

East Anglia TWO Offshore Windfarm

Appendix 22.3

Water Vole and Otter Presence/Absence Survey Report

Preliminary Environmental Information
Volume 3

Document Reference – EA2-DEVWF-ENV-REP-IBR-
000817_003

Revision Summary					
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Appendix 22.3 is additionally supported by:

Annex 1: Water vole Presence/Absence Survey Results

Annex 2: Survey Photographs

Annex 3: **Figure 22.3.1**

Appendix 22.3 is supported by the figures listed below.

Figure Number	Title
Figure 22.3.1	Water Vole and Otter Survey Habitat

Appendix 22.3 is supported by the tables listed below.

Table Number	Title
Table A22.1	Water vole Field Signs Summary (Visit 1 – June 2018)
Table A22.2	Water vole Field Signs Summary (Visit 2 – August 2018)
Table A22.3	Otter Field Signs Summary (visit 1 – July 2018)

Glossary of Acronyms

CIEEM	Chartered Institute for Ecology and Environmental Management
EPS	European Protected Species
EU	European Union
HRA	Habitats Regulations Assessment
JNCC	Joint Nature Conservation Committee
PEIR	Preliminary Environmental Information Report
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TN	Target Note

Glossary of Terminology

Applicant	East Anglia TWO Limited. ScottishPower Renewables is the parent company of East Anglia TWO limited
Construction consolidation sites	Compounds which will contain laydown, storage and work areas for onshore construction works. The HDD construction compound will also be referred to as a construction consolidation site.
Development Area	Area containing all onshore and offshore infrastructure, transmission works, construction consolidation sites, and mitigation areas.
East Anglia TWO project	The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one offshore construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and cable connection to the National Grid.
European site	Sites designated for nature conservation under the Habitats Directive and Birds Directive, as defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017 and regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017. These include candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas.
Evidence Plan Process	A voluntary consultation process with specialist stakeholders to agree the approach to the EIA and the information required to support HRA.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
Jointing Bay	Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	The area where the offshore export cables would make contact with land, and connect to the onshore cables.
Link boxes	Underground chambers or above ground cabinets next to the cable trench housing electrical earthing links.
Mitigation areas	Areas captured within the Development Area specifically for mitigating expected or anticipated impacts.
National Grid infrastructure	The proposed East Anglia TWO project will require connection into an additional substation for ultimate connection to national electricity grid. The required National Grid infrastructure comprising a National Grid substation, connection to the existing electricity pylons and associated works will be consented as part of the proposed East Anglia TWO project Development Consent Order but will be National Grid owned assets.
National Grid overhead line works	Works required to upgrade the existing electricity pylons and overhead lines to transport electricity from the National Grid substation to the national electricity grid
National Grid overhead line works area	The proposed area for National Grid overhead line realignment works.

National Grid substation	The substation (including all of the electrical equipment within it) necessary to connect the proposed East Anglia TWO project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia TWO project Development Consent Order.
National Grid substation location	The proposed location of the National Grid substation required to connect the proposed East Anglia TWO project to the national electricity grid.
Natura 2000 site	A site forming part of the network of sites made up of Special Areas of Conservation and Special Protection Areas designated respectively under the Habitats Directive and Birds Directive.
Onshore cable corridor	The corridor within which the onshore cable route will be located.
Onshore cable route	This is the construction swathe within the onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas.
Onshore cables	The cables which would bring electricity from landfall to the onshore substation. The onshore cable is comprised of up to six power cables and two fibre optic cables.
Proposed onshore development Area	Onshore transmission works, mitigation areas and temporary construction facilities such as access roads or construction consolidation sites and National Grid infrastructure.
Onshore infrastructure	The combined name for all infrastructure associated with the proposed East Anglia TWO project from landfall to grid connection.
Onshore substation	The East Anglia TWO substation and all of the electrical equipment within in.
Onshore substation location	The proposed location of the onshore substation for the proposed East Anglia TWO project.
Onshore study area	All onshore areas being considered for the placement of onshore infrastructure or temporary construction consolidation sites. This includes areas being considered for National Grid infrastructure, East Anglia TWO onshore substation, onshore cable corridor and landfall.
Onshore transmission works	Landfall, onshore cable route and onshore substation location and National Grid substation location. This does not include temporary construction facilities such as access roads or construction consolidation sites.
Transition Bay	Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables.

