsons Conduit could support higher populations in the section west of the main railway line where disturbance is less which now lies within the altered red line boundary and this may require further investigation.

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2. Introduction

2.1 Background

2.1.1. Capita Real Estate & Infrastructure's Ecologists were commissioned by the Greater Cambridgeshire Partnership (GCP) in March 2020 to undertake water vole surveys in relation to the development of The Cambridge South East Transport (CSET) Phase 2, (the 'Scheme').

2.1.2. The aim of the water vole survey is to summarise the results of the baseline surveys conducted between May and September 2020 to inform the design of the Scheme.

2.2 Project Description and Purpose of the Scheme

2.2.1. The Cambridge South East Transport (CSET) Project aims to create a vital link to ease congestion, offer sustainable travel choices, connect communities, and support growth in the in the South East of Cambridge. CSET will form part of the Cambridgeshire Autonomous Metro, providing high quality, frequent and affordable public transport.

2.2.2. CSET Phase 2 comprises a segregated public transport route from the A11 (near Brabham) to the Cambridge Biomedical Campus (CBC). This bus route would include new walking, cycling and equestrian links.

2.3 Legislation and Policy

2.3.1. Water voles receive protection in the UK as a result of both legislation and planning policies. This section outlines the primary legislation protecting water voles. All of the information below is relevant to this water vole report and to the work proposed at the development site.

Legislation

Wildlife & Countryside Act 1981 (as amended)

2.3.2. Water vole is listed under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and is afforded full protection under Section 9 of the Act, it is an offence to:

- Intentionally capture, injure or kill a water vole
- Possess or control a living or dead water vole, or any part of a water vole

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- Intentionally, or recklessly, damage, destroy, or obstruct access to any place that a water vole uses for shelter or protection, or disturb a water vole while it is occupying such a place and,
- Sell, offer for sale or advertise for sale any living or dead water vole.

Natural Environment and Rural Communities (NERC) Act 2006

2.3.3. Section 40 of the NERC Act places a statutory duty on public bodies, such as local authorities, that "every public body must, in exercising its functions have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity".

2.3.4. Section 41 of the NERC Act requires the Secretary of State to draw up a list of Habitats and Species of Principal Importance which should be used to guide decision makers (which include local authorities) in implementing their duty under Section 40.

2.3.5. Water vole is also listed as a Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

Planning Policy

2.3.6. National Planning Policy is set out by the National Planning Policy Framework (NPPF February 2019) combined with the guidance document Planning for Biodiversity and Geological Conservation: A Guide to Good Practice" (ODPM 2005).

2.3.7. Biodiversity net gains are referenced strongly in terms of developing local planning policy and decision-making for development applications. The environmental test of sustainable development requires planning policy and planning decisions to help to 'improve biodiversity' (paragraph 8c).

2.3.8. References to biodiversity net gain elsewhere in the new NPPF (such as paragraph 175d) support the delivery of biodiversity net gain through sustainable development. Net gain for biodiversity is far more prominent than in the previous NPPF and considers a holistic landscape approach to protect, and enhance biodiversity promoting conservation, restoration and enhancement of Priority Habitats (also listed as Habitats of Principal Importance) identified under the NERC Act 2006), ecological networks and the protection and recovery of Priority Species (also listed as Species of Principal Importance) identified under the NERC Act 2006). The NPPF includes requirements for planning authorities to identifying and pursuing opportunities for securing measurable net gains for biodiversity (paragraph 174b).

2.3.9. Protected sites and species are a material consideration in determining planning applications and therefore all information relating to protected sites and species must be submitted with planning submissions for determination of the whole application. The NPPF (paragraph 175) which promotes Local Planning Authorities to assess if significant harm would occur to biodiversity and decide accordingly.

Biodiversity Policy

2.3.10. Section 41 of the NERC Act requires the Secretary of State to draw up a list of Habitats and Species of Principal Importance which should be used to guide decision-makers (which include local authorities) in implementing their duty under Section 40. Water Vole is considered Species of Principal Importance, an important factor when considering proposed developments, in accordance with the Natural Environment and Rural Communities (NERC) Act 2006.

2.3.11. Water vole is recognised as a Priority Species in the Cambridgeshire and Biodiversity Plan (CPBA).

2.4 Personnel and Quality Assurance

2.4.1. All ecologists employed by Capita adopt best practice working methods in undertaking surveys including the Chartered Institute of Ecology and Environmental Management's (CIEEM) code of professional and all fieldwork is carried out in accordance with current best practice guidelines and under the supervision of senior staff and appropriately licensed ecologists.

2.4.2. The water vole surveys were led by Senior Ecologist, Ann Sherwood, and assisted by Assistant Ecologist, Mark Johnson.

2.4.3. Ann Sherwood is a full member of CIEEM and has been an ecological consultant for over 35 years. Ann has a broad range of professional experience in consulting services including protected species surveys, licensed works, and mitigation/enhancement schemes. She is familiar with all water vole field signs. Ann has undertaken numerous water vole surveys and, in the past, has trapped and translocated water voles for a small scheme in Fenland. Over the last three years, Ann has worked on numerous projects requiring water vole displacement works and worked under both a Class Licence and full development licence involving locating and marking burrows, digging out burrows and overseeing installation of pre-planted coir rolls, coir matting etc. as part of enhancement/mitigation works.

2.4.4. Mark Johnson is an Assistant Ecologist with three years' experience working within professional ecological consultancy. He is familiar with the majority of water vole field signs and continues to develop his ID skills. He has previously assisted with undertaking water vole surveys on national infrastructure projects (specifically High Speed Two).

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3. Methods

3.1 Survey and Report Objectives

3.1.1. The surveys and report were carried out to fulfil the following objectives:

1. To survey watercourses identified through the Phase 1 habitat survey and identified in the scoping document provided by the client and to identify any new habitat suitable of supporting water voles.

2. To identify any evidence of usage of the site by water voles (e.g. burrows, feeding stations and latrines).

3.2 Field Survey

3.2.1. The survey involved the identification of water vole activity within five metres of the channel of the watercourse. The survey applied the principles of the standard methodologies of *Strachan and Moorhouse* (2011) and the new guidance January 2016 (Dean, M. *et al*).

3.2.2. Two sections of the River Granta were surveyed west to east within the red line boundary (at Stapleford - Bury/Deal Farms and Babraham - Cheveley Park Estate) plus an additional 100m upstream and downstream. The survey in both sections of the River Granta were approximately 1km in both cases. Refer to Table 1 in Section 4 for the survey dates and weather conditions.

3.2.3. The survey area at Babraham extended between woodland (W6) and the A11 road bridge with the 100m upstream section incorporating part of the section of the river adjacent to the woodland to 100m downstream beyond the A11 road bridge.

3.2.4. The drainage ditch at Sawston located on Deal Farm was surveyed in its entirety between the River Granta and the end of the ditch where it culminated at a culvert under a field access. The ditch continues through the culvert running south adjacent to woodland (W4). This section was not included in the survey as it was sub-optimal for water voles being heavily shaded and will not be impacted by the scheme. The length of ditch surveyed was approximately 250m.

3.2.5. The drainage ditch at Hobson's Conduit was surveyed from Nine Wells Woodland Local Nature Reserve (LNR) to a cycleway footbridge adjacent to the mainline railway. The survey did not extend beyond the railway line. The approximate length surveyed was 135m.

3.2.6. The sections surveyed are as follows:

- D1 River Granta at Babraham – TL 51268 49850 – TL52069 49249.

- D2 River Granta at Stapleford – TL48019 51246 - TL49005 51228.
- D2E Drainage Ditch at Sawston – TL48481 51232 – TL48630 51044.
- D4 Hobson's Conduit at Nine Wells (spring fed) – TL46061 54136 – TL45940 54194. 100m upstream and downstream was not completed at this location due to the shaded nature of the ditch and it being open to the public receiving a significant amount of disturbance making it sub-optimal for water voles.

3.2.7. Field surveys were undertaken to identify presence/likely absence of water vole in the watercourses surveyed.

3.2.8. The timing of the surveys was in line with best practice guidelines detailed within the Water Vole Mitigation Handbook (Dean et al, 2016); with one set of surveys being undertaken during the first half of the season (mid-April to the end of June) and one set during the second half of the season (July to September inclusive), to allow for changes in habitat suitability over the course of the breeding season.

3.2.9. Field signs searched for included:

Latrine sites

3.2.10. The presence of the water vole can be determined from its droppings, which provide the most distinctive field sign. They are roughly 8-12mm long and 4-5mm wide, cylindrical with blunt ends. Their colour ranges from black, brown and green, depending on age, diet and water content. Most droppings are deposited on latrine sites, which can be found at favoured areas where the voles leave and enter the water, at discrete sites near to their burrows and are used to mark territorial boundaries. Breeding voles use regular latrine sites along water margins, and often consist of a flattened mass of old droppings (drumming sites) with fresh ones on top.

Feeding stations

3.2.11. Water voles foraging remains and feeding stations are usually noted along the water's edge and at burrow entrances. Feeding remains consist of neat piles of chewed off lengths of vegetation. These grazing remains typically measure 8-10cm, showing two large incisor marks. Grazing remains also double as food caches and are often accompanied by droppings.

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Burrows

3.2.12. Water vole burrows have an approximate hole size of 4-8cm. The burrows can appear as a series of holes along the water's edge, some may open below the water line, whilst others can occur amongst the vegetation up to three metres from the toe of the bank. Burrows may also show evidence of a closely cropped grazed lawn, where a female water vole has nibbled the vegetation short within easy reach of the burrow.

Prints

3.2.13. Imprints from water voles show four digits from the fore foot and five digits in the hind foot. The imprinted digits form a star shape of splayed-out toes. Water vole tracks are very difficult to distinguish between tracks made from the brown rat, particularly young animals. Generally, water vole prints tend to be much smaller than rat prints, but it is important to note that they cannot always be used as reliable indicators in the absence of other water vole field signs.

Runways

3.2.14. These are low tunnels that are pushed through the vegetation and often lead to burrows or feeding stations.

3.2.15. The surveys were undertaken in-channel, where possible, as this is the best method for recording burrows at the toe of the bank and feeding stations and latrines in stands of vegetation.

Additional Survey Methods

3.2.16. Due to high water levels and deep silt in some sections of the watercourses, these were not considered to survey in-channel. In this instance it was agreed with the client that floats (pieces of wall insulation approximately 300mm by 150mm in size) secured with string and a cane to the bank or a cane through a hole in the float would be placed in the channel equally spaced along the watercourse to monitor activity. Water voles readily use features such as these as latrine sites.

3.2.17. A total of eight floats were deployed along Hobson's Conduit at Nine Wells (D4) on 31 July 2020.

3.2.18. A total of 24 floats were deployed along the drainage ditch at Sawston on 30 June 2020.

3.2.19. While this is a deviation from the standard methodology it is a very useful method for monitoring presence/likely absence from watercourses where it is not possible for health and safety reasons to enter the watercourse.

Evaluation Methods

3.2.20. The population size supported by each water course was assessed based on the guidelines set out in the Water Vole Mitigation Handbook (Dean et al, 2016), which are as follows:

First half of the survey season

- LOW – less than or equal to 2 latrines/100m (or none but with other confirmatory signs)
- MEDIUM – 3 to 9 latrines per 100m; and,
- HIGH - 10 or more latrines per 100m.

Second half of the survey season

- LOW – less than or equal to 5 latrines per 100m (or none but with other confirmatory signs)
- MEDIUM – 6 to 19 latrines per 100m; and,
- HIGH – 20 or more latrines per 100m.

3.3 Survey Limitations and Assumptions

3.3.1. At the point of commencement of the surveys in April 2020 measures relating to the management of the coronavirus pandemic came into force which caused a delay to the start of surveys. This occurred as it was determined between the client and Capita how work could be carried out safely. Therefore, water vole surveys were not commenced until May 2020. It is not considered that this has led to any limitation to the survey results.

3.3.2. To provide the most optimal survey data in terms of the initial population density, surveys should ideally be carried out in May and then in September when the population is at its highest density. However, due to project time constraints set out initially in the scope provided, surveys were requested to be undertaken in May and July. Due to Covid-19 restrictions and the late start of the project, the initial surveys were not undertaken until late May/early June. In two watercourses D2E and D4, in-channel surveys were physically constrained, and a different methodology had to be agreed, meaning that survey start dates for these two watercourses were delayed until late June and July.

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3.3.3. The surveys in D1 at Babraham were undertaken 2 months apart and therefore fulfilled the scope. However, in D2 at Stapleford, the surveys were undertaken less than 2 months apart due to the timing constraints of the original scope. However, two surveys were undertaken as a minimum and confirm the presence of water voles in the two sections surveyed along the River Granta.

3.3.4. The late surveys of the floats set out in D2E and D4 indicated that water voles are present in both watercourses with activity levels and extent of activity increasing significantly by autumn when the floats were collected, particularly in D2E suggesting that a late survey was indeed beneficial in providing more robust results overall.

3.3.5. It is possible that if a late season survey had been undertaken in D1 and D2, then activity levels may have increased. Therefore, the results may have underestimated the likely of population size especially in D2. D1 at Babraham, was a heavily shaded section of the River Granta with long stretches of watercourse with no emergent vegetation and where it was present, this was in small discrete patches in a few open areas only, suggesting that the habitats here are sub-optimal for water voles due to lack of suitable cover and food.

3.3.6. It is not always possible to provide definitive assessments of a species' presence/likely absence at a site and so in the absence of direct evidence, assessments are based on the presence of suitable habitat within/adjacent to a site.

Physical Access

3.3.7. Owing to the modified sections of the River Granta with weirs, pipelines and some large deep pools (>1.5m) which have developed through normal geophysical process, these were not walked in-channel due to overriding safety concerns in some limited places. Despite this, most of the survey section was surveyed in-channel and both banks could be surveyed, although dense overhanging vegetation including scrub prevented access to the bank sides and toe of the banks in places.

Land Access

3.3.8. All land either side of the River Granta D2 and the drainage ditch D2E at Sawston was accessible. A section of Hobson's Conduit west of the railway line at Nine Wells D4 was not surveyed as this lay outside the red line boundary at the time of the survey and on the west side of the main railway line making access difficult.

3.3.9. Attempts to survey the Hobson's Conduit at Nine Wells in-channel was aborted twice due to the presence of deep silt and water (1 June 2020 and again on 17 July 2020). Observations could not to be made from the bank top due to the presence of dense aquatic vegetation obscuring the toe of the banks where burrows were most likely to be present and the presence of scattered scrub/hedgerow shrubs present on the left bank. It was agreed with the client that floats (pieces of wall insulation approximately 300mm by 150mm in size) secured with string and a cane to the bank or a cane through a hole in the float would be placed in the channel equally spaced along the watercourse to monitor activity.

3.3.10. A total of eight floats were deployed along the ditch at Hobson's Conduit, Nine Wells (D4) on 31 July 2020.

3.3.11. Similarly, an attempt was made to survey the drainage ditch (D2E) at Sawston on 9 June 2020 but due to deep silt, water depth more than 0.5m and the presence of dense emergent vegetation in places along the ditch, it was not possible to survey the ditch in-channel. This also prevented surveys from the bank, and it was agreed that floats could be used to determine presence or likely absence.

3.3.12. A total of 24 floats were deployed along the ditch on 30 June 2020.

3.3.13. While this is a deviation from the standard methodology it is a very useful method for monitoring presence/likely absence from watercourses where it is not possible for health and safety reasons to enter the watercourse. The watercourses could not be surveyed by boat due to shallow water in the River Granta and the narrow width and steep banks of the ditches. Water voles readily use features such as these as latrine sites.

3.3.14. The above survey constraints have been considered in the conclusions drawn in this report.

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4. Results

4.1 Field Survey

4.1.1. The dates of the surveys and weather conditions during the surveys are shown in Table 1 below.

Table 1: Date and Weather Conditions

Survey dates		Watercourse reference	Survey method	Weather Conditions
May	27	D1	In-channel	Dry sunny day with minimal chance of rain, temperature recorded as 13°C, at start of the survey reaching 30°C at midday. Good visibility. No constraint to survey
June	1	D1	In-channel	Dry, sunny, hot conditions with minimal chance of rain, Good visibility. (NB. D1 survey completed 100m up and downstream beyond red line boundary)
		D4	In-channel	
	9	D2	In-channel (partial survey only due to deep silt and vegetation causing H&S issues	Dry sunny conditions throughout survey with minimal cloud cover (<10%) high temperatures from start to finish of survey 20°C to 32°C.
July	15	D2	In-channel	Dry, humid, throughout survey and overcast. Temperatures were around 17°C.No constraint to survey.
	16	D1	In-channel	Dry, sunny conditions throughout survey with minimal cloud cover. Temperatures ranged from 17°C to 21°C. No constraint to survey.
	17	D4	In-channel (partial survey only due to deep silt and vegetation causing H&S issues	Dry, sunny conditions throughout survey with some cloud cover. Temperature was around 16ºC.

Survey dates		Watercourse reference	Survey method	Weather Conditions
August	11	D4	Eight floats checked for signs of use.	Dry, very hot and sunny all day with temperatures ranging between 23°C and 30° C. Good visibility and low wind speeds.
	27	D4	Floats observed by local naturalist and observations sent to Capita.	Not known but historic records show that it was dry, sunny with some cloud, temperatures ranged between 14ºC -19ºC during the day.
September	7	D4	Floats observed by local naturalist and observations sent to Capita.	Not known but historic records show that it was dry, sunny with temperatures ranging between 16ºC -20ºC during the day.
	15	D4	Floats observed by local naturalist and observations sent to Capita.	Not known but historic records show that it was dry, sunny with temperatures ranging between 17ºC -29ºC during the day.
	17	D2E	24 floats checked for signs of use.	Dry, sunny conditions throughout survey with minimal cloud cover. Temperatures ranged from 21°C to 26°C during the day. No constraint to survey
	27	D4	Eight floats checked for signs of use, floats removed.	Dry, sunny. Temperatures were cool at 13°C. No constraint to survey.
October	14	D2E	Twenty-four floats collected and checked	Dry, partially cloudy with temperatures ranging between 11ºC and 14ºC at noon.

4.1.2. Plans detailing the locations of field signs in the River Granta are shown in Appendix 1 and the results of all surveys are shown in Appendix 2. The following is a summary of findings for each watercourse surveyed in the early season (mid-April to the end of June) and in the late season for July-October).

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Watercourse descriptions/suitability

4.1.3. The River Granta is a small river flowing between Saffron Waldon and Haverhill and its river catchment covers the region south of Cambridge.

4.1.4. It is characterised by the base flow from the underlying chalk geology. The catchment is predominantly rural with an agricultural land use. The catchment has important wetland Sites of Special Scientific Interest which may be affected if conditions change in the river. The rivers and tributaries are important for priority biodiversity species including white-clawed crayfish, otter, water vole and brown trout.

The River Granta at Babraham (D1)

4.1.5. The section surveyed at Babraham is largely straight with gentle meandering bends in places. At the western extent, the river flows past broadleaved woodland at Mill Hole (W6). The banks in this stretch of the river are shallower and less steep than those at Stapleford, ranging between 1m to 3m in width. There are features associated with this stretch of the River Granta which include a ford and two weirs with deep pools which have formed downstream of these. The river then flows under the A11 via a wide concrete road bridge, past pony-grazed paddocks and broadleaved woodland and then under Newmarket Road via a low bridge and through more broadleaved woodland south of Newmarket Road.

4.1.6. The river is tree-lined along most of its length with some large old willows present. To the south lies grassland and a farm track adjacent to the river along part of the surveyed section. Plantation broadleaved woodland separates the river from a large reservoir.

4.1.7. The banks support largely terrestrial vegetation. There was no riparian habitat adjacent to the river. In-channel vegetation was sparse and comprised occasional patches of branched bur-reed *Sparganium erectum*, reed-canary grass *Phalaris arundinacea*, reed sweet-grass *Glyceria maxima* and lesser water-parsnip *Berula erecta* in open sections of the channel. Other species included pendulous sedge *Carex pendula*, water mint *Mentha aquatica*, arrowhead *Sagittaria sagittifolia,* blue water speedwell *Veronica anagallis-aquatica* and brooklime *Veronica beccabunga*. Common pond weed *Lemna minor*, Canadian pondweed *Elodea canadensis* and stream water crowfoot *Ranunculus fluitans* were also recorded in the channel. The non-native invasive species Himalayan balsam *Impatiens glandulifera* was also recorded occasionally along the banks.

4.1.8. The usual range of the River Granta at Babraham, according to the River Levels UK (https://riverlevels.uk/river-granta-babraham) has been between 0.04m and 0.24m. These levels have been constant for 90% of the time since monitoring began. The highest level ever recorded at the River Granta at Babraham was 1.10m.

4.1.9. The typical recent level of the River Granta at Babraham over the past 12 months has been between 0.05m and 0.11m. It has been between these levels for at least 154 days in the past year.

4.1.10. The highest level ever recorded at the River Granta at Babraham was 1.10m.

4.1.11. The hot dry weather throughout these surveys in 2020 has meant that water levels have been low throughout.

The River Granta – Stapleford (D2)

4.1.12. The section surveyed at Stapleford comprised a long stretch of largely straight channel flowing westwards varying from 2m to 4m in width. At the eastern end of the surveyed section the river was more meandering with approximately three bends. Three ditches feed into the river, two were dry ditches (D5 and D6) colonised by trees and scrub or short sections of hedgerow and the other a wet drainage ditch (D2E) with occasional young trees/scrub and 6m sown grass margins either side.

4.1.13. The banks were generally steep and wide with a mosaic of terrestrial vegetation on the banks with overhanging trees, scrub in places on both sides of the river. In-channel vegetation comprised occasional patches of emergent vegetation including common reed *Phragmites australis*, reed canary-grass and branched bur-reed. Common duckweed was present throughout the river with lesser water parsnip also recorded along with pendulous sedge and stream water crowfoot. The non-native invasive Himalayan balsam was recorded occasionally along both banks.

4.1.14. The right bank has a raised bund on top of the natural field. Riparian habitat was limited on land adjacent to the river except where common reed had encroached into the grass field margin south of the river at the eastern end. Dense scrub and numerous trees were present in places along some sections of the river, especially along the left bank. At the eastern end of the section surveyed, there was grassland to the north and south but overall, the river was abutted by the grass margins and arable land.

4.1.15. The water levels in the River Granta at Stapleford over the past 12 months (2020) have been between 0.03m and 0.20m, according to the River Levels UK website (https://riverlevels.uk/river-granta-stapleford). These levels have been maintained for at least 150 days in the past year.

4.1.16. Spates are known and the highest level ever recorded at the River Granta at Stapleford was 1.49m.

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Drainage Ditch D2E

4.1.17. The drainage ditch D2E feeds into River Granta from the south. The ditch has steep, wide banks with a narrow water channel approximately 1m wide and a silty bottom. The banks are dominated by grassland with occasional mature shrubs with willow trees at the confluence with the river. The watercourse supports a range of emergent and aquatic species including locally dominant common reed and lesser water-parsnip. Other species included hemp agrimony *Eupatorium cannabinum* and meadowsweet *Filipendula ulmaria*. The water levels were high in June 2020, but the levels dropped by late summer.

Hobson's Conduit, Nine Wells D4

4.1.18. The brook at Nine Wells is a flowing chalk stream arising from springs in Nine Wells Local Nature Reserve. It supports a range of emergent and aquatic plants including locally dominant lesser water parsnip, with occasional water-cress *Nasturtium officinale*, hard rush *Juncus inflexus*, greater spearwort *Ranunculus lingua*, water figwort *Scophularia auriculata* and blunt-fruited water starwort *Callitriche obtusangular*.

Water Vole Survey Results

4.1.19. Water vole activity was recorded in all four watercourses surveyed. The results of these surveys are presented in Tables 2-5 in Appendix A and shown in Drawings 1-3 in Appendices B, C & D. Relevant photographs are presented in Appendix E.

River Granta D1

4.1.20. The River Granta at Babraham (D1) had the least evidence of water vole activity with only three burrows recorded during the survey conducted on 27 May 2020. No other activity was recorded. By July, feeding signs were noted at three locations in stands of reed-canary grass. No latrines were recorded in either survey. A potential set of water vole footprints were recorded close to the weir. This suggests that the water vole population in this section of the River Granta is low.

River Granta D2

4.1.21. There were no signs of water vole activity in the River Granta at Stapleford (D2) recorded during the survey undertaken on 9 June 2020. By July, when the second survey was undertaken on 15 July 2020, there was significantly more activity recorded with several feeding stations noted in stands of reed-canary grass and six burrows. Very few latrines were recorded and these, and most of the other signs, were located at the western end of the surveyed section between the drainage ditch D2E and the start of the surveyed section, a distance of approximately 500m. This suggests that the water vole population in the River Granta is largely restricted to the western end of the surveyed section and is highly likely to be associated with the population of water voles recorded in D2E. The proposed new busway cuts through the Granta in this section.

Drainage Ditch D2E

4.1.22. The drainage ditch at Deal Farm (D2E) could not be surveyed for burrows due to the deep silt and water levels encountered in early June. After the floats were deployed on 30 June the floats were checked on 17 July 2020 and six out of the 24 floats had low numbers of droppings on them.

4.1.23. An incidental check was undertaken on 8 September 2020 indicated that most of the floats had evidence of droppings on them. Four floats could not be viewed due to the dense stands of common reed but 19 of the remaining 20 floats had droppings on them.

4.1.24. The floats were removed on 14 October and by this time all 24 floats had varying amounts of droppings, including fresh droppings, on them. Some floats were completely covered in old droppings indicating high activity levels and some floats used as regular latrine sites throughout this ditch. One float had fresh feeding signs present. Given that all 24 floats had droppings on them at the end of September with many of the floats heavily used, it can be concluded that the population in this ditch is high based on the evaluation methodology from Dean (2016).

Hobson's Conduit, Nine Wells D4

4.1.25. A partial survey of the watercourse at Nine Wells (D4) was attempted on two occasions (1 June and 17 July 2020). Approximately a third of the watercourse was surveyed and this revealed the presence of four burrows on 1 June, although none of these appeared particularly active. Two burrows were recorded on both the right and left banks. The second survey only recorded 3 burrows, all on the right bank. No latrines, droppings or feeding signs were recorded (see Appendix A, Table 5).

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4.1.26. The floats deployed in July were surveyed on 11 August and 27 September (when the floats were removed-see Appendix A, Table 5). By September all 8 floats had droppings on them but all had very low numbers, although two floats appeared to be used as latrine sites with several deposits noted. Survey dates and checks are detailed in Appendix A, Table 5).

4.1.27. A local recorder (John Meed), who has been surveying the area south of the Biomedical Campus and around Nine Wells for a number of years, sent additional observations of droppings on the floats on 27 August, 7/8 September, and 15/16 September. On all occasions, droppings were recorded, although no specific data was provided and it was not clear how many of the floats supported droppings. Photographs were also kindly supplied of any floats with droppings. Two of the floats did appear to be used as latrine sites with evidence of re-use, while the remaining floats had only a few droppings.

4.1.28. John Meed mentioned that he was aware that water voles were present in this watercourse but hadn't seen any for some time (pers. comm.) prior to seeing the droppings on the floats.

4.1.29. No early season surveys were undertaken using floats prior to the 11th August. The method was used to replace the two attempts to undertake an in-channel survey, the first in the early part of the season.

4.1.30. Overall, low numbers of droppings were recorded on the floats, with two floats seemingly being used as latrine sites. All floats had droppings on them by the end of the survey season, suggesting that the population is medium, based on the evaluation methodology. However, given that only two floats appeared to be used regularly as latrine sites, it is concluded that it is more likely that a low population of water voles is present in this stretch of the brook as the numbers of droppings did not increase significantly during the survey period (unlike that recorded in D2E). There is a public right of way adjacent to the ditch and a cycleway bridge across the watercourse which is well used. It is likely that this section of the watercourse suffers a significant level of disturbance which could affect the water vole population.

4.1.31. The brook continues under the railway line to the west and this lies within the new red line boundary. It is reasonable to assume that water voles are also present in this section of the brook, which is considerably less disturbed, therefore, it is likely that a higher population of water voles could be present. Further surveys will be required to ascertain the population size in the rest of Hobson's Conduit.

4.2 Incidental Records

4.2.1. Evidence of otter were found throughout the River Granta in the sections surveyed (D1 & D2). Numerous otter spraints were recorded and many were fresh signs. Laying-up places and possible couches were also recorded. Otter records are also shown in Table 3 in Appendix A and in Table 6 in Appendix E. Otter signs were not actively looked for during the survey at D2 on 15 July 2020.

4.2.2. Evidence of signal crayfish was also recorded in the River Granta at Babraham (D1) and this appeared to have been partially eaten by an otter.

4.2.3. Himalayan balsam is present throughout the sections surveyed along the River Granta (D1 & D2).

4.2.4. A small patch of New Zealand pygmy weed was also noted in the River Granta at Babraham near the A11 road bridge (TL 51822 49343).

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5. References

Dean, M Strachan, R. Gow, D and Andrews, R (2015). *The Water Vole Mitigation Handbook for Development and other Construction Activities*. Eds. Fiona Matthews & Paul Chanin. The Mammal Society, Southampton.

River Levels (2020) Available: https://riverlevels.uk/river-granta-linton#.X6Lg-Fj7S8E

Strachan R, Moorhouse, T. and Gelling, M (2011) *Water Vole Conservation Handbook 3rd Edition*. Wildlife Conservation Research Unit, Oxford.

Appendices

Appendix A – Water Vole Survey Results

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Table 2: Survey results D1 River Granta at Cheveley Park, Babraham

Feature	National Grid Reference	Right Bank (RB)/ Left Bank (LB)	Comments
D1	**Survey 1**	**27-5-20**	**(**100m up and downstream of red line boundary competed on 1 June 2020)
Burrow	TL 51351 49684	LB	Under deep ivy cover at toe of bank
Burrow	TL51752 49539	RB	
Burrow	TL51458 49633	LB	
D1	**Survey 2**	**16-7-20**	
Burrow	TL51268 49792	RB	Under nettles north of the ford
Feeding station	TL51336 49698	RB	
Burrow and feeding station	TL51389 49675	LB	In reed canary-grass
Feeding station	TL51388 49668	RB	In reed canary-grass
Possible water vole prints on muddy shelf	TL51531 49622	LB	By 2nd weir

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Table 3: Survey Results D2 River Granta at Stapleford

Feature	National Grid Reference	Right Bank (RB)/ Left Bank (LB)	Comments
D2	**Survey Visit 1**	**9-6-20**	
Otter spraint	TL48865 51258	LB	Old
Otter spraint	TL48883 51224	LB	Old on stones
Otter spraint	TL48865 51246	LB	On a rocky ledge
Otter spraint	TL48863 51252	LB	On a rocky ledge
Otter slide	TL48844 51277	RB	Possible otter slide
Otter couch	TL48474 51254	LB	Possible lay-up couch with and entry and exit point under large Crack Willow tree root
Mink trap	TL48059 51245		Gamekeeper conducts mink control
D2	**Survey Visit 2**	**15-7-20**	
Latrine	TL48012 51251	RB	Fresh
Droppings	TL48018 51252	LB	Fresh droppings x3
Burrow	TL48022 51251	RB	
Feeding station	TL48022 51251	RB	In reed-canary grass
Feeding station	TL48024 51255	RB	In reed-canary grass
Feeding station	TL4803151252	RB	In reed-canary grass
Burrow & feeding remains	TL48072 51244	RB	
Burrow	TL48086 51244	RB	
Feeding station	TL48107 51244	RB	In reed-canary grass
Burrow	TL48222 51233	RB	Old-inactive
Footprints	TL48345 51233	LB	Possible water vole prints
Feeding remains	TL48427 51246	LB	

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Feature	National Grid Reference	Right Bank (RB)/ Left Bank (LB)	Comments
Burrow	TL48760 51296	RB	
Burrow	TL48763 51298	RB	
Feeding station	TL48771 51299	RB	In reed-canary grass -Fresh
Feeding station	TL48884 51222	RB	Fresh

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Table 4: Survey Results Drainage Ditch D2E Drainage Ditch, Sawston

Feature	National Grid Reference	Comments
D2E	**Survey 1**	**17/7/20**
Fresh droppings	TL 48531 51164	Float 24 Finish
Fresh droppings	TL 48524 51176	Float 23
Fresh droppings	TL 48521 51178	Float 22
Fresh droppings	TL 48495 51210	Float 18
Fresh droppings	TL 48487 51228	Float 17
Fresh droppings	TL 48489 51222	Float 15
D2E	**Survey Visit 2**	**20/8/20**
Float not found	TL 48531 51164	Dense common reed
Float not found	TL 48524 51176	Dense common reed
Float not found	TL 48521 51178	Dense common reed
Float not found		Dense common reed
Droppings		Float 20
Droppings		Float 19
Droppings	TL 48495 51210	Float 18
Droppings	TL 48487 51228	Float 17
Droppings		Float 16
Droppings	TL 48489 51222	Float 15
Droppings		Float 14
Droppings		Float 13
Droppings		Float 12
Droppings		Float 11
Droppings		Float 10
Droppings		Float 9
Droppings		Float 8

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Feature	National Grid Reference	Comments
Droppings		Float 7
None		Float 6
Droppings		Float 5
Droppings		Float 4
Droppings		Float 3
Droppings		Float 2
None	TL48630 51044	Float 1 Start

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Table 5: Survey Results Hobsons Conduit, Nine Wells D4

Feature	National Grid Reference	Right Bank (RB)/ Left Bank (LB)	Comments
D4 – Hobson's Conduit	**Survey 1**	**1/6/20**	
Feature	**NGR**	**LB/RB**	**Comments**
Burrow	TL45954 54190	RB	Possible burrow
Burrow	TL45981 54179	RB	Inactive
Burrow	TL45992 54173	LB	Possible burrow, probably inactive
Burrow	TL45999 54170	LB	Possible burrow.
D4 – Hobson's Conduit	**Survey 2**	**17/7/20**	
Burrow	TL45947 54193	RB	
Burrow	TL45962 54185	RB	
Burrow	TL45964 54185	RB	
D4 – Hobson's Conduit	**Survey 3**	**11/8/20**	
Nothing	TL 45936 54194		Float 1 - Start
Nothing	TL 45967 54178		Float 2
Nothing	TL 45975 54174		Float 3
Nothing	TL 45992 54167		Float 4
Not found	TL 46009 54160		Float 5
Nothing	TL 46016 54157		Float 6
Nothing	TL 46028 54150		Float 7
Nothing	TL 46052 54141		Float 8 Finish
D4- Hobsons Conduit	Observation only (J.Meed pers.comm.)	**7/9/20**	Unofficial survey check. 2 floats reported with signs suggesting

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Feature	National Grid Reference	Right Bank (RB)/ Left Bank (LB)	Comments
			regular use. No other information provided
D4- Hobsons Conduit	Observation only (J.Meed pers.comm.)	**7/9/20**	Unofficial survey check, no further information provided.
D4 - Hobsons Conduit	Observation only (J.Meed pers.comm.)	**15/9/20**	Unofficial survey check (J.Meed). Only 5 floats reported as having droppings, 2 with additional deposits.
D4 - Hobsons Conduit	**Survey 4**	**27-9-20**	
Droppings	TL45936 54194	N/A	Float 1 Start
Droppings	TL 45967 54178	N/A	Float 2
Droppings	TL 45975 54174	N/A	Float 3
Droppings	TL 45992 54167	N/A	Float 4
Droppings	TL 46009 54160	N/A	Float 5
Droppings	TL 46016 54157	N/A	Float 6
Droppings	TL 46028 54150	N/A	Float 7
Droppings	TL 46052 54141	N/A	Float 8 Finish

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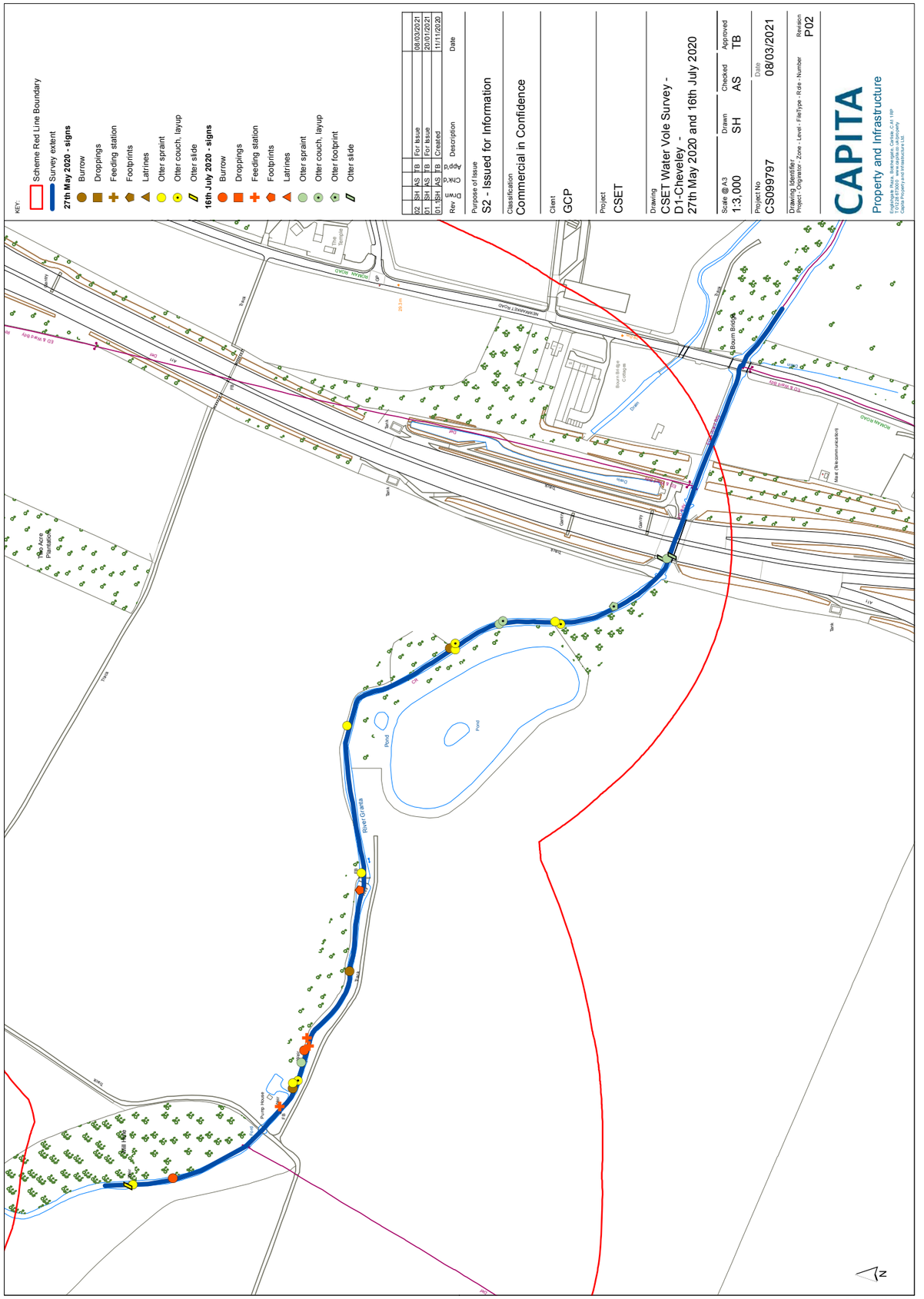
Appendix B – Water Vole Survey Plan D1 – River Granta, Cheveley Park, Babraham



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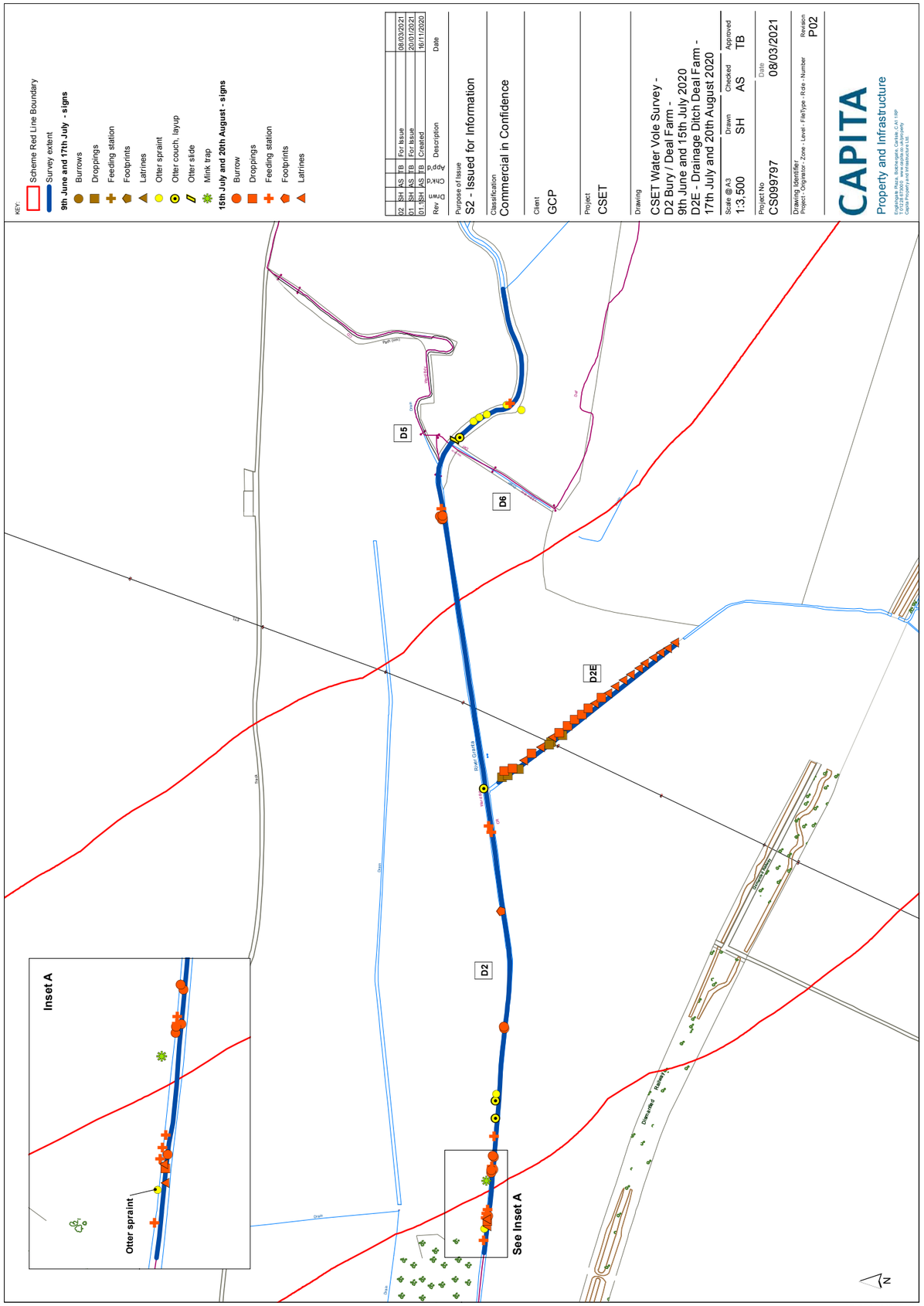
Appendix C – Water Vole Survey Plan D2 and D2E – River Granta, Stapleford and Drainage Ditch, Sawston.