22.3 Water Vole and Otter Survey Report

22.1 Introduction

1. This document presents the findings of a water vole *Arvicola amphibius* and otter *Lutra lutra* presence/absence survey undertaken in support of the proposed East Anglia TWO project.

22.2 Project Background

2. An Extended Phase 1 Habitat Survey was undertaken by Royal HaskoningDHV ecologists in April 2018 and is presented as **Appendix 22.1** of this PEIR. The Extended Phase 1 Habitat Survey (and subsequent preliminary assessments of features and habitats for protected species) covered a wider onshore study area.
3. Following the completion of the Extended Phase 1 Habitat Survey, the indicative onshore development area had been refined (denoted by the dashed red line on **Figure 22.3.1**) and therefore those water bodies assessed as suitable to support water voles and/or otters within this indicative onshore development area were surveyed and form the basis of this report (dashed red line in **Figure 22.3.1**).
4. Subsequently, the onshore indicative development area has since been refined further to show the proposed onshore development area. The results in this report are based on the indicative onshore development area. The proposed onshore development area is denoted on **Figure 22.3.1** as a solid red line for reference.

22.3 Legislation

22.3.1 Water Vole

5. Water voles are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and consequently are subject to the provisions of Section 9, which makes it an offence to:
 - Intentionally capture, kill or injure water voles;
 - Damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care);
 - Disturb them in a place of shelter or protection (on purpose or by not taking enough care); and

- Possess, sell, control or transport live or dead water voles or parts of them (except water voles bred in captivity that have not been lawfully released into the wild as part of a re-population or re-introduction program).

6. Activities that can harm water voles include:

- Destroying or disturbing their habitat;
- Destroying or disturbing places used for shelter or protection; and
- Changing water quality.

22.3.2 Otter

7. The European otter is the only native UK otter species and is a European protected species (EPS); it is also protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to:

- Capture, kill, disturb or injure otters (on purpose or by not taking enough care);
- Damage or destroy a breeding or resting place (deliberately or by not taking enough care);
- Obstruct access to their resting or sheltering places (deliberately or by not taking enough care); and
- Possess, sell, control or transport live or dead otters, or parts of otters.

8. Due to the similarity of otter and water vole habitats, the activities noted above that may harm water voles can also be applied to otter.

22.4 Methodology

22.4.1 Survey Area

9. The water vole and otter presence/absence survey covered all water bodies that are located within the indicative onshore development area that had been assessed during the Extended Phase 1 Habitat Survey as optimal water vole and/or otter habitat.

10. The survey area for each water body included the extent of water body that fell within the indicative onshore development area plus an additional 50m buffer up and downstream. The location of the water bodies subject to this survey are shown in **Figure 22.3.1**.

22.4.2 Survey Methodology

11. The first water vole and otter survey was undertaken in June 2018. The second water vole and otter survey was undertaken in August 2018. Due to access constraints for one waterbody, the water vole and otter survey for the Hundred River was undertaken in July 2018, this is detailed more in **section 22.4.5**.
12. The water vole survey was undertaken in accordance with the methodology set out in the Water Vole Conservation Handbook (3rd Ed.) (Strachan, Moorhouse and Gelling 2011) and as modified by The Water Vole Mitigation Handbook (Dean et al. 2016). Surveys were conducted on one bank for the full length of each optimal waterbody within the survey area (i.e. within the indicative onshore development area, plus 50m upstream and 50m downstream). Each water body was walked by an ecologist, and all field signs of water vole were recorded. This included sightings, burrows, latrines, feeding stations, lawns, nests, footprints and runways. The field sign type, its location was recorded and a photograph taken for each field sign observed. In addition to all water vole field signs, field signs of other aquatic mammals (e.g. rats, otter and mink) were recorded. The habitats adjacent to the survey area were recorded alongside detailed information on bankside species and watercourse characteristics.
13. Weather conditions were also recorded during the survey. Details of which are provided in **section 22.4.4**.