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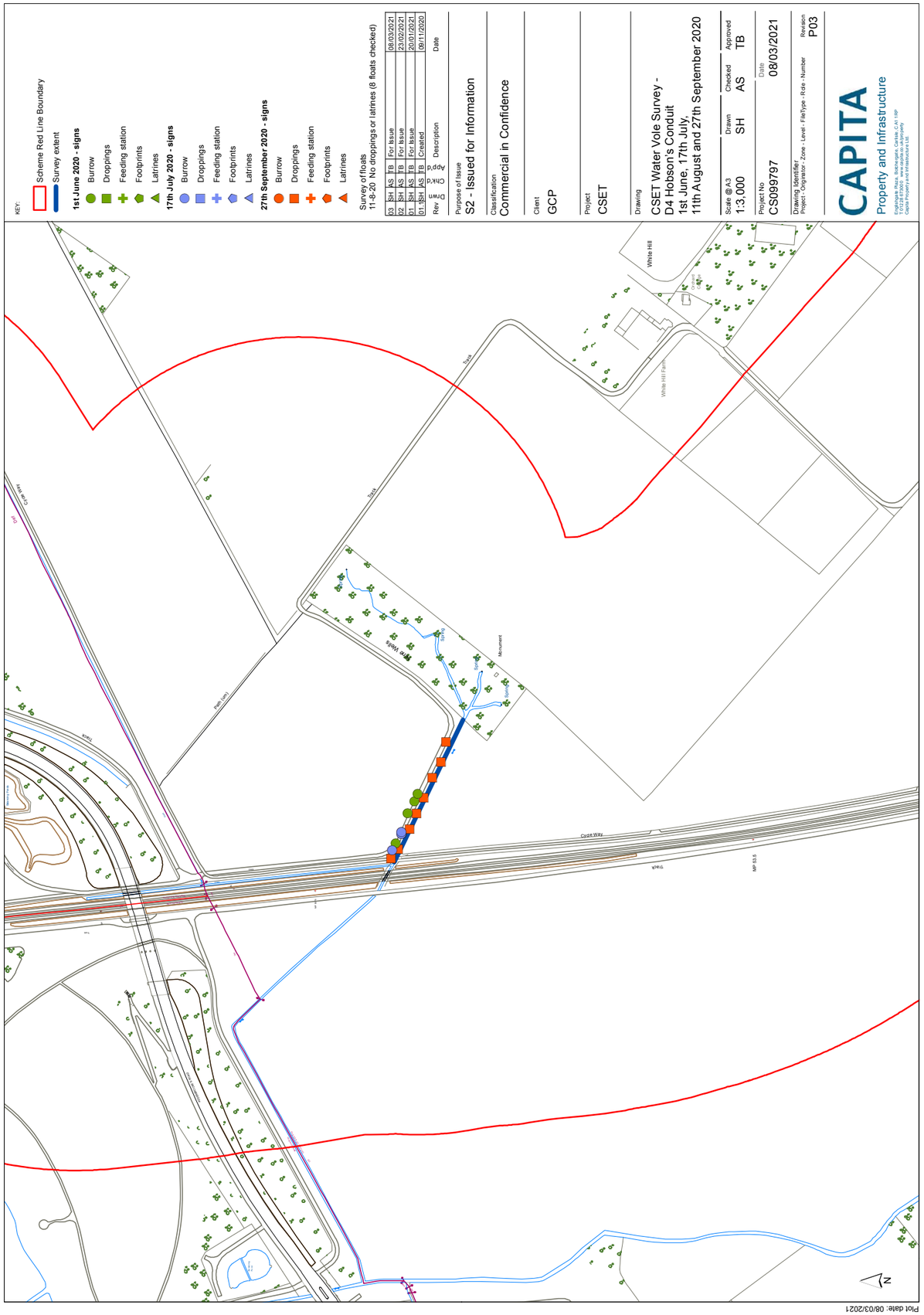
Appendix D – Water Vole Survey Plan D4 – Hobson's Conduit, Nine Wells.



Appendix E – Otter Records

Table 6: Incidental Records of Otter

Survey date	Watercourse	NGR	Description
27-5-20	D1- Babraham	TL51359 49687	Otter lay-up & fresh spraint
		TL 51839 49340	Otter spraint and obvious slides into water under A505 road bridge
		TL51774 49438	Potential rest site & spraint & well-used slide
		TL51776 49443	Spraint
		TL51755 49535	Otter lay-up, fresh spraint & feeding remains under large crack willow
		TL51681 49633	Fresh spraint on flat shelf area.
		TL51545 49626	Spraint on concrete crossing over river.
		TL51262 49831	Spraint north of ford
		TL51261 49831	Possible slide
16-7-20	D1 - Babraham	TL51375 49680	Spraint on concrete wall/ledges
		TL51774 49494	Otter lay-up/possible couch and fresh spraint
		TL51790 49390	Fresh otter footprint near A505 road bridge.
9/6/20	D2 - Sawston	TL48841 51202	Fresh spraint on fallen willow branch
		TL48865 51258	Old spraint on rock
		TL48883 51224	Old spraint on rocks
		TL48865 51246	Spraint on rocky ledge under mature field maple
		TL48863 51252	
		TL48844 51277	Possible otter slide and lay-up site under multi-stemmed sycamore tree. No other signs.

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Survey date	Watercourse	NGR	Description
9-6-20	D2 - Sawston	TL48474 51254	Possible lay-up site under large tree root. No other signs
		TL48474 51254	Lay-up site and slides on both sides of the river. Under large crack willow with overhanging branches over river.
		TL48146 51239	Lay-up site and old spraint under ivy-covered crack willow.
		TL48127 51242	Possible lay-up site. No other signs noted.

Appendix F – Photographs

Photograph 1. River Granta at Babraham D1 1-6-20

Photograph 2. River Granta at Babraham D1 1-6-20

Photograph 3. Water vole burrow D1 27-5-20

Photograph 4. Feeding station D1 16-7-20

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Photograph 5. River Granta D2 17-8-20

Photograph 6. River Granta D2 15-7-20

Photograph 4. Water vole burrow D2 15-7-20

Photograph 5. Feeding station D2 15-7-20

Photograph 6, Drainage Ditch D2E

Photograph 7. Drainage Ditch with marked floats D2E

Photograph 8. Float in situ D2E 20-8-20

Photograph 9. Float heavily used as a latrine D2E 14-10-20

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Photograph 10: D4 Hobson’s Conduit, Nine Wells

Photograph 11. D4 Hobson’s Conduit, Nine Wells

Photograph 12. Float in situ in D4

Photograph 13. Water vole droppings on float in D4 (courtesy J.Meed)

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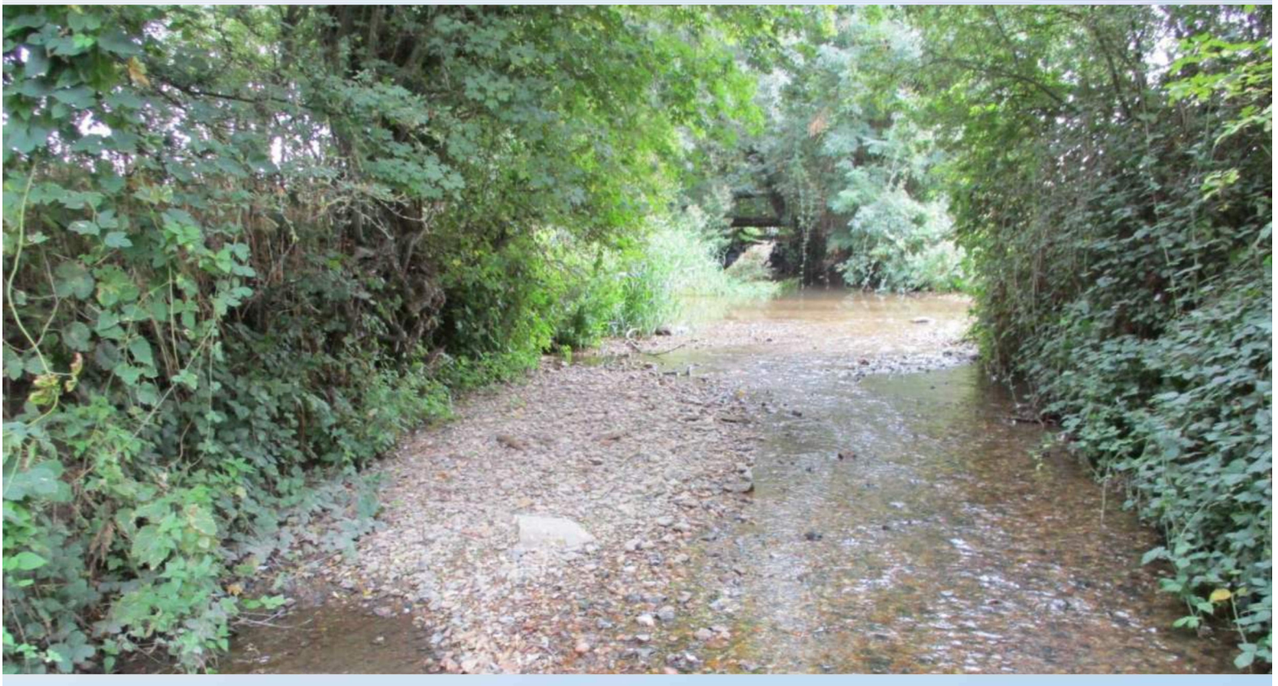
Greater Cambridgeshire Partnership

Cambridge South East Transport (CSET) Phase 2

Water Vole and Otter Survey Report



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Cambridge South East Transport (CSET) Phase 2

Water Vole and Otter Survey Report

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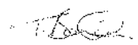
Signature			
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1 Summary

WSP Real Estate & Infrastructure's (WSP RE&I) Ecologists were commissioned by the Greater Cambridgeshire Partnership (GCP) in August 2022 to undertake water vole and otter surveys in relation to the development of the Cambridge South East Transport (CSET) Phase 2.

The surveys covered the watercourses which were surveyed in 2020 for water vole and otter to re-assess the potential of these habitats to support these species and to identify any evidence of current usage of these areas by water voles and otters.

The focus of the surveys was therefore the River Granta and Hobson's Conduit. Dense vegetation, health and safety concerns, land access permissions and other constraints meant that not all areas could be fully accessed for the survey. Many watercourses/ditches were also dry following a prolonged drought including ditch D2E which contained water and supported water voles in 2020.

Populations of water voles (at least low relative populations) are present in the surveyed sections of the River Granta and Hobson's Conduit. This is broadly consistent with the findings of the 2020 surveys, although clearly populations fluctuate and distributions shift between seasons and years.

The River Granta is well used by otter with various resting places (couches/lay-ups) recorded along the survey areas within the sheltered and undisturbed corridor. This is also consistent with the 2020 surveys carried out by WYG, although more signs of presence were recorded during the current 2022 surveys. Further resting and sheltering places may also be present in surrounding habitats such as dense scrub and woodland as well as along wider watercourse corridors, although signs of presence have not been confirmed in those areas surveyed.

Further surveys for water vole and otter in spring, potentially including survey of wider areas within the zone of influence would assist in providing further information to support a robust baseline and also inform the proposed scheme design including any mitigation.

Avoidance of impacts to the watercourse corridors and any water vole and otter resting and sheltering habitats would minimise the impacts of the scheme. This may include use of clear-span bridges where watercourse crossings are required (particularly the River Granta and Hobson's Conduit) to better maintain watercourse corridors including existing bankside habitats.

Mitigation licences will need to be considered if any wildlife offences are likely to occur as a result of the proposed scheme. These will need to include sufficient impact avoidance and mitigation measures to ensure no negative effects on water vole and otters occur to local populations.

2 Introduction

2.1 Background

WSP Real Estate & Infrastructure's (WSP RE&I) Ecologists were commissioned by the Greater Cambridgeshire Partnership (GCP) in August 2022 to undertake water vole and otter surveys in relation to the development of the Cambridge South East Transport (CSET) Phase 2.

The aim of the water vole and otter surveys is to summarise the results of the baseline surveys conducted in September 2022 to inform the design of the Scheme. These surveys are required to update surveys undertaken in 2020.

2.2 Project Description and Purpose of the Scheme

The Cambridge South East Transport (CSET) Project aims to create a vital link to ease congestion, offer sustainable travel choices, connect communities, and support growth in the in the South East of Cambridge. CSET will form part of the Cambridgeshire Autonomous Metro, providing high quality, frequent and affordable public transport.

CSET Phase 2 comprises a segregated public transport route from the A11 (near Babraham) to the Cambridge Biomedical Campus (CBC). This bus route would include new walking, cycling and equestrian links.

2.3 Legislation and Policy

Legislation

Wildlife & Countryside Act 1981 (as amended)

Water vole is listed under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and is afforded full protection under Section 9 of the Act, making it is an offence to:

- Intentionally capture, injure or kill a water vole
- Possess or control a living or dead water vole, or any part of a water vole
- Intentionally, or recklessly, damage, destroy, or obstruct access to any place that a water vole uses for shelter or protection, or disturb a water vole while it is occupying such a place and,
- Sell, offer for sale or advertise for sale any living or dead water vole.

Otter is also protected under the Wildlife and Countryside Act 1981 (as amended), where it is an offence to intentionally or recklessly:

- Disturb otters while they occupy a structure or place used for shelter or protection
- Obstruct access to a place of shelter or protection.

Conservation of Species & Habitats Regulations 2017 (as amended)

Otters are a European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2017 (as amended).

It is an offence to:

- Deliberately kill, injure, disturb or capture them
- Damage or destroy their breeding sites and resting places - even if otters are not present
- Possess, control or transport them (alive or dead).

In order to permit a development where the above offences are likely to be committed a European Protected Species Licence can be obtained from Natural England where appropriate mitigation is offered to avoid negative impacts to local otter populations.

Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of the NERC Act places a statutory duty on public bodies, such as local authorities, that "every public body must, in exercising its functions have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity".

Section 41 of the NERC Act requires the Secretary of State to draw up a list of Habitats and Species of Principal Importance which should be used to guide decision makers (which include local authorities) in implementing their duty under Section 40.

Water vole and otter are both listed as a Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

2.4 Planning Policy

National Planning Policy is set out by the National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2021).

Biodiversity net gains are referenced strongly in terms of developing local planning policy and decision-making for development applications. The environmental test of sustainable development requires planning policy and planning decisions to help to 'improve biodiversity' (paragraph 8c).

References to biodiversity net gain elsewhere in the new NPPF (such as paragraph 174d) support the delivery of biodiversity net gain through sustainable development. Net gain for biodiversity is far more prominent than in the previous NPPF and considers a holistic landscape approach to protect, and enhance biodiversity promoting conservation, restoration and enhancement of Priority Habitats (also listed as Habitats of Principal Importance) identified under the NERC Act 2006), ecological networks and the protection and recovery of Priority Species (also listed as Species of Principal Importance) identified under the NERC Act 2006). The NPPF includes requirements for planning authorities to identifying and pursuing opportunities for securing measurable net gains for biodiversity (paragraph 179b).

Protected sites and species are a material consideration in determining planning applications and therefore all information relating to protected sites and species must be submitted with planning submissions for determination of the whole application. The NPPF (paragraph 180) which promotes Local Planning Authorities to assess if significant harm would occur to biodiversity and decide accordingly.

2.5 Personnel and Quality Assurance

All ecologists employed by Capita adopt best practice working methods in undertaking surveys including the Chartered Institute of Ecology and Environmental Management's (CIEEM) code of professional and all fieldwork is carried out in accordance with current best practice guidelines and under the supervision of senior staff and appropriately licensed ecologists where applicable.

The water vole and otter surveys were undertaken by Andrea Sarkissian and Mark Johnson.

Andrea Sarkissian, MCIEEM Principal Ecologist has over nine years' experience in ecological consultancy. She has worked on a range of road, rail, housing and flood alleviation schemes. Andrea's field survey and reporting experience spans a range of receptors including habitats, bats, wintering and breeding birds, great crested newt, reptiles, otter and water vole surveys across a range of sites and habitats in England and Wales. Otter and water vole survey experience includes habitat assessment and presence/absence survey across Cheshire, Yorkshire, Cumbria and Cambridgeshire with mitigation work involving burrow location and destructive search under supervision of a licensed water vole expert. She has also completed various water vole and otter courses including ecology, survey and mitigation.

Mark Johnson is an Ecologist with five years' experience working within professional ecological consultancy. He is familiar with the majority of water vole and otter field signs and has previously assisted with undertaking water vole and otter surveys on CSET (previous surveys in 2020) along with other sites in England and Wales.

3 Methods

3.1 Survey and Report Objectives

The surveys and report were carried out to fulfil the following objectives:

1. To re-survey the watercourses which were surveyed in 2020 for water vole and otter.
2. To identify potential of the habitats within the site to support water vole and otter and to identify any evidence of current usage of these areas by water voles (e.g. burrows, feeding remains and latrines) and otters (e.g. spraints, feeding remains, resting areas).

3.2 Desk Study

Previous survey reports were reviewed as follows:

- Cambridge South East Transport Strategy (CSET) Factual Otter Report, WYG, v3 18.06.20, and
- Cambridgeshire South East Transport Strategy (CSET) Phase 2 Water Vole Survey Report, v2, March 2021.

A local ecological records search was also obtained from Cambridgeshire and Peterborough Environmental Records Centre (CPERC) on 6 October 2022 relating to protected and notable species and designated sites within a 5km radius of the proposed scheme, although only those within 2km were reviewed for this assessment.

3.3 Field Survey – General

The surveys involved the assessment of habitats to support water vole and otter, covering on the areas surveyed in 2020. This focuses on the River Granta (D1 and D2), an adjacent drainage ditch D2E and Hobson's Conduit, D4 and adjoining bankside habitats. These areas lie within the boundary on the survey extents draft plan provided by Atkins in September 2022 and at least 100m up and downstream, where accessible.

A number of ditches adjoining the watercourses in these areas (which were the focus of the survey, as above) were assessed for their potential to support water vole and otter; most being dry drainage ditches at the time of the survey. All watercourses (including dry ditches, which form the majority), ponds and terrestrial habitats within 200m or more of the red line boundary area were not assessed during this survey as this was not within the survey scope.

The areas which were surveyed (assessed for habitat suitability and/or searched for field signs) are detailed on the plans at Appendix A (Water Vole Survey Results Maps) and Appendix C (Otter Survey Results Maps).

3.4 Field Survey – Water Vole

The field survey involved an assessment of the habitat and potential to support water vole as well as a search for field signs. The field sign search, particularly for burrows, is not exhaustive as signs can easily be hidden by dense vegetation or be inaccessible for other reasons, therefore, greater weight should be given to habitat assessment with confirmation of presence from field signs, rather than presence of field signs alone. The habitat assessment followed the Water Vole Field Signs and Habitat Assessment guidance (Dean. 2021).

Field Signs

Field signs searched for included:

Latrine sites

The presence of the water vole can be determined from its droppings, which provide the most distinctive field sign. They are roughly 8-12mm long and 4-5mm wide, cylindrical with blunt ends. Their colour ranges from black, brown and green, depending on age, diet and water content. Most droppings are deposited on latrine sites, which can be found at favoured areas where the voles leave and enter the water, at discrete sites near to their burrows and are used to mark territorial boundaries. Breeding voles use regular latrine sites along water margins, and often consist of a flattened mass of old droppings (drumming sites) with fresh ones on top.

Feeding stations

Water voles' foraging remains and feeding stations are usually observed along the water's edge and at burrow entrances. Feeding remains consist of neat piles of chewed off lengths of vegetation. These grazing remains typically measure 8-10cm although can be larger, showing two large incisor marks. Grazing remains also double as food caches and are often accompanied by droppings.

Burrows

Water vole burrows have an approximate hole size of 4-8cm. The burrows can appear as a series of holes along the water's edge, some may open below the water line, whilst others can occur amongst the vegetation up to three metres from the toe of the bank. Burrows may also show evidence of a closely cropped grazed lawn, where a female water vole has nibbled the vegetation short within easy reach of the burrow.

Prints

Imprints from water voles show four digits from the fore foot and five digits in the hind foot. The imprinted digits form a star shape of splayed-out toes. Water vole tracks are very difficult to distinguish between tracks made from the brown rat, particularly young animals. Generally, water vole prints tend to be much smaller than rat prints, but it is important to note that they cannot always be used as reliable indicators in the absence of other water vole field signs.

Runways

These are low tunnels that are pushed through the vegetation and often lead to burrows or feeding stations.

Survey Methods

The surveys were undertaken in-channel, where possible, as this is the best method for recording burrows at the toe of the bank and feeding stations and latrines in stands of vegetation.

Additional Survey Methods

Due to very steep banks and deep silt in Hobson's Conduit D4 (the section within the field), this area was not considered safe to survey in-channel. In this instance it was agreed with the client that floats (pieces of wall insulation approximately 300mm by 200mm in size) secured with string and a cane attached to the bank or a cane through a hole in the float, would be placed in the channel equally spaced along the watercourse to monitor activity. Water voles readily use features such as these as latrine sites.

A total of nine floats were deployed along Hobson's Conduit at Nine Wells (D4) on 23 August 2022 as the following grid references: TL45957 54183, TL45969 54178 TL 45983 54173, TL45990 45168, TL45997 54165, TL46010 54160, TL46017 54157, TL46056 54141 and TL46056 54141. They were collected in on 11 October 2022.

While this is a deviation from the standard methodology, it is a very useful method for monitoring presence/likely absence from watercourses where it is not possible for health and safety reasons to enter the watercourse.

Evaluation Methods

The relative population size supported by each watercourse can be broadly assessed by the number of latrines. This can be used to support the assessment of impacts and mitigation design, although there are many factors affecting this (such as restricted views of potential latrine areas due to dense vegetation and use of artificial latrine, 'floats' which may artificially alter the number of latrine sites) and therefore, this only provides a broad assessment. The Water Vole Mitigation Handbook (Dean et al. 2016) sets out the following guidance on this, as follows:

First half of the survey season (mid-April to end of June):

- LOW – less than or equal to 2 latrines per 100m of bankside habitat (or none but with other confirmatory signs)
- MEDIUM – 3 to 9 latrines per 100m; and,
- HIGH - 10 or more latrines per 100m.

Second half of the survey season (July to September):

- LOW – less than or equal to 5 latrines per 100m (or none but with other confirmatory signs)
- MEDIUM – 6 to 19 latrines per 100m; and,
- HIGH – 20 or more latrines per 100m.

3.5 Field Survey – Otter

Otter surveys were undertaken to identify evidence of otter presence within the study area. Information sources such as Conserving Natura 2000 Rivers monitoring series were used (including Chanin, Monitoring the Otter *Lutra lutra*).

As otters have no fixed breeding season, surveys can be carried out at any time of year, although surveys are optimal when the vegetation and the water levels are both low as field signs are more visible (such as spring). Surveys were avoided during or immediately following heavy rainfall, as this can wash away or cover any field signs. As otters avoid disturbance and are largely nocturnal, surveys are carried out by searching for otter field signs. Surveys were undertaken from within the channels using chest waders or wellingtons and a ranging pole where safe and accessible.

Otters can range over large distances with territories covering tens of kilometres of waterway/hectares of water (Chanin. 2003). Females are also sometimes known to conceal their use of a den by decreasing sprainting and inhabiting secure and well-hidden sites, often moving cubs during their development (Liles. 2003). These can make the interpretation of field signs difficult and so 'potential' holts and other resting areas are recognised in this report.

Otter presence is determined by the following indicators:

- Faecal matter – spraint, anal jelly, tar spots
- Footprints
- Actual or potential resting sites. These can include a range of habitats such as underground 'holts' (e.g. beneath the roots of bank-side trees which provide shelter and protection) or above ground resting places sometimes referred to as 'couches' (amongst tall vegetation, depressions in vegetation or thickets of scrub) or temporary 'lay-ups'. Shallower features or ledges affording temporary rest areas are sometimes also referred to as 'hovers'.

- ‘Potential’ sites are those which offer potential habitat for otters but direct evidence has not thus far confirmed this (such as camera trap footage of otter presence).
- Slides or other well-used access paths to watercourses, and
- Feeding remains, e.g. crayfish carcasses.

3.6 Survey Limitations and Assumptions

General

Due to arrangements in starting the commission, water vole and otter surveys were not commenced until September 2022. Therefore, two surveys for water vole could not be undertaken in the optimal survey season and only one survey was undertaken in September. No early season/spring survey has therefore been undertaken in 2022 and observations have been limited to three days in September only. Further surveys will likely be required to be compliant with good practice survey guidelines.

Particularly as the weather conditions in 2022 included a prolonged drought which caused some watercourses to dry, water vole distributions may change across seasons and years. As detailed on the River Levels website, the River Granta water levels at Linton are as follows (as of 21 October 2022):

- The usual range of the River Granta at Linton is between 0.07m and 0.74m. It has been between these levels for 90% of the time since monitoring began.
- The typical recent level of the River Granta at Linton over the past 12 months has been between 0.02m and 0.14m. It has been between these levels for at least 152 days in the past year.

Furthermore, this survey scope involved re-survey of previously agreed areas which were surveyed in 2020 and therefore any wider watercourses and adjacent habitats within the zone of influence of any preferred route option including construction areas (once finalised) may not have been assessed and may require further survey and assessment for water vole and otter prior to finalisation of scheme design including mitigation.

Artificial latrine ‘float’ surveys were used for Hobson’s Conduit, D4, as in 2020, due to the health and safety constraints detailed in the Methods section. This method proved valuable in 2020 and is not deemed a significant constraint to this assessment.

Physical Access

A number of locations were unable to be surveyed for field signs due to the watercourses being culverted, deep sections around weirs, dense vegetation in the channel (particularly the western sections of the River Granta at D2 and within currently dry and densely vegetated ditches) and/or on the banks, deep layers of silt in the channel (e.g. D4), steep banks and/or other health and safety concerns. Therefore in many cases, close inspection and searches for field signs of otter and water vole was not possible. These signs and species may be present, but were not able to be recorded during these surveys.

It is not always possible to provide definitive assessments of a species’ presence/likely absence at a site due to constraints such as this and so in the absence of direct evidence, assessments are based on the presence of suitable habitat within/adjacent to a site.

Land Access

Land access restrictions were as follows where access could not be obtained:

- Mill Hole woodland (western end of the D1 survey area) and the northern river bank in this area along the River Granta D1 watercourse due to game bird rearing and concerns regarding Avian Influenza (bird flu)
- The reservoir/large pond (U022) and adjacent habitats south of/adjoining the River Granta D1 watercourse, due to game bird rearing and concerns regarding Avian Influenza (bird flu), and
- Eastern end of the River Granta at Stapleford D2 (east of W19).

The above survey constraints have been considered in the conclusions drawn in this report.

4 Results

4.1 Desk Study

Designated Sites

The statutory and non-statutory designated sites within 2km as shown at Appendix E.

Statutory Sites

One statutory designated site for nature conservation is present within approximately 1km of the central line of the proposed scheme. This is Nine Wells Local Nature Reserve (LNR) which the proposed scheme runs alongside. Watercourse reference D4 runs through this.

Nine Wells local nature reserve is a mix of woodland (including mature beech trees), scrub and water east of Trumpington. Its name refers to the number of chalk springs at the site, which are the source of the Hobson's Conduit waterway that flows through Cambridge. The site is used by many migrating birds such as reed warbler *Acrocephalus Scirpaceus*, redwing *Turdus Iliacus*, grey partridge *Perdix perdix*, yellowhammer *Emberiza citrinella*, skylark *Alauda arvensis* and linnet *Linaria cannabina*. Dragonflies and butterflies feed and take shelter in the open grassland areas. Mature spindle *Euonymus europaeus* scrub provides habitat for invertebrates including suitable conditions for the spindle ermine moth *Yponomeuta cagnagella*.

Cambridge City Council manage the woodland and scrub, creating small glades with plenty of regrowth to encourage a diversity of structure and keeping the chalk watercourse clear of shade by regularly cutting back overhanging vegetation. They monitor the water flow all year to ensure levels never reach critical levels, with the aim to eventually reintroduce lost rare invertebrates (Cambridge City Council. 2022).

Further designated sites within approximately 2km are all more than 1km from the proposed scheme, including:

- Cherry Hinton Pit Site of Special Scientific Interest (SSSI)
- Gog Magog Golf Course SSSI
- Sawston Hall Meadows SSSI
- Roman Road SSSI
- Dernford Fen SSSI
- Sheep's Green and Coe Fen LNR, and
- The Beechwoods LNR.

These sites are not designated due to presence of water vole or otter, however these and other local habitats may support these species.

Non-Statutory Sites

The following relevant non-statutory designated sites are present within 2km of the proposed scheme:

- The River Granta County Wildlife Site which the proposed scheme runs through this site in the two locations where the river is crossed, detailed as 'a *major river not grossly modified by pollution or canalisation. Additionally it supports concentrations of mature pollard willows*.' and
- Hobson's Brook City Wildlife Site which the proposed scheme runs adjacent, detailed as a '*Chalk stream together with adjacent semi-natural habitat that has not been grossly modified through canalisation and/or poor water quality*.'

There are a number of further local/non-statutory designated sites within 2km. The information provided regarding these sites does not include reference to water vole or otter, however these and other local habitats may support these species, as the species records below indicate.

Local Ecological Records

Otters

The record search returned 153 records of otter from within 5km of the scheme. The majority of the records relate to signs such as spraint. Some records relate to otters involved in road traffic accidents (RTAs) along the roads A1301, A505, and M11. Several live sightings and spraints have been recorded along the River Granta and Hobson's Brook, watercourses which lie within the proposed scheme area. None of the records relate to resting places such as holts.

Water voles

The data search returned 337 records of water vole from within 5km of the scheme. The records include water vole sightings and other field signs along ditches near Addenbrooke's Hospital. These are only accurate to 100m and could relate to Hobson's Conduit (D4) or other ditches. One record of burrows, feeding stations and latrines is detailed as Great Abington, which could relate to the River Granta (D1) or surrounding ditches.

Previous Ecology Reports

The below provides basic summaries of the findings from the surveys undertaken in 2020. For full details including survey dates, areas and constraints (including various access constraints), refer to the individual reports.

WYG Otter Survey Report 2021

The following broadly summarises the field survey findings of the 2021 otter surveys:

- River Granta (D1) – Spraints, slides and a potential couch were recorded along the eastern end of this section (east of the large reservoir/pond) along with two potential resting places noted in drainage pipes under the A11 bridge.
- River Granta (D2) - An otter spraint and couch were recorded at the confluence with D2E.

Capita Real Estate & Infrastructure Water Vole Survey Report 2021

The following broadly summarises the field survey findings of the 2021 water vole surveys:

- River Granta (D1) - Some evidence of water vole presence was recorded with burrows, feeding signs and potential footprints, although no droppings or latrines. Potentially low population.
- River Granta (D2) – Evidence of water vole with feeding stations, burrows and latrines. Few latrines overall, mostly located at the western end of the survey section. Potentially low population.
- Ditch D2E – Fresh water vole droppings noted on a number of the artificial latrine floats. All 24 floats had droppings on them by the end of September, heavily used. Potentially high population.
- Hobson's Conduit, Nine Wells (D4) – Burrows recorded, droppings on all eight floats by September, two as distinct latrines with several deposits noted. Potentially low/medium population.

4.2 Field Survey - Watercourse Descriptions and Suitability

The watercourses including networks of ditches which were surveyed are detailed the in the following sections. The watercourse numbering can be seen on the maps at Appendix A and C.

River Granta at Babraham (D1)

The section surveyed at Babraham is relatively straight with gentle meandering bends in places and a gravel and silt bed with occasional gravel bars in the channel. The sloping earth banks comprise varying degrees of terrestrial vegetation on the bank tops including tall ruderal, scrub and mature tree cover (with some large, old willows *Salix spp*) shading the channel and concealing the banks in areas along with other more open areas. In-channel and marginal vegetation occurs in varying degrees of abundance with species including reed canary grass *Phalaris arundinacea*, great willowherb *Epilobium hirsutum*, lesser water-parsnip *Berula erecta*, pendulous sedge *Carex pendula* and water mint *Mentha aquatica*.

At the western extent, the river flows west past an area of woodland (Mill Hole) being used for game bird rearing at the time of the survey. There are features associated with this stretch of the River Granta which include a ford and two weirs with deep pools which have formed downstream of these and a pond (U113) near the ford with a deep silt substrate.

East of this, the river passes areas of bankside scrub and tree cover adjacent arable fields and a farm track and then past a plantation woodland which separates the river from a large reservoir (U022). It then passes under the A11 and A505 road bridges via a wide concrete culvert, past grazed paddocks and broadleaved woodland and then under Newmarket Road via a low bridge and through more broadleaved woodland south-east of Newmarket Road, where the river is well shaded.

Photograph 1 - River Granta (western end of survey area near ford)

Photograph 2 - River Granta (further east along survey area near reservoir, more shaded)

Suitability for water vole

This section of the River Granta provides good quality habitat with sloping earth banks and in-channel and marginal vegetation in more open areas with some areas suitable but poor habitat due to the extent of shading from bankside trees, scrub and woodland and lack of in-channel and marginal vegetation for food and cover, particularly along the east of the survey area.

Suitability for otter

This section provides good quality habitat for foraging and sheltering otter with plenty of undisturbed bankside cover for resting in woodland, scrub and among mature tree roots.

River Granta and surrounding ditches – Stapleford

River Granta (D2)

This section of the River Granta at Stapleford includes a long stretch of largely straight channel flowing westwards varying from 2m to 4m in width. The sloping earth banks comprise varying degrees of grass, tall ruderal, scrub and mature tree cover (including willow *Salix* sp, ash *Fraxinus excelsior* and field maple *Acer campestre*) with frequent in-channel and marginal vegetation including common reed *Phragmites australis*, reed canary grass, pendulous sedge, great willowherb *Epilobium hirsutum*, watercress *Rorippa nasturtium-aquaticum*, meadowsweet *Filipendula ulmaria*, lesser water parsnip and occasional Himalayan balsam *Impatiens glandulifera*. This in channel vegetation (particularly common reed) becomes very dense towards the western end of the survey area; this vegetation density likely having increased due to the prolonged dry weather experienced in 2022.

Photograph 3 – River Granta D2 (western part of survey area)

Photograph 4 - River Granta D2 (eastern part of survey area)

Ditch D2E and surrounding ditches

Three ditches feed into the River Granta in the survey area, two were dry (W19 and W20, formerly referred to as D6 and D5, respectively), colonised by mature trees and often dense scrub or short sections of hedgerow and the other, a drainage ditch (D2E) which contained water during the previous surveys in 2020 was dry at the time of this 2022 survey, likely due to prolonged drought.

Ditch D2E is heavily vegetated in the dry channel, largely filled with common reed and occasional lesser water parsnip, great willowherb and meadowsweet with scrub and occasional trees along the banks. The ditch has steep, wide banks with a narrow channel approximately 1m wide and a silty bed. Margins of rough grassland buffer the ditch from adjacent arable fields either side.

The ditch W18 to the east of D2E alongside a roughly rectangular area of woodland is dry and heavily shaded by adjacent woodland with no aquatic vegetation present. The ditch W04 which runs south from D2E (following a culverted section for farm access) is also dry and shaded on the east side by an overgrown hedgerow. Reedmace *Typha latifolia* and common reed are abundant in the channel.

Further south, the ditch splits with a more open channel between arable fields to the west (W17), again dry, with occasional young scrub on the banks and abundant vegetation in the channel including common reed and meadowsweet. The eastern leg of this split (W16) is a dry ditch with abundant common reed, heavily shaded on the east side by mature woodland, with a wide grassed margin to the west.

The drainage ditches to the north of the River Granta (D2) which run parallel (W06) and perpendicular (W03) to it were also dry with sloping earth banks and varying degrees of scrub and tall ruderal on the banks and occasionally in the channel, but also with reedmace, reed canary grass, common reed and meadowsweet in the channel, indicating they may occasionally retain some water (likely in winter/spring).

Photograph 5 - Ditch D2E (dry during September 2022 survey)

Photograph 6 - Ditch W06 running parallel/north of River Granta (D2) - view east from western end

Photograph 7 – Ditch W04, south of D2E

Photograph 8 - Ditch W17 south of D2E

Suitability for water vole

Water levels in the River Granta (D2) provide one of the most consistent sources of water in this survey area, as the previously wet ditch D2E had dried during the 2022 drought. The river provides generally good/optimal water vole habitat with abundant in-channel, marginal and bankside herbaceous vegetation, soft sloping earth banks for burrow creation and a consistent slow flow of water with only some areas of bankside shading from scattered mature trees.

Ditch D2E and sections south of this also provide good quality habitat with sloping earth banks, vegetation and minimal shading, however these are more prone to drying, with tall in channel vegetation becoming abundant. In consistently dry years, these ditches may provide suitable but poor-quality habitat which water vole may use opportunistically. Similarly, the ditches north of the River Granta appear to dry regularly but could support water vole opportunistically, particularly if they occasionally hold water and if populations spread from the River Granta.

The more heavily shaded dry ditches along W18, W19 and W20 are unlikely to consistently support water or aquatic vegetation and are unlikely to provide suitable habitat for water vole, but again in wetter years and months if populations expand from the River Granta, water voles could be present opportunistically.

Suitability for otter

The River Granta provides an undisturbed and sheltered corridor for foraging, commuting and sheltering otter with feeding opportunities including crayfish. The river and surrounding ditch network provide a range of sheltering amongst mature trees, scrub and woodland.

Hobson's Conduit, Nine Wells D4 and surrounding ditches

Hobson's Conduit is a flowing chalk stream arising from springs in Nine Wells Local Nature Reserve. The stream (D4) flows through woodland at Nine Wells with sloping rocky earth banks and varying degrees of shading from the mature tree canopy and scrub above. Some areas contain aquatic vegetation including watercress and the stream bed is comprised of silt and stone. A steep sided, narrow ditch (W27) runs along the north-western edge of the woodland which was dry and recently cut at the time of the survey.

This stream then flows west through arable land before being culverted under the railway line (W23). The surveyed section east of the railway line is a steep sided silt and gravel bed channel bordered by an overgrown hedgerow along the southern side and tall ruderal and rough grassland along the northern side. The water level was shallow (~10cm) at the time of the survey with a slow flow. Common reed and willowherb *Epilobium* sp. are frequent along the channel along with starwort *Callitriche* sp and watercress.

A ditch runs along the east of the railway line (W07) within fencing and behind scrub; this appears to be dry, shallow and beginning to scrub over further north where visible under the road bridge. Ditch W02 runs east of the railway line along a cycle path which was dry with dense scrub in areas and occasional reed canary grass in the channel; it may occasionally hold water.

A ditch (W22) runs along Granham's Road (south of Nine Wells) and around the east side of a strip of rectangular semi-mature plantation woodland (D5A) and connects to Hobson's Brook west of the railway line. The ditches comprise steep earth banks and a channel which was dry at the time of the survey. The section east of the woodland (D5A) comprised tall ruderal and scrub banks with abundant common reed in the channel with the roadside section (W22) containing predominantly grass, willowherb, nettle *Urtica dioica* and dock *Rumex* sp in the channel, which had been recently strimmed.

Photograph 9 – Hobson's Conduit within Nine Wells woodland (D4)

Photograph 10 - D4 (view south-east from near railway line)

Photograph 11 - Ditch east of railway line (W02)

Photograph 12 - Ditch along Granham's Road (W22)

Suitability for water vole

Hobson's Conduit at D4 provides good/optimal habitat for water voles with abundant marginal and bankside vegetation, sloping earth banks and only scattered shading on one side. East of this, within Nine Wells woodland, the shading increases significantly, and the bank substrate is more sloping and rocky, however this section still provides suitable but poor quality habitat for water voles.

The small, steep ditch which runs along the northern edge of Nine Wells woodland (W27), as well as the ditch along Granham's Road (W22 & D5A), the railway line (W07) and east of the railway line (W02) which are currently dry are unlikely to support water vole in their current state. In some years and months, these may hold some water and populations of water vole in Hobson's Brook/Hobson's Conduit (D4) could expand into some of these areas or use them opportunistically.

Suitability for otter

Hobson's Conduit provides some commuting and potentially foraging opportunities for otter. The watercourse margins and Nine Wells woodland could also support resting and sheltering otter, although these areas are highly disturbed by dog walkers and cyclists in this area and are regularly managed by the local council as detailed in Section 4.1.

4.3 Field Survey – Field Signs Survey Results

The dates of the surveys and weather conditions during the surveys are shown in Table 1 below.

Table 4-1 - Date and Weather Conditions

Survey dates	Watercourse reference	Weather Conditions
20 September 2022	River Granta D1	Dry, no rain in previous days, 10°C to 18°C, good visibility
21 September 2022	River Granta D2 and surrounding ditches	Dry, no rain in previous days, 10°C to 21°C, good visibility
22 September 2022	Hobson's Conduit D4 (Nine Wells) and surrounding ditches	Dry, no rain in previous days, 12°C to 20°C, good visibility

Water Vole Results

The results are mapped at Appendix A with survey results tables presented in Appendix B. The following is a summary of findings for each watercourse surveyed in September.

Overall, water vole activity has been recorded along the River Granta and Hobson's Conduit. Further details are as follows.

River Granta D1

Water voles are present in this section of the River Granta. Two latrines towards the western end of the survey area confirmed presence along with potential water vole burrows, footprints and feeding remains recorded along the majority of the survey area, although latrine evidence was reduced further east. The population is estimated to be at least low in this area.

River Granta D2

Water voles are present in this section of the River Granta. Water vole latrines were recorded along with potential water vole burrows, footprints and feeding remains along much of the survey area where view of the banks was possible (some areas were very dense). The population is estimated to be at least low in this area.

Drainage Ditch D2E

The drainage ditch D2E was dry and densely vegetated with steep banks and so close inspection was not possible. This area has supported water vole previously, as noted in the 2020 surveys, but signs were not able to be identified this year. Water voles may still be present in this area.

Other ditches around D2

Water voles were not confirmed as present in any other ditches surveyed in this area, during these surveys.

Hobson's Conduit, Nine Wells D4

Hobson's Conduit D4 was confirmed as supporting water vole during surveys in 2020 and incidental observations of water voles in 2022 here confirm they are still present. Burrows are still visible amongst dense vegetation in the channel (not entered due to steep banks and deep silt). However, the artificial latrines were not well used this year, with no confirmed droppings on them but a (likely) mink scat present.

One area of water vole droppings was recorded within the shallow channel in Nine Wells woodland, amongst signs of rats including droppings, plus a number of relatively large burrows which are likely also attributable to rats. The watercourse also continues under the railway line to the west and it is likely that water voles will also be present in this section.

This area supports at least a low population of water voles.

Other ditches around Hobson's Conduit

Water voles were not confirmed as present in any other ditches surveyed in this area, during these surveys.

Photograph 13 - Water vole latrine (River Granta D1)

Otter Results

The results are mapped at Appendix C with survey results tables presented in Appendix D. The following is a summary of findings for each watercourse surveyed in September.

Overall, otter activity has been recorded along the River Granta. Further details are as follows.

River Granta D1 and D2

Otters are present foraging and resting/sheltering along both surveyed sections of the River Granta watercourse corridor, with a number of spraints and feeding remains recorded along with resting places including lay-ups under mature tree roots on the banks, particularly along the D2 section which also had more recent signs in general (fresher spraints). The potential artificial resting places in drainage pipes noted in the 2020 WYG report under the A11 bridge were checked, however these appeared small to support otter, with four pipes noted, each at around 15cm in diameter. No holts have thus far been identified within the surveyed areas.

Other watercourses

Field sign evidence of otter has not been recorded along other watercourses; however it is likely they may occasionally at least commute along some, with many areas of bankside scrub and woodland providing suitable habitat for sheltering. Field signs would also likely be difficult to locate amongst the dense vegetation associated with most of these areas, however an absence of signs does not confirm an absence of otters.

Photograph 14 – Otter resting place on banks of River Granta (D2)

5 Interpretation and Advice

5.1 Water vole

Interpretation

Populations of water voles (at least low relative populations) are present in the surveyed sections of the River Granta and Hobson's Conduit. This is broadly consistent with the findings of the 2020 surveys, although clearly populations fluctuate and distributions shift between seasons and years (as they do naturally); for example with a high number of latrines in Hobson's Conduit D4 in 2020, with none this year. The very shallow water levels in D4 (Nine Wells) during these surveys following the prolonged drought and potential predation risks from mink could have altered water vole behaviour, resulting in them leaving fewer visible signs of presence.

Similarly, relatively few latrines were recorded along the River Granta D1 section, which could in part be due to lack of cover afforded by this more shaded section of the river, combined with potential predation by mink. Latrines were more frequent in the River Granta D2 section (and more so than in 2020), along a more consistently vegetated channel. Water levels in the River Granta were relatively low although deeper pools were still present in sections, thereby providing one of the only consistent sources of water in the local area.

The surrounding networks of ditches and ponds around the River Granta and Hobson's Conduit could also provide some habitat for water vole to use opportunistically, particularly those which hold water in spring or in wetter years. For example, D2E which was well used in 2020, but had dried and become more densely vegetated this year.

The density of vegetation obscuring relatively large sections of bank (and other constraints) across the survey areas may also have obscured the location of further signs and, along with only a single late season survey carried out, caution should be adopted for any estimates of populations density and distributions.

Advice

Further surveys in spring would provide a better understanding of the populations and distributions and inform the scheme design and mitigation, including survey of wider watercourses and waterbodies within the zone of influence of the scheme. Surveys of wider areas to determine habitat suitability and relative density of populations may also be required if displacement of water voles from existing habitats is being considered for the proposed scheme.

Once any further surveys have been completed, mitigation will need to be designed to avoid impacts on water vole including foraging and sheltering habitats along watercourses. This may include avoidance of impacts to any sheltering areas and use of clear span bridges to better maintain watercourse corridors including existing bankside habitats.

If any offences (as detailed under Legislation) are likely to occur as a result of the proposed scheme, the works will need to be completed under a licence (Class Licence or Site-Specific Licence), which will need to include sufficient impact avoidance and mitigation measures to ensure no negative effects on water voles or local water vole populations.

5.2 Otter

Interpretation

The River Granta is well used by otter with various resting places (couches/lay-ups) recorded along the survey areas within the sheltered and undisturbed corridor. This is also consistent with the 2020 surveys by WYG, although more signs of presence were recorded during these surveys. Many appear to be well used although trail camera surveys would confirm this.

Further resting and sheltering places may also be present in surrounding habitats such as dense scrub and woodland as well as along wider watercourse corridors, although signs of presence have not been confirmed in those areas surveyed. Many of these wider habitats such as Hobson's Conduit (D4) provide some foraging and sheltering opportunities and many provide at least potential commuting habitat.

Advice

Further surveys would provide a better understanding of the populations and distributions and inform the scheme design and mitigation, including survey of wider watercourses, terrestrial habitat and waterbodies within the zone of influence of the scheme.

Trail cameras may also be useful if requiring further detail regarding use of certain areas or features by otters. These should be in place for sufficient periods of time to provide confidence in the result.