22.4.3 Surveyors

14. The water vole and otter surveys was conducted Royal HaskoningDHV ecologists and was led by. The survey team included:
 - Charlotte Clements, BSc (Hons), Associate Member of CIEEM (ACIEEM);
 - Claire Smith, BSc. MSc. Chartered Ecologist (CEcol) and Environmental (CEnv) and Full Member of CIEEM (MCIEEM);
 - Maria Walentek, BSc. MSc. Associate Member of CIEEM (ACIEEM); and
 - Kitty Taylor, BSc (Hons).

22.4.4 Weather Conditions

15. The weather conditions during each water vole and otter presence/absence survey were:
 - 28th June 2018 – High of 24°C, sunny with a light breeze;
 - 26th July 2018 – Sunny and high of 25 °C; and

- 30th August 2018 – High of 20 °C, dry with a light breeze.

22.4.5 Survey Limitations

16. The water vole and otter survey was conducted during the active water vole season (which is typically between March and September) however the presence of dense vegetation in some areas resulted in some water bodies not being fully accessed. In addition, it should also be noted that the weather conditions experienced during the 2018 survey window has been unseasonably dry due to an extended period of high temperatures within the UK.
17. Landowner access was not possible at the time of the June or August water vole and otter survey for the section of the Hundred River (water body No.63) that falls within the indicative onshore development area. Therefore, an ecologist accompanied the geomorphologist for this survey in July 2018 and checked for evidence for both water voles and otters. Although only one visit was undertaken for this water body, the findings from this single visit have enabled an initial conclusion to be drawn as to whether water voles and/or otters are present along this water body.
18. Whilst the survey team made the utmost effort to pick up all field signs present during the field surveys, on occasion due to human error some field signs can be missed or overlooked. However, despite this, the data presented in this report is considered to provide an accurate and robust understanding of the indicative onshore development area's water vole population.

22.5 Results

22.5.1 Findings from Extended Phase 1 Habitat Survey

19. The Extended Phase 1 Habitat Survey identified 40 water bodies that were subsequently assessed for their potential to support water vole and/or otter. 33 of these 40 water bodies were either dry (27 water bodies) or assessed as providing sub-optimal habitat (six water bodies). Following the refinement of the indicative onshore development area (as outlined in **section 22.3.2**), an additional two water bodies (Target Note (TN)288 and TN143) were located outside the indicative onshore development area. Consequently these 35 water bodies have been scoped out from further survey and/or mitigation and are not considered further in this report.
20. The remaining five waterbodies (listed in **Table A22.1**) were assessed as providing optimal habitat for water voles and were therefore subject to a water vole presence/absence survey, with their findings forming the basis of this report.

21. Only one water body (No.63) was assessed as providing optimal otter habitat and due to limited landowner access, this water body was surveyed only once and on a separate site survey visit in July 2018 for both water voles and otters.

22.5.2 Water Vole

22. **Table A22.1** and **Table A22.2** summarises the results of the water vole presence/absence surveys for the five waterbodies that had been assessed as providing optimal habitat for water vole. This table should be read in conjunction with **Figure 22.3.1**.

Table A22.1 Water vole Field Signs Summary (Visit 1 – June or July 2018)

Water body reference	Field sign	Description	Location	Comments
TN255a	None present	n/a	n/a	Dry
TN303a	None present	n/a	n/a	Dry
TN304a	None present	n/a	n/a	Dry
TN289	None present	n/a	n/a	Dry
63 (Hundred river) <i>note: surveyed in July only</i>	Landowner access was not possible at the time of June water vole survey. However, landowner access was granted for a geomorphological survey in July 2018. An ecologist accompanied the geomorphologist for this survey and no evidence of water voles was noted during this survey.			