Once any further surveys have been completed, mitigation will need to be designed to avoid impacts on otters including on commuting, foraging and sheltering habitat. This may include avoidance of impacts to any resting places and use of clear span bridges to better maintain watercourse corridors including existing bankside habitats.

If any offences (as detailed under Legislation) are likely to occur as a result of the proposed scheme, a European Protected Species Mitigation Licence from Natural England will be required which will need to include sufficient impact avoidance and mitigation measures to ensure no negative effects on otters or local otter populations.

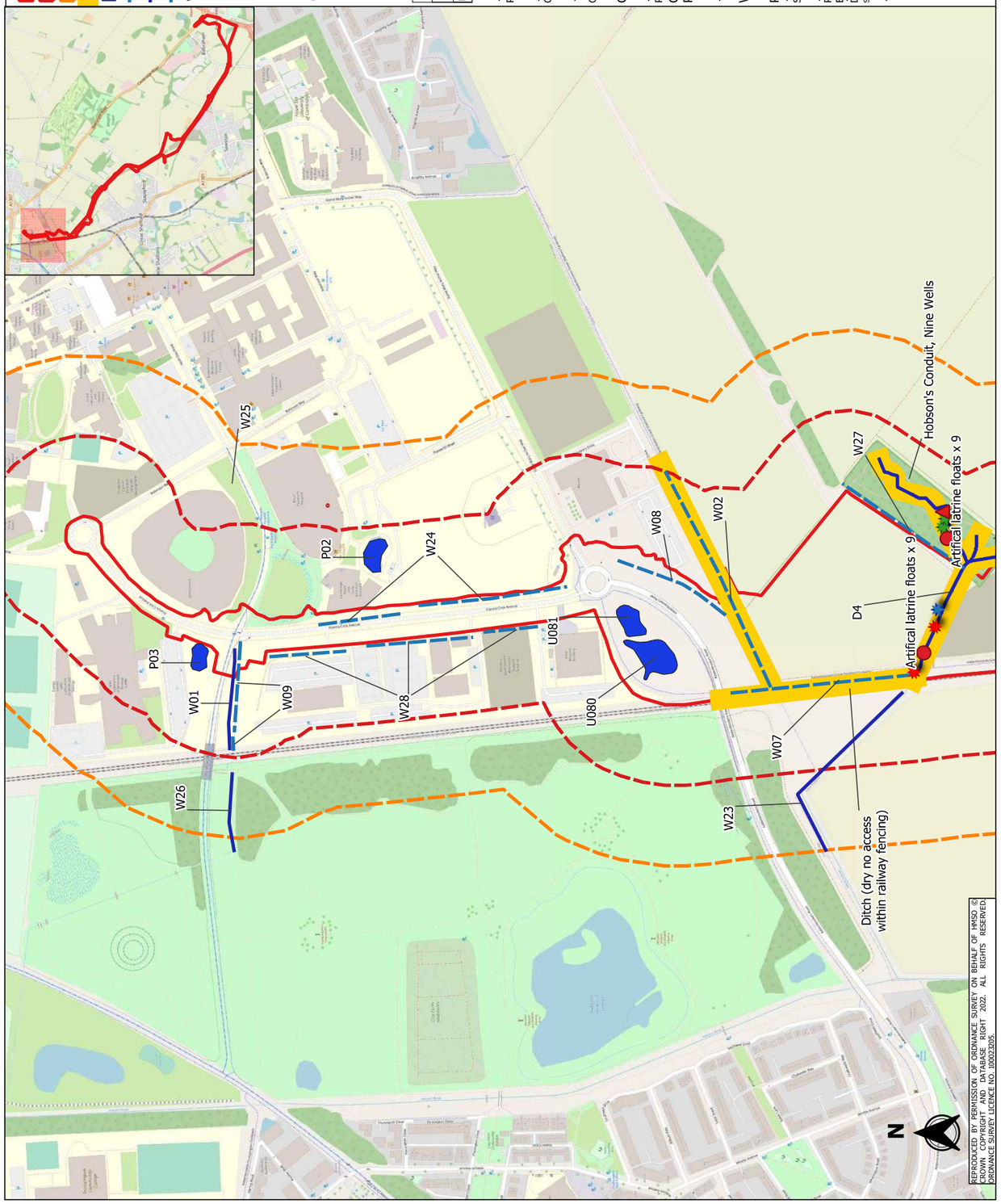
6 References

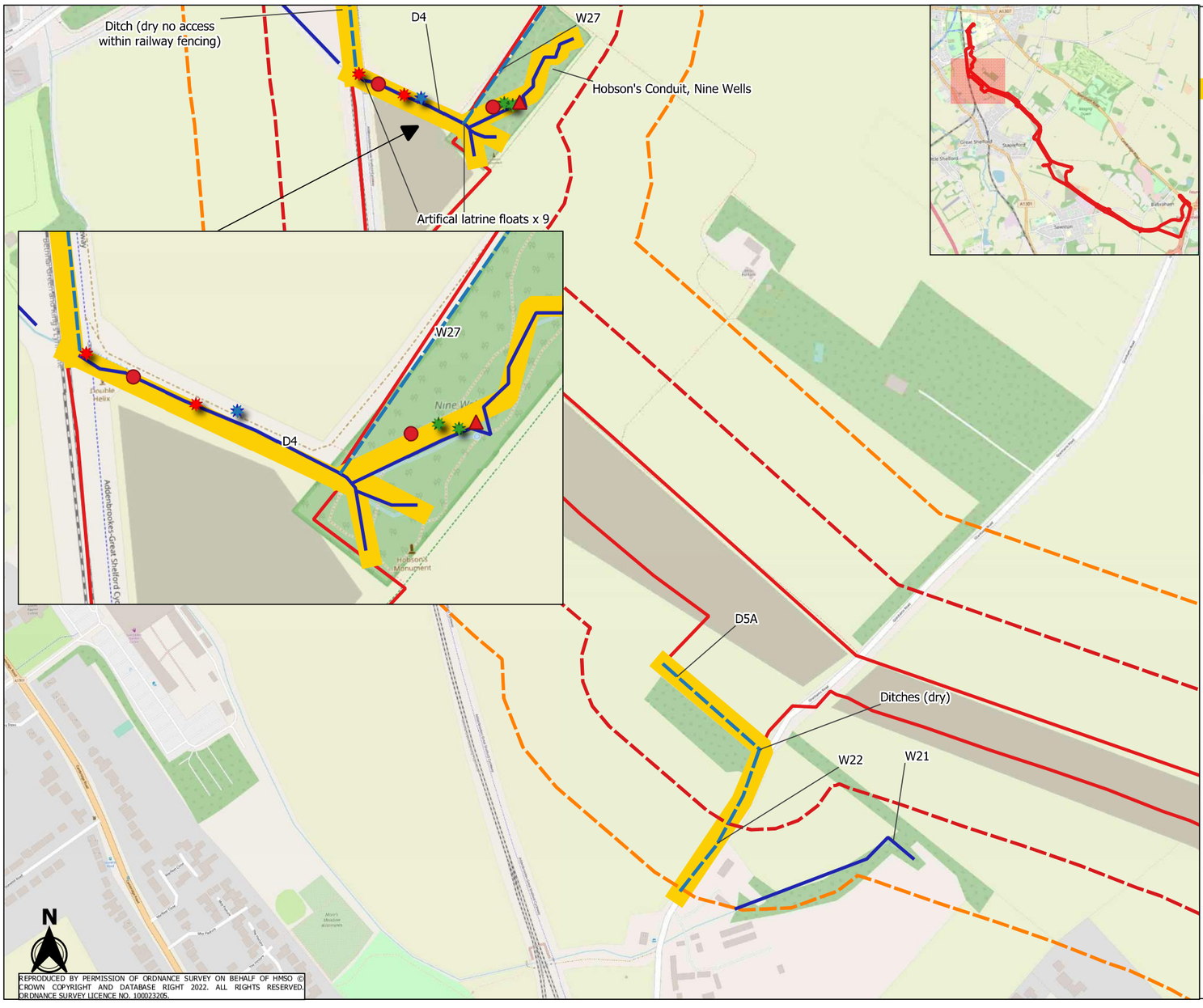
- Chanin, P. (2003). *Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology Series No. 10*. Peterborough: English Nature.
- Chanin, P. (2003). *Monitoring the Otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10*. Peterborough: English Nature
- Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). *The Water Vole Mitigation Handbook* (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.
- Dean, M. (2021) *Water Vole Field Signs and Habitat Assessment – A Practical Guide to Water Vole Surveys*.
- Liles, G. (2003). *Otter Breeding Sites. Conservation and Management. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5*. Peterborough: English Nature.
- Magic interactive map, Natural England, available at https://magic.defra.gov.uk/home.htm, accessed Nov 2022.
- Ministry of Housing, Communities and Local Government. (2021, July). National Planning Policy Framework.
- Nine Wells Local Nature Reserve, Cambridge City Council, available at https://www.cambridge.gov.uk/nine-wells-local-nature-reserve, accessed Nov 2022.
- River Levels (2022) Available: https://riverlevels.uk/river-granta-linton#.X6Lg-Fj7S8E
- Strachan R, Moorhouse, T. and Gelling, M (2011) Water Vole Conservation Handbook 3rd Edition. Wildlife Conservation Research Unit, Oxford.

Appendix A

Water Vole Survey Results Maps

Public





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Red line boundary on 26.09.22
100m buffer
200m buffer
Survey area 2022
Ponds
Dry ditch
Watercourse
Wet ditch

Water vole field signs 2022

Burrow
Feeding remains
Footprints
Latrine
Live sighting

Other field signs 2022

Mink scat
Rat droppings

Rev	Drwn	Chkd	Appd	Date
P01.1	TR	AS	TB	15/11/2022

Purpose of Issue
S2 - Issued for Information

Classification
Commercial in Confidence

Client
Greater Cambridgeshire Partnership

Project
Cambridge South East Transport (CSET) Phase 2

Drawing
Water Vole Survey Results 2022

Page 2 of 8

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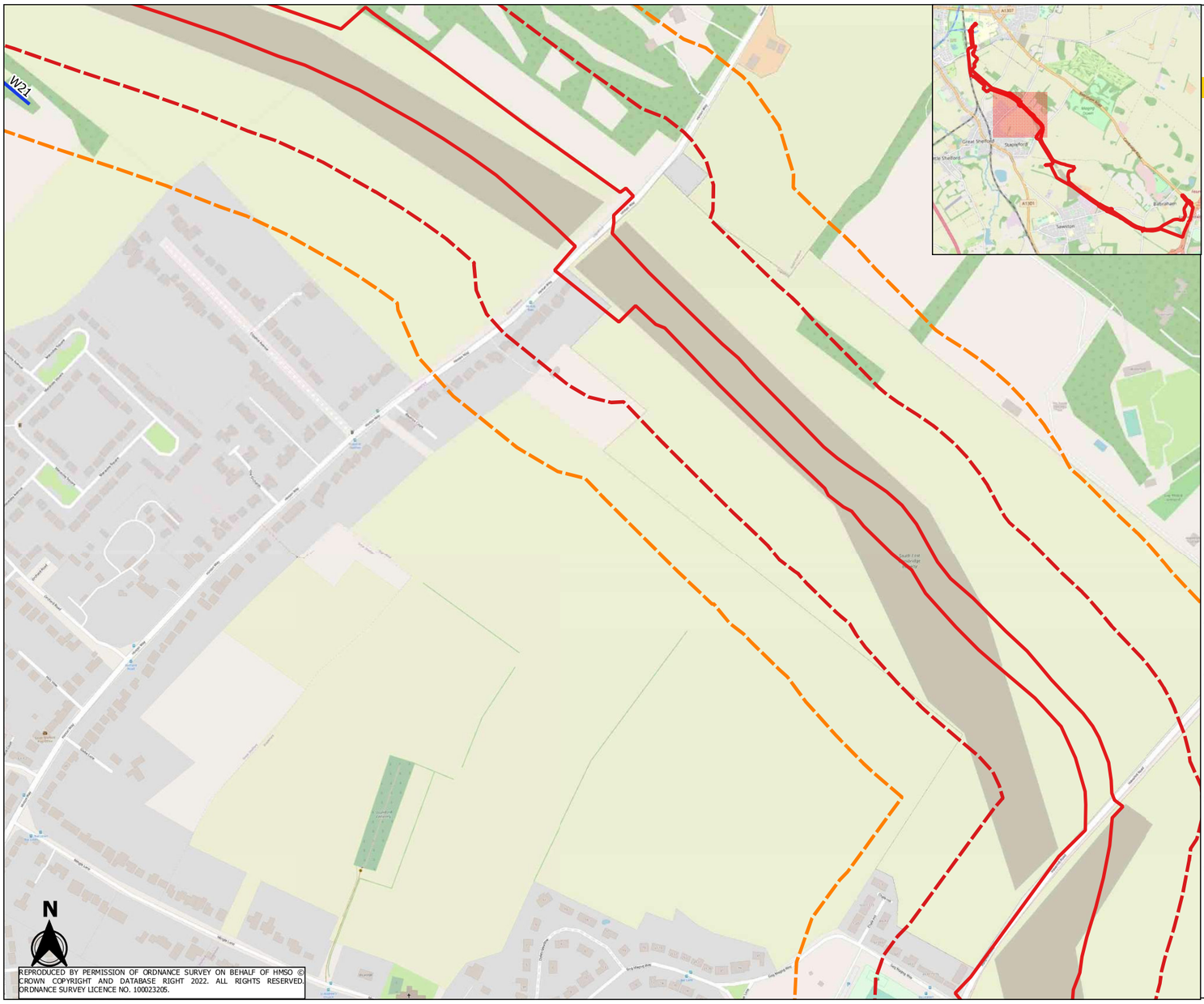

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Water vole field signs 2022

Burrow
Feeding remains
Footprints
Latrine
Live sighting

Other field signs 2022

Mink footprints
Mink scat
Rat droppings

Rev	Drwn	Chkd	Appd	Date
P01.1	TR	AS	TB	15/11/2022

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Water Vole Survey Results 2022

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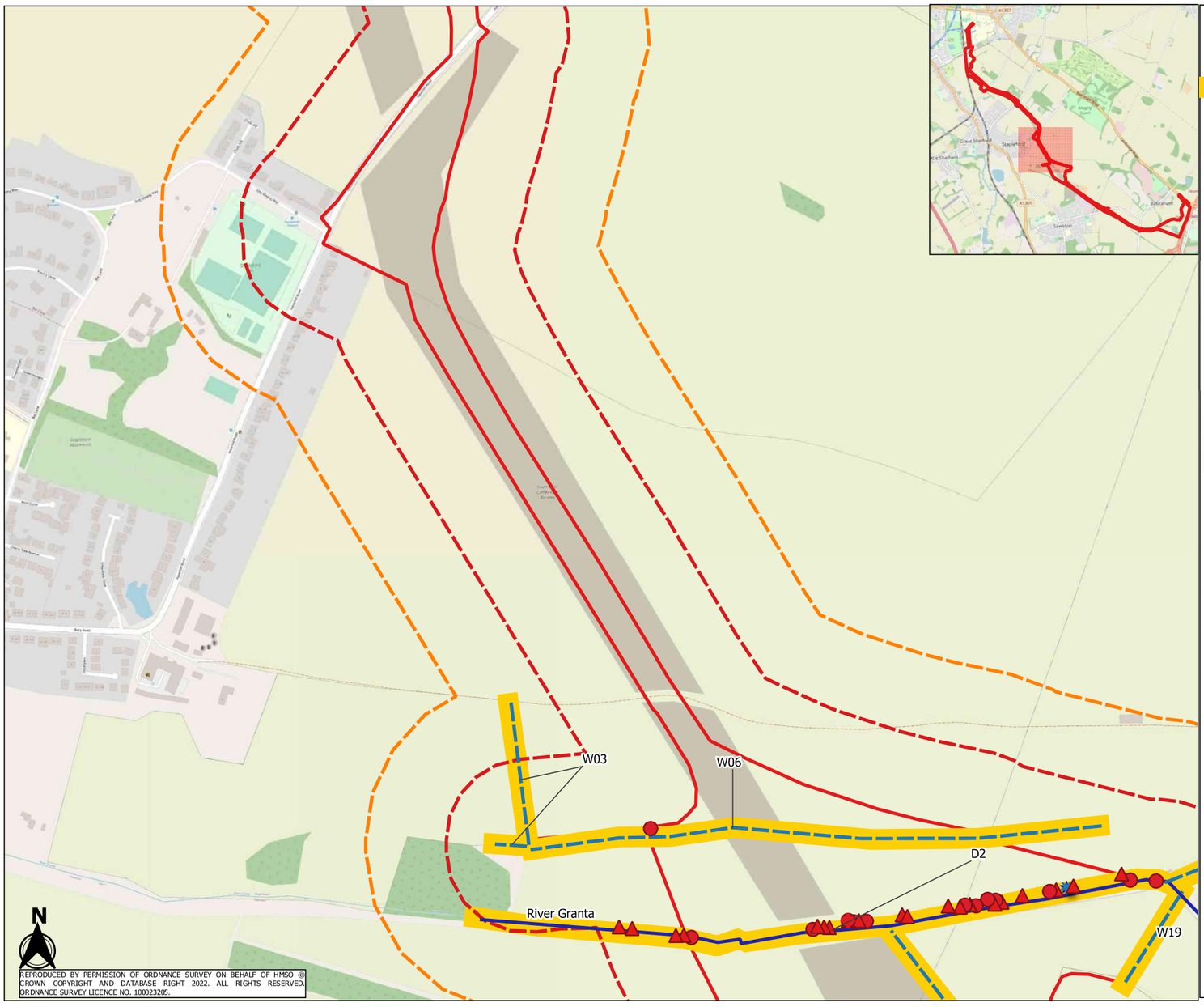

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Watercourse
Wet ditch

Water voles field signs 2022

Burrow
Feeding remains
Footprints
Latrine
Live sighting

Other field signs 2022

Mink footprints
Mink scat
Rat droppings

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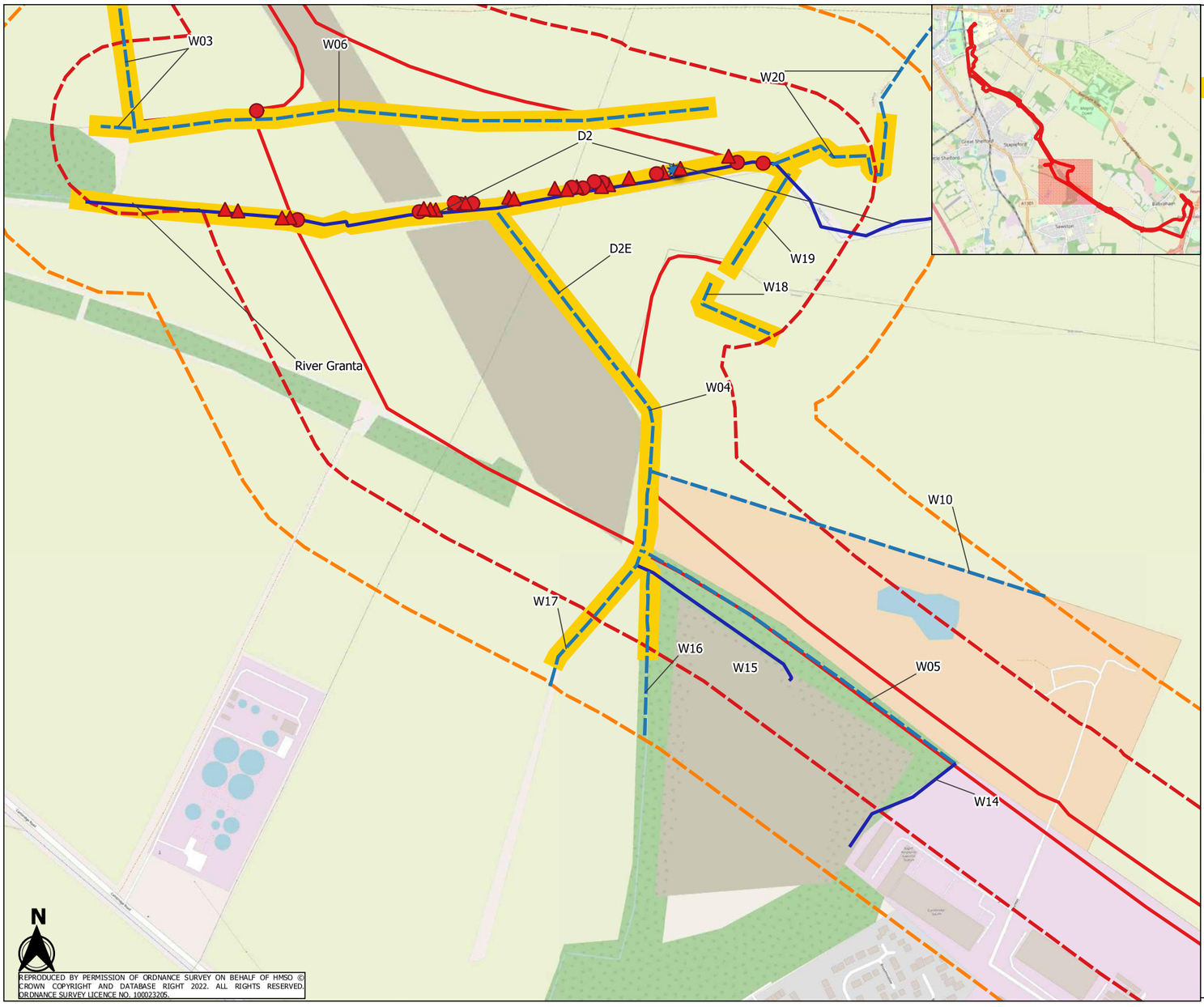