Table A22.2 Water vole Field Signs Summary (Visit 2 – August 2018)

Water body reference	Field sign	Description	Location	Comments
TN255a	None present	n/a	n/a	Dry and evidence of recent works to the drain (i.e. reprofiling of the banks) evident.
TN303a	None present	n/a	n/a	Predominately dry channel with localised areas of water (ranging between 5-10cm deep) which is considered to be as a result from recent rainfall. Evidence of recent bank reprofiling works to the drain which have resulted in the drain now being assessed as sub-optimal habitat for water voles.
TN304a	None present	n/a	n/a	Dry
TN289	None present	n/a	n/a	Dry
63 (Hundred river)	Landowner access was not possible at the time of August water vole survey.			

23. No evidence of water vole presence was recorded during either of the two-water vole presence/absence surveys. Furthermore, no field signs of rat or mink were observed.

22.5.3 Otter

24. **Table A22.3** summarises the results of the otter presence/absence survey for the single water body (No.63) that had been assessed as providing optimal habitat for otter. This table should be read in conjunction with **Figure 22.3.1**.

Table A22.3 Otter Field Signs Summary (Visit 1 –July 2018)

Water body reference	Field sign	Description	Location	Comments
63 (Hundred river) <i>note: surveyed in July only</i>		Landowner access was not possible at the time of June water vole and otter survey. However, landowner access was granted for a geomorphological survey in July 2018. An ecologist accompanied the geomorphologist for this survey and no evidence of otters was noted during this survey.		

25. No evidence of otter activity was recorded during the 2018 otter presence/absence survey of the section of the Hundred River (No.63).

22.6 Conclusions and Recommendations

26. No evidence of water vole or otter has been recorded during the 2018 surveys, therefore it is considered likely that both of these species are absent.
27. Given the mobility of both water voles and otters, in combination with the presence of optimal habitat for these species being present, it is recommended that prior to works commencing, a pre-construction survey (within the optimal survey window) for both species is undertaken to confirm that both species remain absent, i.e. no changes to the findings of the 2018 survey. This should be undertaken by a suitably qualified ecologist.

22.7 References

Chartered Institute of Ecology and Environmental Management (CIEEM), (2016) Professional Code of Conduct, Revised June 2016.

Dean., M., Strachan, R., Gow, D. and Andrews, R. (2016) The Water Vole Mitigation Handbook (The Mammal Society Guidance Series). Eds. Fiona Matthews and Paul Chanin. *The Mammal Society*, London.

Natural England, (2014) Otters: surveys and mitigation for development projects. Natural England Standing Advice.

Royal HaskoningDHV, (2018). Extended Phase 1 Habitat Survey Report (Document reference: I&BPB4842R003D01).

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

Annex 1: Water vole Presence/absence Survey Results

East Anglia TWO Offshore Windfarm
Preliminary Environmental Information Report

Water body reference	Survey date	Surveyors	Waterbody type	Bank composition	Land use	Vegetation	Bank profile	Depth	Width	Current	Comments
TN255a	28 th June 2018	CC/MW/KT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Dry
TN303a	28 th June 2018	CC/MW/KT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Dry
TN304a	28 th June 2018	CC/MW/KT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Dry
TN289	28 th June 2018	CC/MW/KT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Dry
63 (Hundred river)	28 th June 2018	CC/MW/KT	Running water	Silt; Sand; and Earth.	Permanent / temporary grass.	Bankside trees – abundant Bushes – abundant Herbs – dominant Submerged weed – rare Reeds / sedges – rare Tall grass – frequent Short grass - frequent	Shallow (<45°)	0.5-1m	2-5m	Sluggish	Plenty of in channel veg, willow herb, reeds, bramble, common nettle, ash, alder, thistle, willow, very silted.

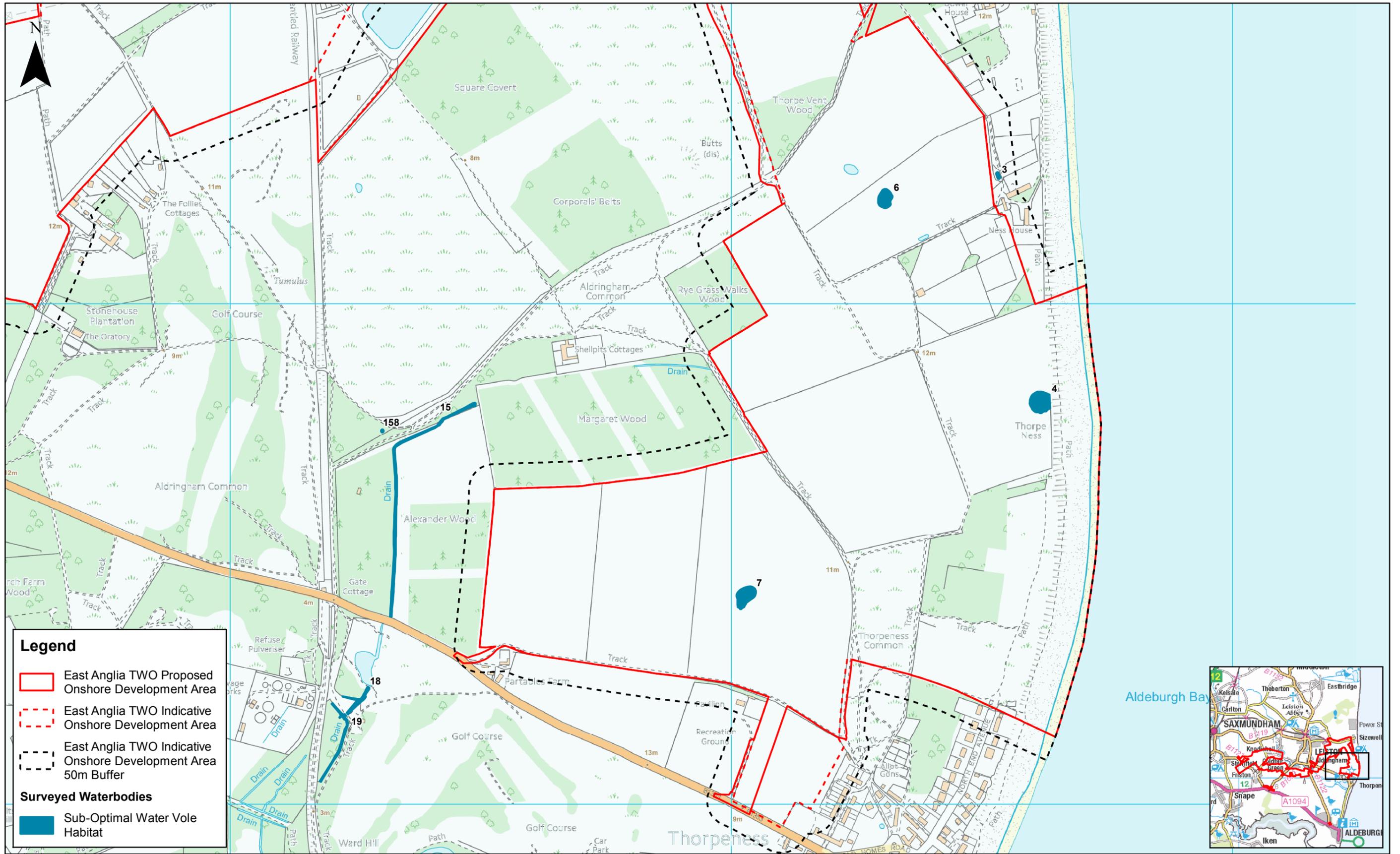
Annex 2: Photographs

Water body reference	Photograph
TN255a	
TN303a	

Water body reference	Photograph
TN304a	
TN289	

Water body reference	Photograph
63 (Hundred river)	

Annex 3: Supporting Figure



Legend

- East Anglia T2O Proposed Onshore Development Area
- East Anglia T2O Indicative Onshore Development Area
- East Anglia T2O Indicative Onshore Development Area 50m Buffer