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Mink scat
Rat droppings

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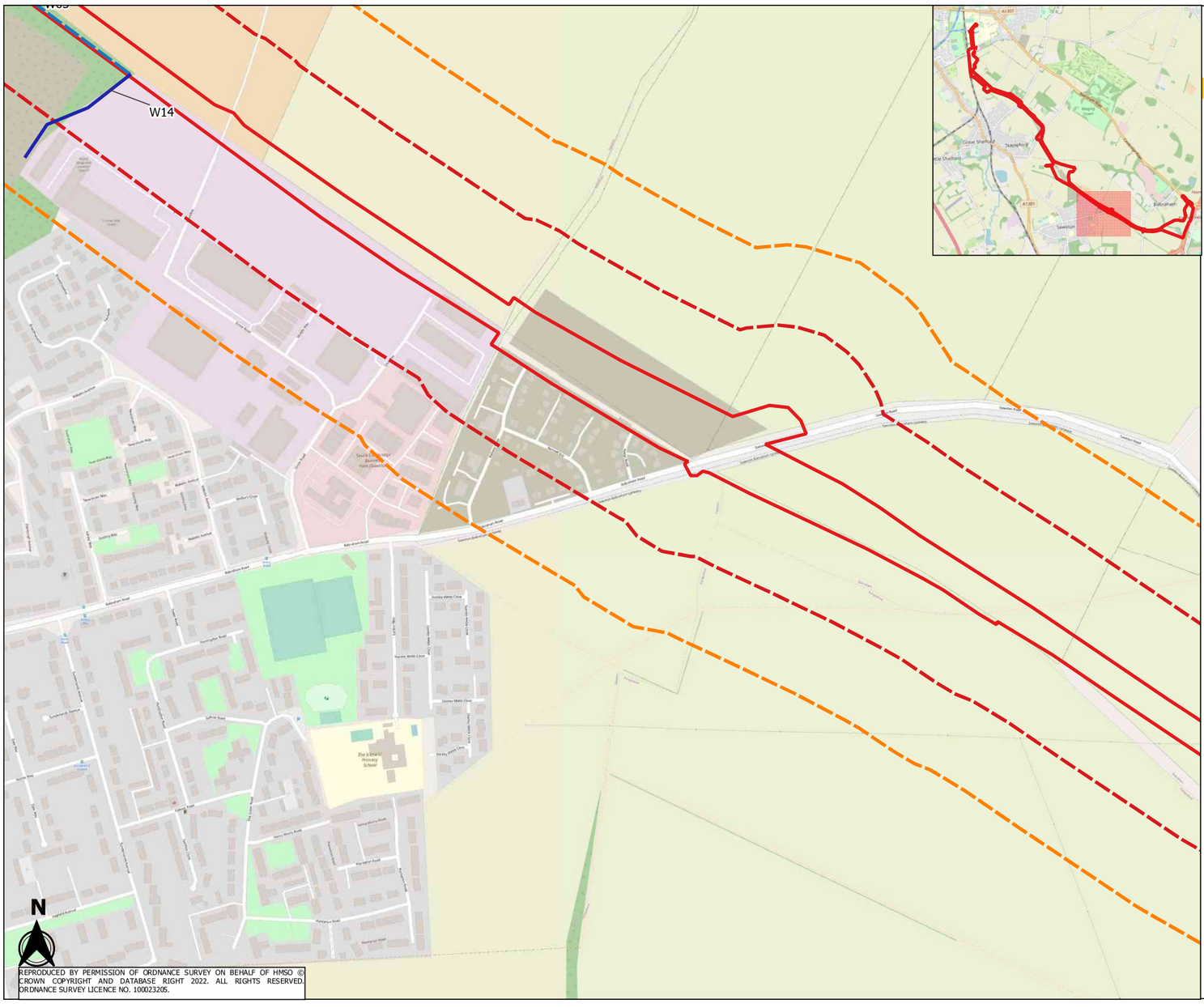

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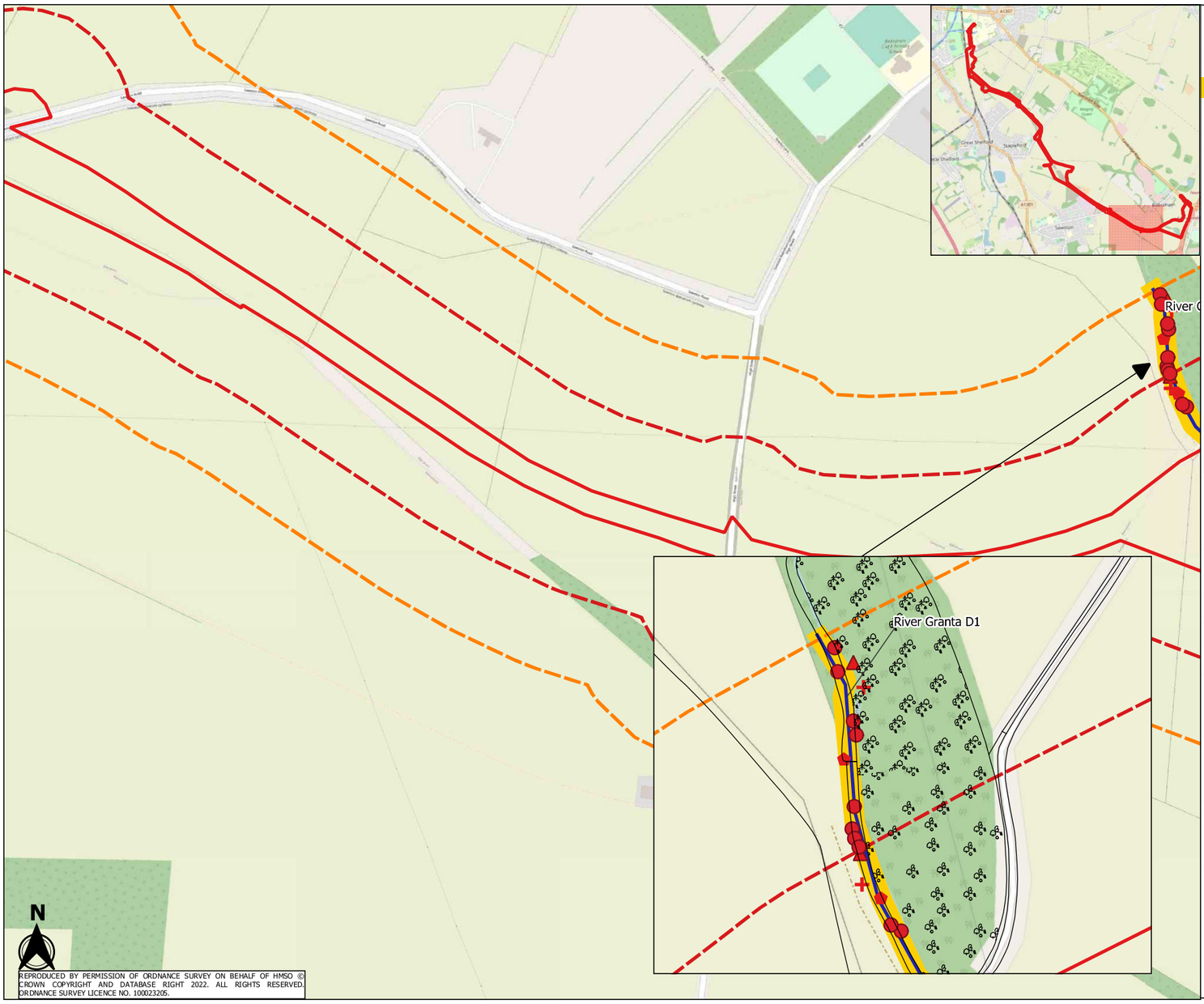

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Project
Cambridge South East Transport (CSET) Phase 2

Drawing
Water Vole Survey Results 2022

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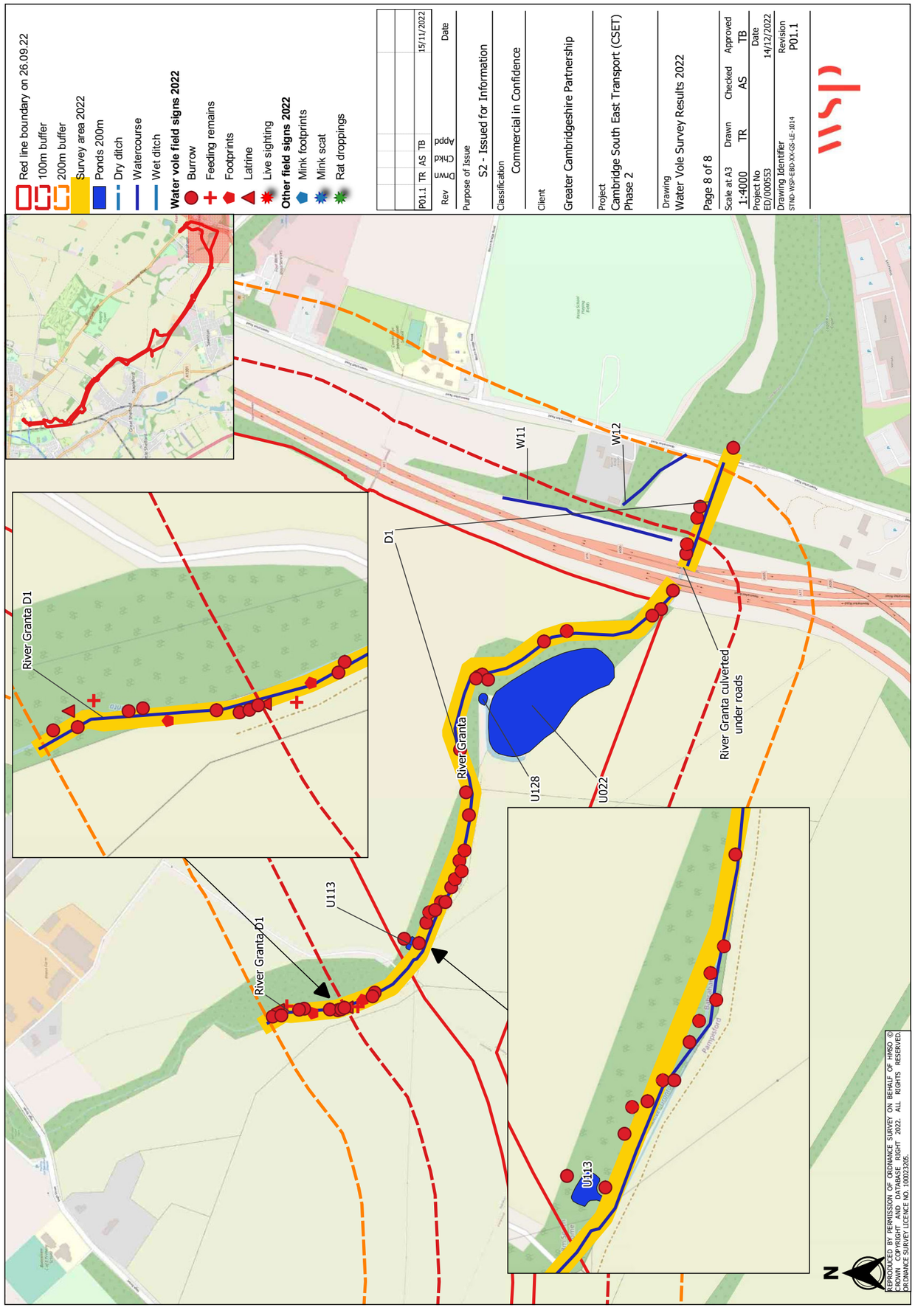


Appendix B

Water Vole Survey Results Tables

Public

Italics = confirmed evidence of water vole presence

Table B-1 – River Granta D1 – Water Vole Field Signs

Water vole relevant field sign	NGR[1]	Bank[2]	Comments
Burrow	TL 51287 49749	RB	Burrow below undercut bank, potential water vole (WV) burrow
Burrow	TL 51263 49799	RB	Potential WV
Burrow	TL 51264 49810	RB	Amongst nettles - soft earth bank
Footprints	TL 51259 49833	LB	Potential WV
Burrows	TL 51265 49845	RB	Series of burrows, 3+ potential WV
Burrows	TL 51266 49845	RB	3 potential WV burrows in toe of earth bank
Feeding remains & burrow	TL 51259 49882	RB	Potential WV amongst reed canary grass stand. Nibbled stems.
Feeding remains & latrine	*TL 51259 49882*	*RB*	*Feeding station & fresh WV droppings (latrine).*
Burrows	TL 51256 49876	LB	Burrows amongst dense nettles - potential WV.
Burrows	TL 51264 49796	LB	Potential WV burrows in toe of undercut bank amongst nettles.
Latrine, burrow & feeding remains	*TL 51267 49787*	*LB*	*Fresh water vole droppings (latrine) and feeding remains amongst stand of young canary grass.*

[1] NGR = National Grid Reference
[2] Bank – LB = left bank, RB = right bank (when facing downstream of watercourse)

Water vole relevant field sign	NGR[1]	Bank[2]	Comments
Footprints	TL 51277 49765	LB	Rodent footprints - potential WV / rat
Burrow	TL 51282 49752	LB	Potential WV burrow 40 cm up bankside
Burrow	TL 51360 49709	LB	Burrow (potential WV) along pond edge/field margin. Half inaccessible due to dense bramble. Some reedmace and willowherb on margins. Deep silt.
Burrows	TL 51354 49689	RB	2 burrows - rat / WV. 40 cm up bankside
Burrows	TL 51382 49679	RB	Series of old burrows for 10m+ stretch - potential rat / WV.
Burrows & feeding remains	TL 51396 49675	RB	Potential WV. Limited feeding remains amongst small section of grass on bank and 5m stretch of marginal vegetation - figwort, sedges, & reed canary grass.
Burrows & feeding remains	TL 51410 49659	RB	Potential WV burrows and feeding remains amongst reed canary grass
Burrows	TL 51430 49645	RB	Burrows at toe of bank, potential WV
Feeding remains, burrows, footprints	TL 51441 49640	RB	Potential WV
Burrows, footprints	TL 51466 49634	RB	Burrows at toe of bank. Footprints just upstream. Potential WV.
Burrows	TL 51559 49625	RB	Potential WV burrows at toe of bank
Burrows	TL 51718 49606	RB	Potential WV burrows at toe of bank
Burrows	TL 51719 49603	RB	Potential WV burrows at toe of bank
Burrow & feeding remains	TL 51778 49488	RB	Burrow and old feeding remains (small segments) among tree roots. Potential WV.

Water vole relevant field sign	NGR[1]	Bank[2]	Comments
Burrow	TL 51833 49344	LB	Potential WV near top of bank
Burrows	TL 51808 49360	LB	Potential WV burrows at toe of bank amongst brambles - little marginal or emergent vegetation, canary reed grass stand on opposite bank
Burrows	TL 51799 49372	LB	Series of burrows at toe of bank and under water & occasional footpaths on mud (WV/rat) - 30m stretch
Burrows	TL 51764 49519	LB	Burrows at toe of bank. 10cm up sparsely vegetated banks. Potential WV.
Burrows	TL 51712 49595	LB	Burrows at toe of bank. Potential WV.
Burrows	TL 51715 49607	LB	Burrows under nettles (bare bank). Potential WV.
Burrows	TL 51617 49633	LB	Burrows at toe of bank under scrub. Potential WV.
Burrows	TL 51528 49621	LB	Burrows at toe of earth bank under nettles, across 5m stretch. Potential WV.
Burrows & footprints	TL 51480 49627	LB	Under nettles. Exposed bank. Potential WV.
Burrows & footprints	TL 51452 49631	LB	Series of burrows & footprints 30cm up bank, at toe and underwater. Potential WV. Varying water levels likely.
Burrows	TL 51410 49653	LB	Series of burrows at toe of bank under nettles and underwater. Potential WV.
Feeding remains & burrows	TL 51399 49667	LB	Feeding station & burrows in submerged vegetation. Fragments ~20 cm long. Potential/likely WV.
Burrows	TL 51883 49326	RB	Potential WV. Deep silty section.
Burrows & footprints	TL 51896 49325	RB	Series of burrows at toe of bank and footprints upstream. Potential WV.

Water vole relevant field sign	NGR[1]	Bank[2]	Comments
Burrows & footprints	TL 51932 49311	LB	Series of burrows with footprints at toe of bank under ivy. Potential WV.
Burrows	TL 51947 49307	RB	Series of burrows at toe of bank under ivy. Potential WV.

Table B-2 – River Granta D2 – Water Vole Field Signs

Water vole relevant field sign	NGR[3]	Bank[4]	Comments
Burrows	TL 48808 51296	LB	Burrow at toe of bank, Potential WV.
Burrows & latrine	*TL 48776 51297*	*LB*	*Latrine - fresh & old droppings in steep grassy bank*
Latrine	*TL 48700 51288*	*RB*	*Latrine under willow tree*
Latrine	*TL48684 51285*	*RB*	*WV latrine*
Mink scat/prints	TL 48678 51284	LB	Potential mink footprints
Burrows	TL 48676 51283	LB	2 burrows 50cm up bank. Potential WV.
Latrine	*TL 48642 51278*	*LB*	*WV latrine*
Latrine	*TL 48615 51273*	*LB*	*WV latrine, toe of LB. Well used.*
Burrows & latrine	*TL 48609 51272*	*LB*	*WV latrine & burrows*

[3] NGR = National Grid Reference
[4] Bank – LB = left bank, RB = right bank (when facing downstream of watercourse)

Water vole relevant field sign	NGR[3]	Bank[4]	Comments
Burrows	TL 48599 51273	RB	Potential WV burrow up bank
Burrows & latrine	*TL 48577 51267*	*LB*	*WV latrine and burrows, likely more burrows under willowherb & nettle cover*
Latrine & burrow	*TL 48571 51266*	*LB*	*WV latrine & burrows*
Latrine	*TL 48550 51265*	*RB*	*WV latrine at toe of bank in mud*
Latrine	*TL 48493 51254*	*LB*	*WV latrine*
Latrine	*TL 48497 51254*	*LB*	*WV latrine*
Burrows	TL 48443 51246	RB	Burrow at toe of bank, looks well used. Potential WV.
Latrine & burrows	*TL 48437 51247*	*RB*	*WV latrine & burrows at the muddy toe of bank*
Latrine, burrow & feeding remains	*TL 48426 51247*	*LB*	*WV latrine. Burrow and old feeding remains*
Latrine	*TL 48396 51239*	*LB*	*WV latrine at toe of bank*
Burrows & latrine	*TL 48396 51239*	*RB*	*WV latrine and burrows*
Latrine	*TL 48388 51240*	*RB*	*WV latrine*
Latrine & burrows	*TL 48225 51230*	*LB*	*WV latrine and burrows*
Latrine	*TL 48223 51230*	*LB*	*WV latrine amongst dense common reed, nettle, and willowherb in channel. Himalayan balsam present.*
Latrine	*TL 48158 51237*	*RB*	*WV latrine*

Water vole relevant field sign	NGR[3]	Bank[4]	Comments
Latrine	*TL 48142 51239*	*RB*	*WV latrine*

Table B-3 – Ditch W06 (north of River Granta) – Water Vole Field Signs

Water vole relevant field sign	NGR[5]	Bank[6]	Comments
Burrows	TL 48181 51361	Southern	Potential WV or rat burrow near top of bank of currently dry and densely vegetated ditch north of D2.

Table B-4 – Hobson's Conduit D4, Nine Wells – Water Vole Field Signs

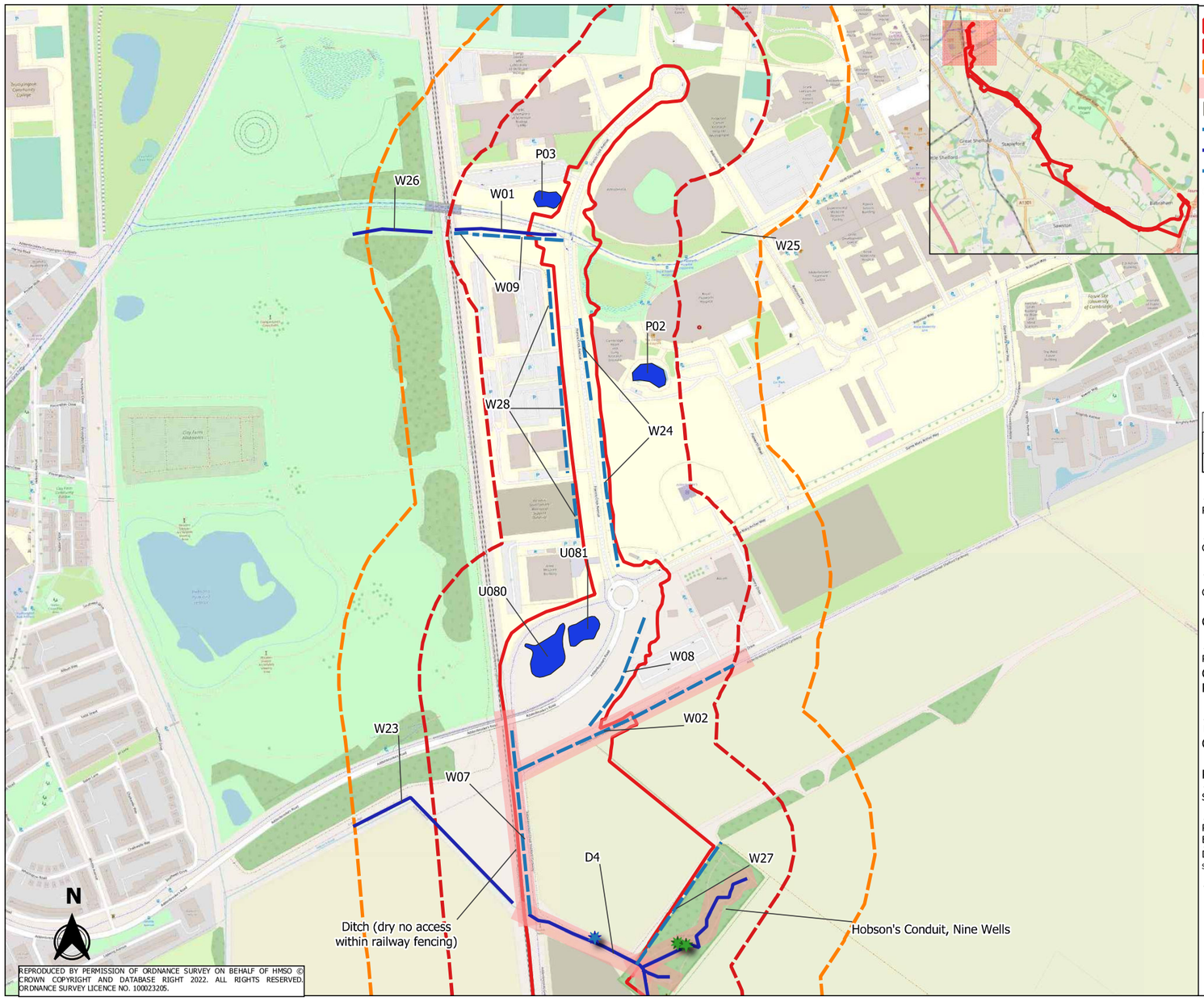
Water vole relevant field sign	NGR[7]	Bank[8]	Comments
Burrows	TL 46105 54151	LB	2 burrows 20cm & 40cm up the bank, possibly rat (~8-10cm wide)
Dropping	TL 46119 54156	LB	Rat droppings
Droppings	TL 46134 54155	LB	Rat droppings
Latrine/droppings	*TL 46138 54157*	*LB*	*WV droppings in Hobson's Conduit, Nine Wells woodland watercourse*
Burrows	TL 45963 54180	LB	Burrows visible along toe of bank viewed from top of bank due to steepness and deep silt hindering close inspection (more likely under the vegetation).

[5] NGR = National Grid Reference
[6] Bank – LB = left bank, RB = right bank (when facing downstream of watercourse)
[7] NGR = National Grid Reference
[8] Bank – LB = left bank, RB = right bank (when facing downstream of watercourse)

Water vole relevant field sign	NGR[7]	Bank[8]	Comments
Live sighting	*TL 45995 54166*	*LB*	*Incidental WSP project ecology team observation (19/08/22) - water vole seen descending from south side bank into watercourse.*
Live sighting	*TL 45939 54192*	*N/A*	*Incidental WSP project ecology team observation (19/08/22) - water vole seen within vegetation along channel before submerging, close to footbridge on west side*
Mink scat	TL 46010 54160	N/A	Potential mink (predator of water vole) scat on artificial latrine 'float' (upon collection 11/10/22)

Appendix C

Otter Survey Results Maps



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Red line boundary on 26.09.22
100m buffer
200m buffer
Survey area 202
Ponds
Dry ditch
Watercourse
Wet ditch

Otter field signs 2022
Feeding remains
Footprints
Mammal path
Resting place
Slide
Spraint

Other field signs 2022
Mink scat
Rat droppings

Rev	Drwn	Chkd	Appd	Date
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Purpose of Issue
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Cambridge South East Transport (CSET) Phase 2

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Project No ED/000553
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Drawing Identifier STND-WSP-EBD-XX-GS-LE-1015
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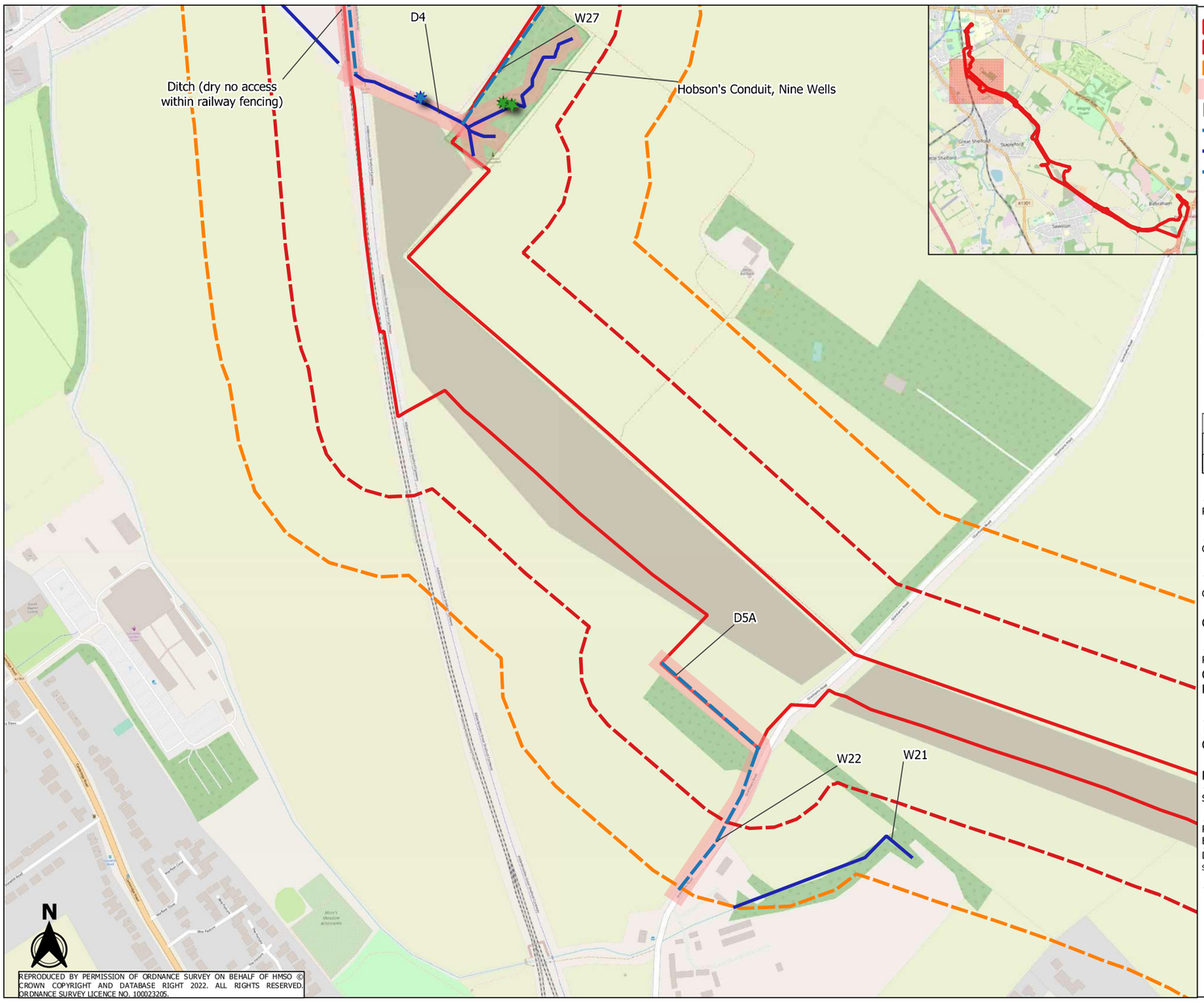

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Red line boundary on 26.09.22
100m buffer
200m buffer
Survey area 202
Ponds
Dry ditch
Watercourse
Wet ditch

Otter field signs 2022
Feeding remains
Footprints
Mammal path
Resting place
Slide
Spraint

Other field signs 2022
Mink scat
Rat droppings

Rev	Drwn	Chkd	Appd	Date
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Project No ED/000553
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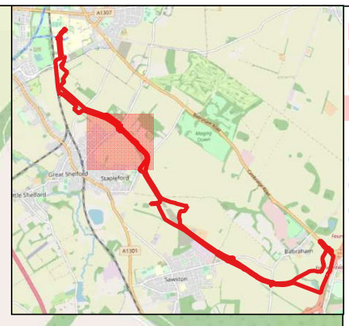
W21



Red line boundary on 26.09.22
100m buffer
200m buffer
Otter survey area 2022
Ponds
Dry ditch
Watercourse
Wet ditch

Otter field signs 2022

Feeding remains
Footprints
Mammal path
Resting place
Slide
Spraint

Other field signs 2022

Mink footprints
Mink scat
Rat droppings

Rev	Drwn	Chkd	Appd	Date
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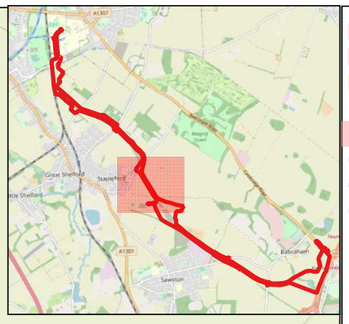

Red line boundary on 26.09.22
100m buffer
200m buffer
Ponds
Otter survey area 2022
Dry ditch
Watercourse
Wet ditch

Otter field signs 2022

Feeding remains
Footprints
Mammal path
Resting place
Slide
Spraint

Other field signs 2022

Mink scat
Rat droppings

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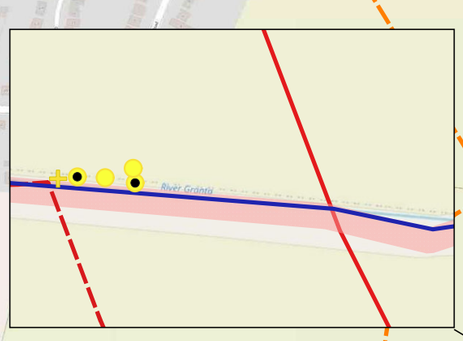

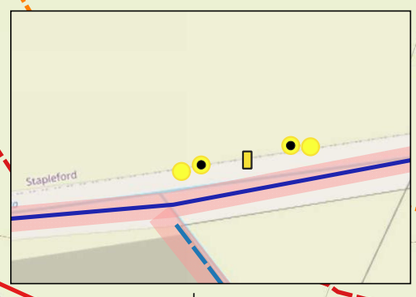

W03
W06
D2
River Granta
W19

N

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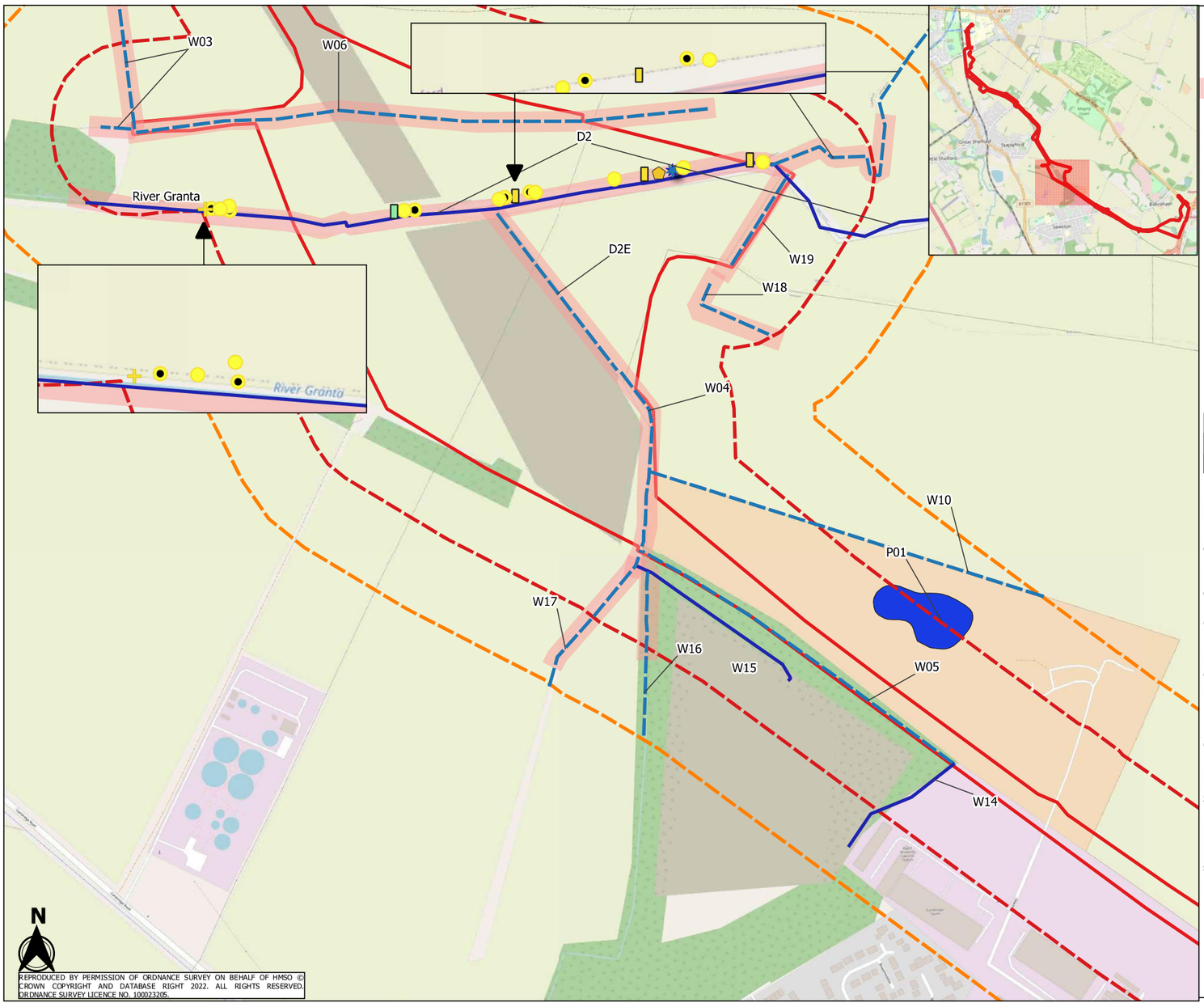

Red line boundary on 26.09.22
100m buffer
200m buffer
Survey area 2022
Ponds 200m
Dry ditch
Watercourse
Wet ditch

Otter field signs 2022
Feeding remains
Footprints
Mammal path
Resting place
Slide
Spraint

Other field signs 2022
Mink scat
Rat droppings

Rev	Drwn	Chkd	Appd	Date
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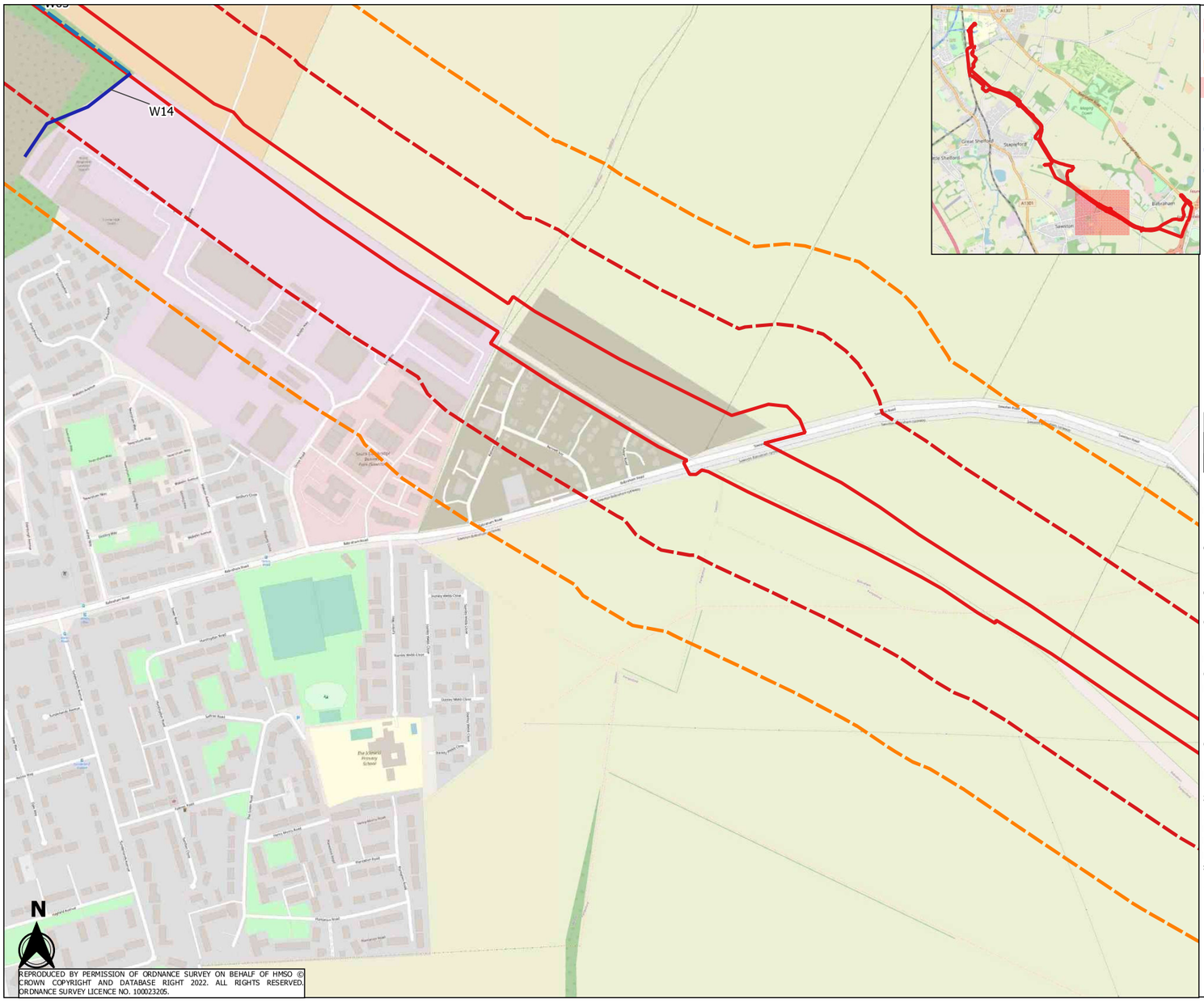

Red line boundary on 26.11.22
100m buffer
200m buffer
Survey area 2022
Ponds
Dry ditch
Watercourse
Wet ditch

Otter field signs 2022
Feeding remains
Footprints
Mammal path
Resting place
Slide
Spraint

Other field signs 2022
Mink footprints
Mink scat
Rat droppings

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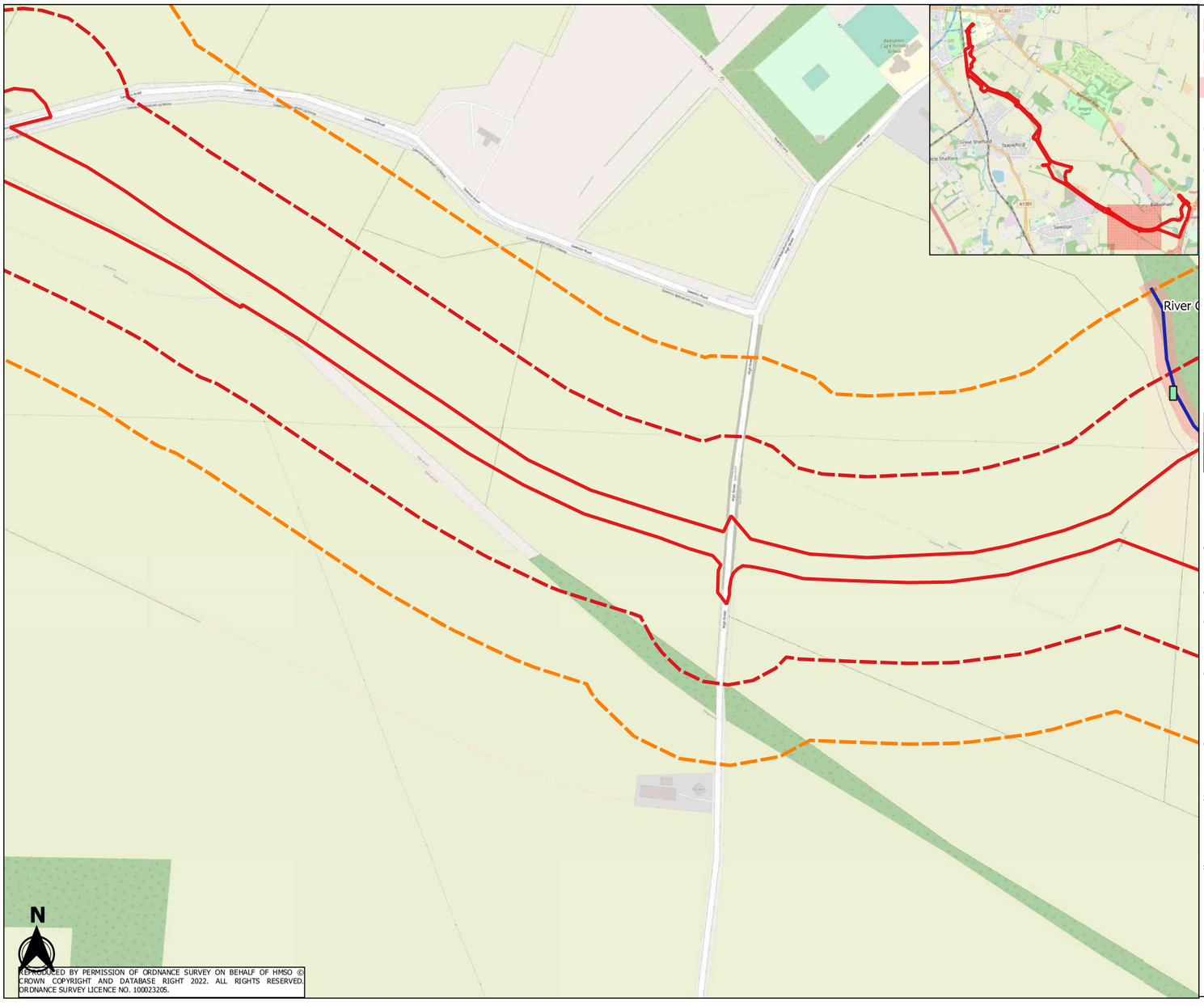

Red line boundary on 26.09.22
100m buffer
200m buffer
Survey area 2022
Ponds 200m
Dry ditch
Watercourse
Wet ditch

Otter field signs 2022
Feeding remains
Footprints
Mammal path
Resting place
Slide
Spraint

Other field signs 2022
Mink footprints
Mink scat
Rat droppings

Rev	Drwn	Chkd	Appd	Date
P01.1	TR	AS	TB	15/11/2022

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Otter Survey Results 2022

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Scale at A3	Drawn	Checked	Approved
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Project No: ED/000553
Date: 13/12/2022
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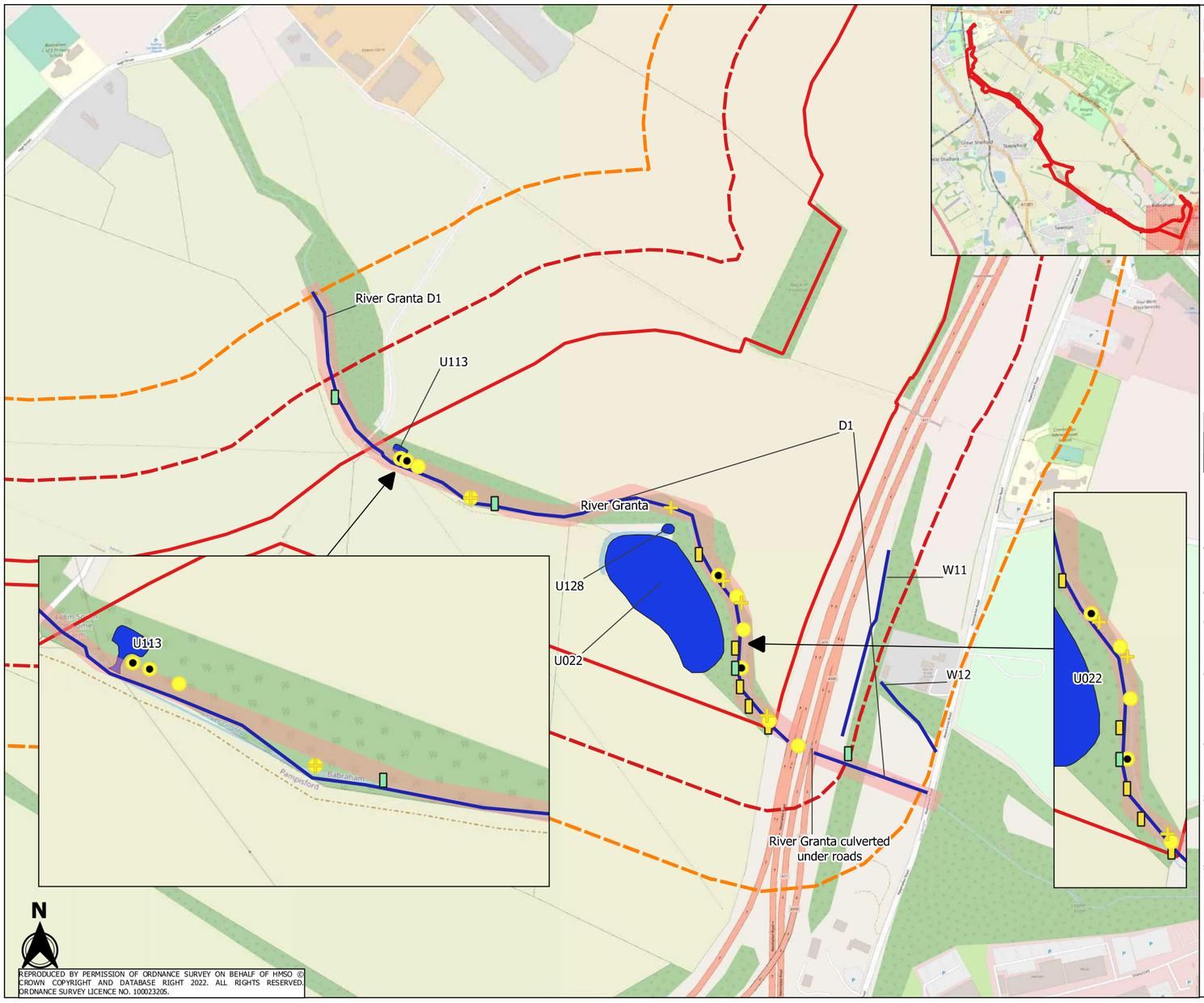