Surveyed Waterbodies

- Sub-Optimal Water Vole Habitat



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2	14/11/2018	FC	Second Issue.	Prepared: FC
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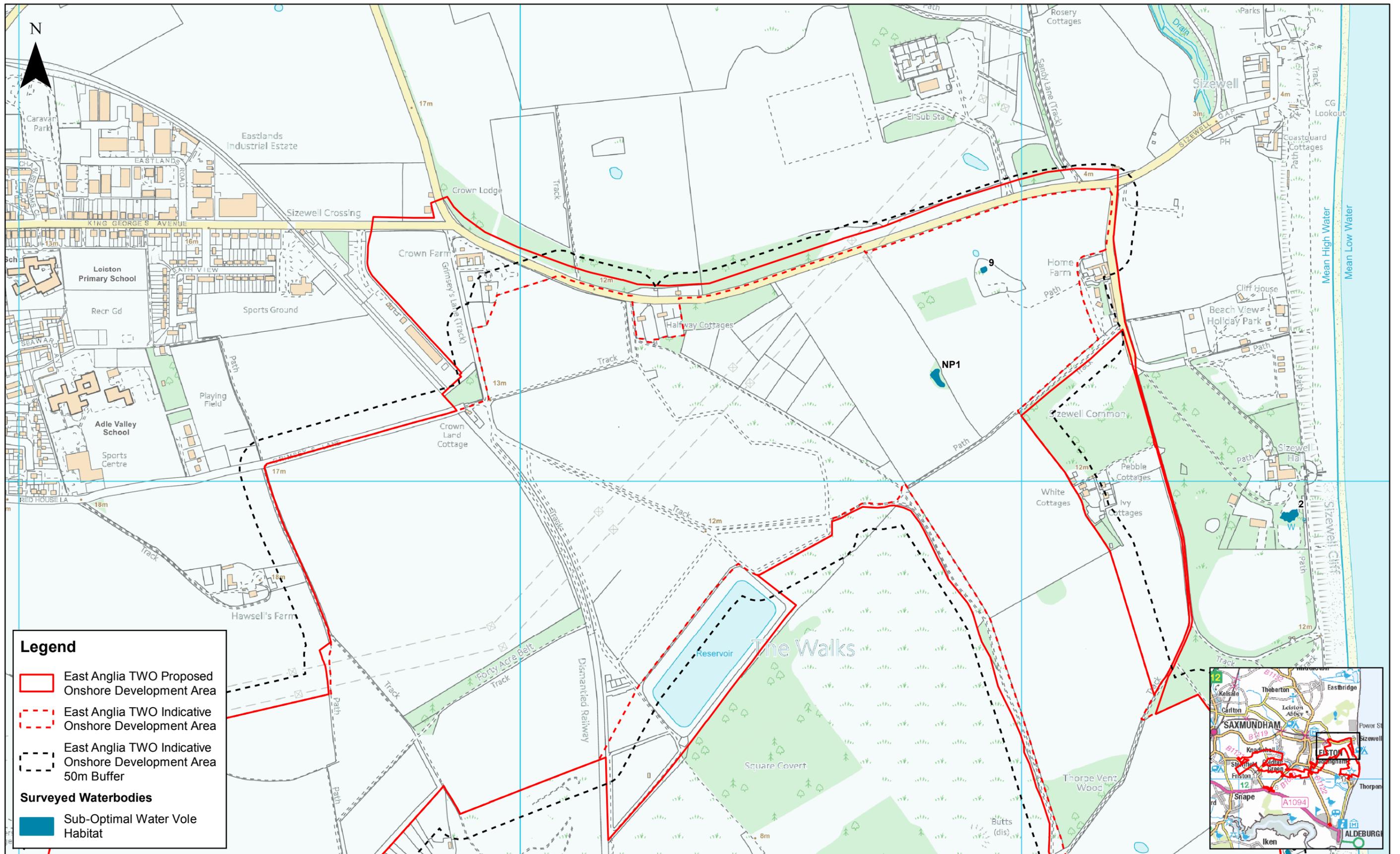
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Water Vole and Otter Survey

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Date	14/11/18
Figure	22.3.1a
Coordinate System:	BNG
Datum:	OSGB36



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2	14/11/2018	FC	Second Issue.	Prepared: FC
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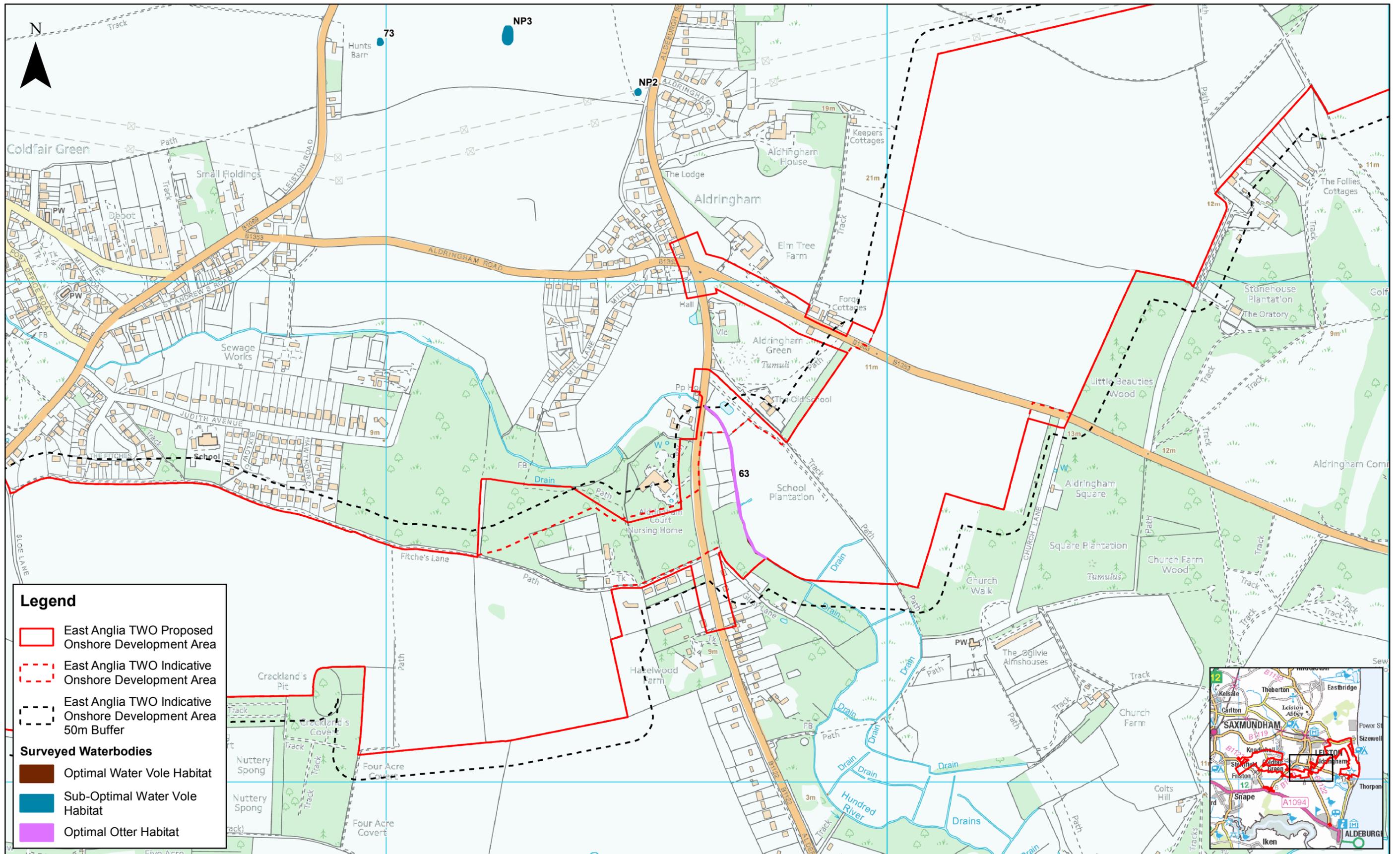
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Rev	2	Coordinate System: BNG
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Figure	22.3.1b	



Legend

- East Anglia T2O Proposed Onshore Development Area
- East Anglia T2O Indicative Onshore Development Area
- East Anglia T2O Indicative Onshore Development Area 50m Buffer
- Surveyed Waterbodies**
- Optimal Water Vole Habitat
- Sub-Optimal Water Vole Habitat
- Optimal Otter Habitat