Red line boundary on 26.09.22
100m buffer
200m buffer
Survey area 2022
Ponds 200m
Dry ditch
Watercourse
Wet ditch

Otter field signs 2022
Feeding remains
Footprints
Mammal path
Resting place
Slide
Spraint

Other field signs 2022
Mink footprints
Mink scat
Rat droppings

Rev	Drwn	Chkd	Appd	Date
P01.1	TR	AS	TB	15/11/2022

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Otter Survey Results 2022

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Project No: ED/000553
Date: 14/12/2022
Drawing Identifier: STND-WSP-EBD-XX-GS-LE-1022
Revision: P01.1

Appendix D

Otter Survey Results Tables

Public

Italics = confirmed evidence of otter presence

Table D-1 – River Granta D1 – Otter Field Signs

Otter field sign	NGR[9]	Bank[10]	Comments
Mammal path	TL 51277 49765	LB	Mammal path leading from river (could be otter and/or deer - both present locally)
Resting place	TL 51354 49689	RB	Potential couch (otter or could be deer) - flattened vegetation on bank
Resting place	*TL 51362 49686*	*RB*	*Couch/lay-up with old otter spraint and potential muntjac deer droppings. Under very mature willow.*
Spraints	*TL 51376 49679*	*RB*	*Old spraints along weir*
Spraint & feeding remains	*TL 51441 49640*	*RB*	*Old spraints & crayfish remains on bank*
Mammal path	TL 51475 49633	RB	Mammal path in scrub area. Potential otter (and/or deer).
Spraint & feeding remains	*TL 51771 49518*	*RB*	*Old spraint & crayfish remains on gravel bar*
Spraints	*TL 51779 49477*	*RB*	*Old spraints on tree root*
Slide	TL 51814 49356	RB	Potential otter slide on bank
Spraint & feeding remains	*TL 51811 49364*	*LB*	*Old spraint & crayfish remains*
Slide	TL 51790 49382	LB	Mammal slide (potential otter)
Slide	TL 51779 49406	LB	Mammal slide (potential otter)

[9] NGR = National Grid Reference
[10] Bank – LB = left bank, RB = right bank (when facing downstream of watercourse)

Otter field sign	NGR[9]	Bank[10]	Comments
Resting place & mammal paths	TL 51773 49429	LB	Potential otter couch on bank, flattened vegetation / mammal paths
Slide	TL 51773 49454	LB	Mammal slide (potential otter)
Resting place & feeding remains	TL 51748 49544	LB	Potential otter lay-up in base of willow tree and potential feeding remains including crayfish.
Slide	TL 51728 49570	LB	Potential otter slide
Feeding remains	TL 51689 49628	LB	Potential otter feeding remains (crayfish) - adjacent suitable cover habitat
Spraint	*TL 51847 49333*	*LB*	*Relatively fresh spraint under A11 bridge*
Mammal path	TL 51913 49323	RB	Mammal paths through woodland - potential otter or deer

Table D-2 – River Granta D2 – Otter Field Signs

Otter field sign	NGR[11]	Bank[12]	Comments
Spraint	*TL 48808 51298*	*In-channel*	*Relatively fresh otter spraint on gravel bar*
Slide	TL 48808 51296	LB	Mammal slide - may be used by otter and deer
Spraint	*TL 48713 51290*	*In-channel*	*Fresh spraint on gravel bar in channel*
Footprints	TL 48678 51284	LB	Otter footprints (with potential mink footprints, noted under water vole)
Slide	TL 48676 51283	RB	Mammal slide (potential otter)

[11] NGR = National Grid Reference
[12] Bank – LB = left bank, RB = right bank (when facing downstream of watercourse)

Otter field sign	NGR[11]	Bank[12]	Comments
Spraint	*TL 48626 51276*	*In-channel*	*Fresh otter spraint on gravel bar in channel*
Resting place, slide & spraint	*TL 48520 51261*	*RB*	*Otter lay-up with slide and fresh spraint behind roots of field maple - appears used and more slides nearby*
Resting place & spraint	*TL 48482 51252*	*LB*	*Fresh spraint and lay-up in base of mature willow*
Spraint	*TL 48482 51252*	*RB*	*Spraint in same area as above on opposite bank*
Resting place & spraints	*TL 48371 51237*	*LB*	*Lay-up/couch on grassy bank. Fresh and old spraints*
Mammal path	TL 48358 51237	LB	May be used my multiple species (including otter). Deer and badger prints. Well used path.
Resting place & spraint	*TL 48148 51238*	*LB*	*Otter lay-up with fresh and old spraint on grassy bank under willow roots*
Resting place, spraints & feeding remains	*TL 48126 51240*	*RB*	*Lay-up/couch and fresh and old spraints and crayfish feeding remains on root base of willow*

Appendix E

Designated Sites Within 2km

wsp

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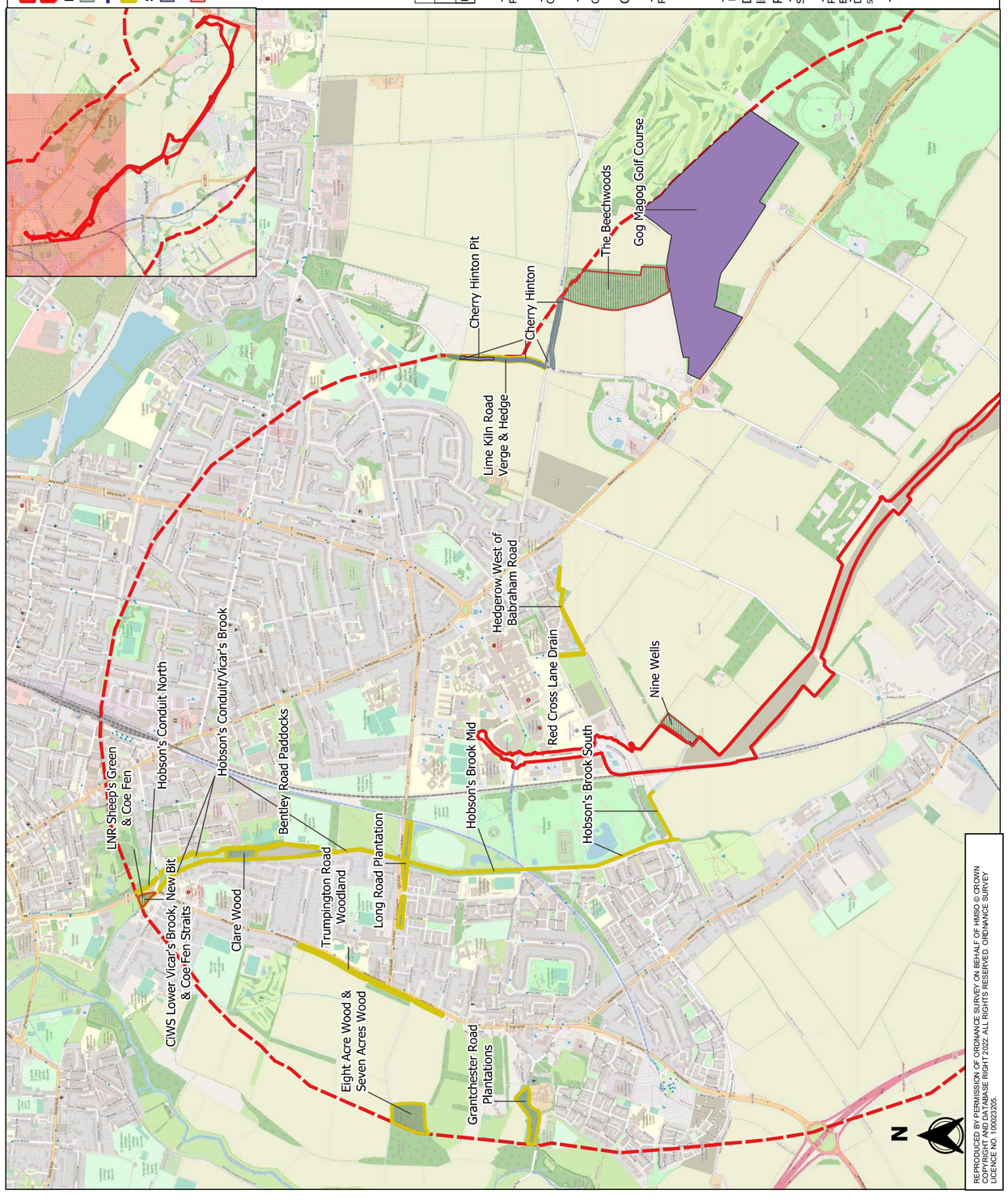

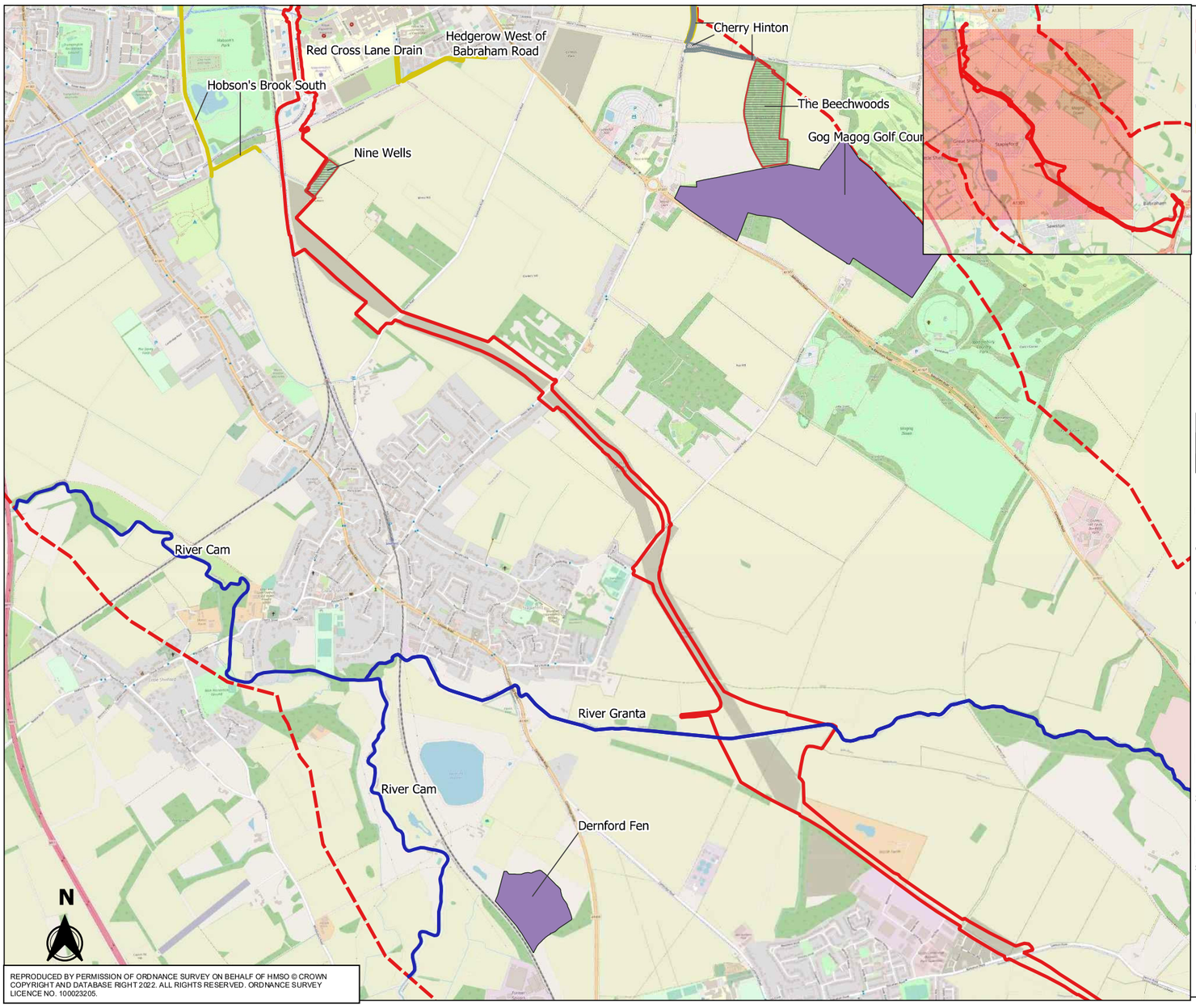

Red line boundary 26.09.22
2km buffer
Non-Statutory Designated Sites
Protected Road Verges (PRV)
County Wildlife Sites (CWS)
City Wildlife Site (CiWS)
Statutory Designated Sites
Sites of Special Scientific Interest (SSSI)
Local Nature Reserves (LNR)

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Drawing
Designated sites within 2km of the red line boundary
Page 2 of 4

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Project No: ED/000553
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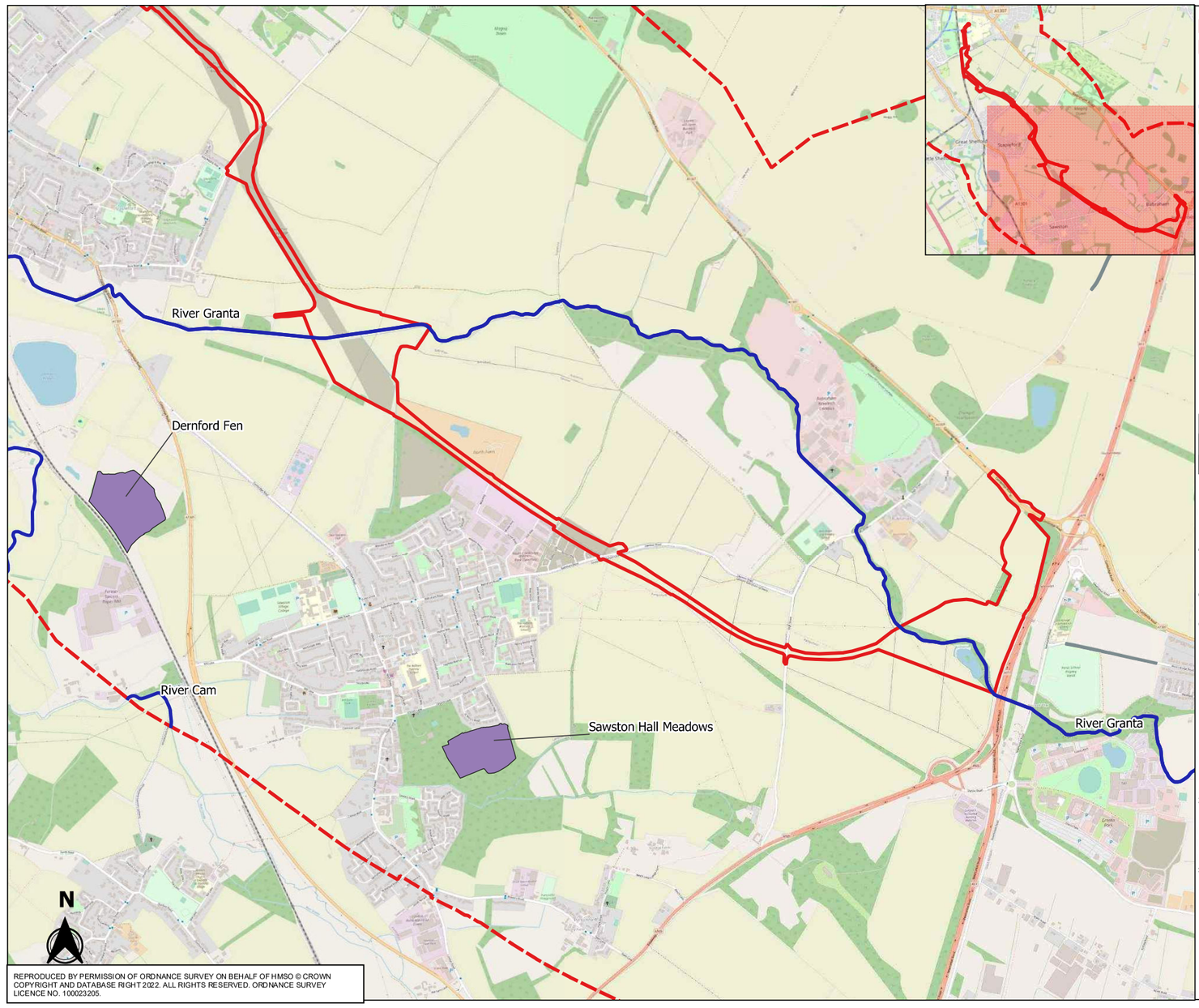

Red line boundary 26.09.22
2km buffer
Non-Statutory Designated Sites
Protected Road Verges (PRV)
County Wildlife Sites (CWS)
City Wildlife Site (CiWS)
Statutory Designated Sites
Sites of Special Scientific Interest (SSSI)
Local Nature Reserves (LNR)

Rev	Drwn	Chkd	Appd	Date
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Drawing
Designated sites within 2km of the red line boundary
Page 3 of 4

Scale at A3	Drawn	Checked	Approved
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Project No: ED/000553
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Drawing Identifier: STND-WSP-EBD-XX-GS-LE-1025
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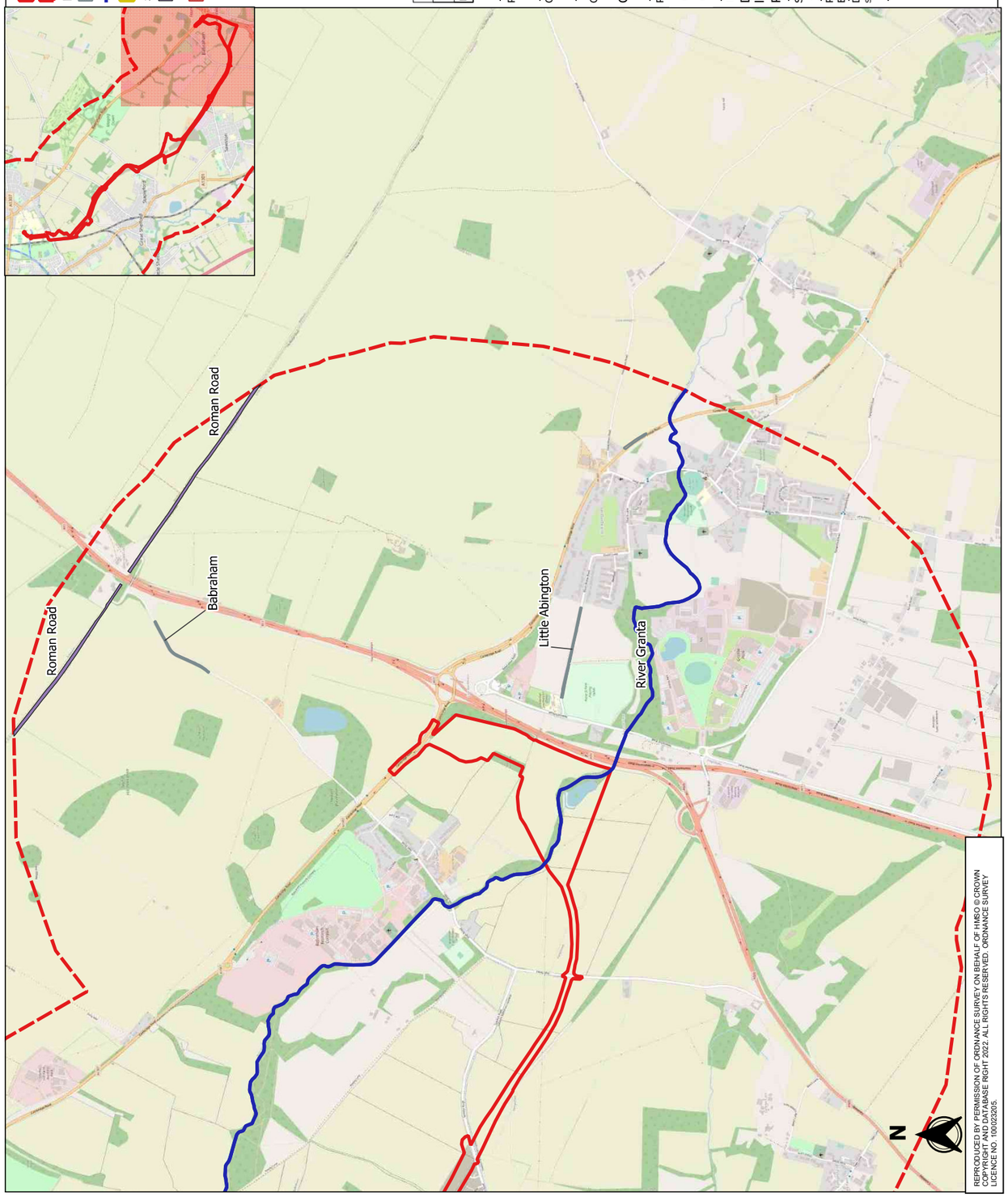

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Drawing
Designated sites within 2km of the red line boundary
Page 4 of 4

Scale at A3	Drawn	Checked	Approved
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