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1	07/08/2018	FC	First Issue.	Checked: CS

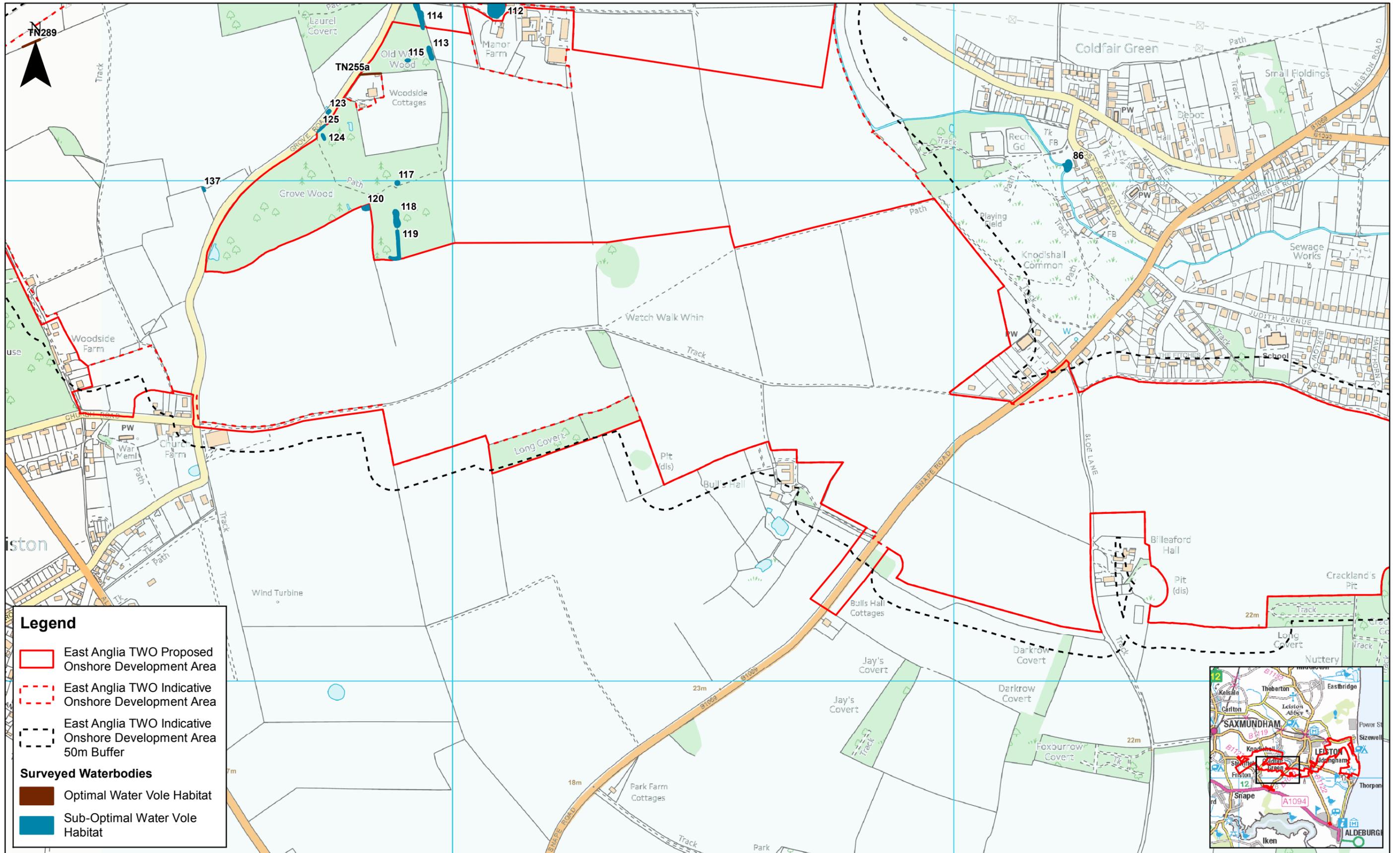
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Figure	22.3.1c
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Legend

- East Anglia T2O Proposed Onshore Development Area
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- Sub-Optimal Water Vole Habitat



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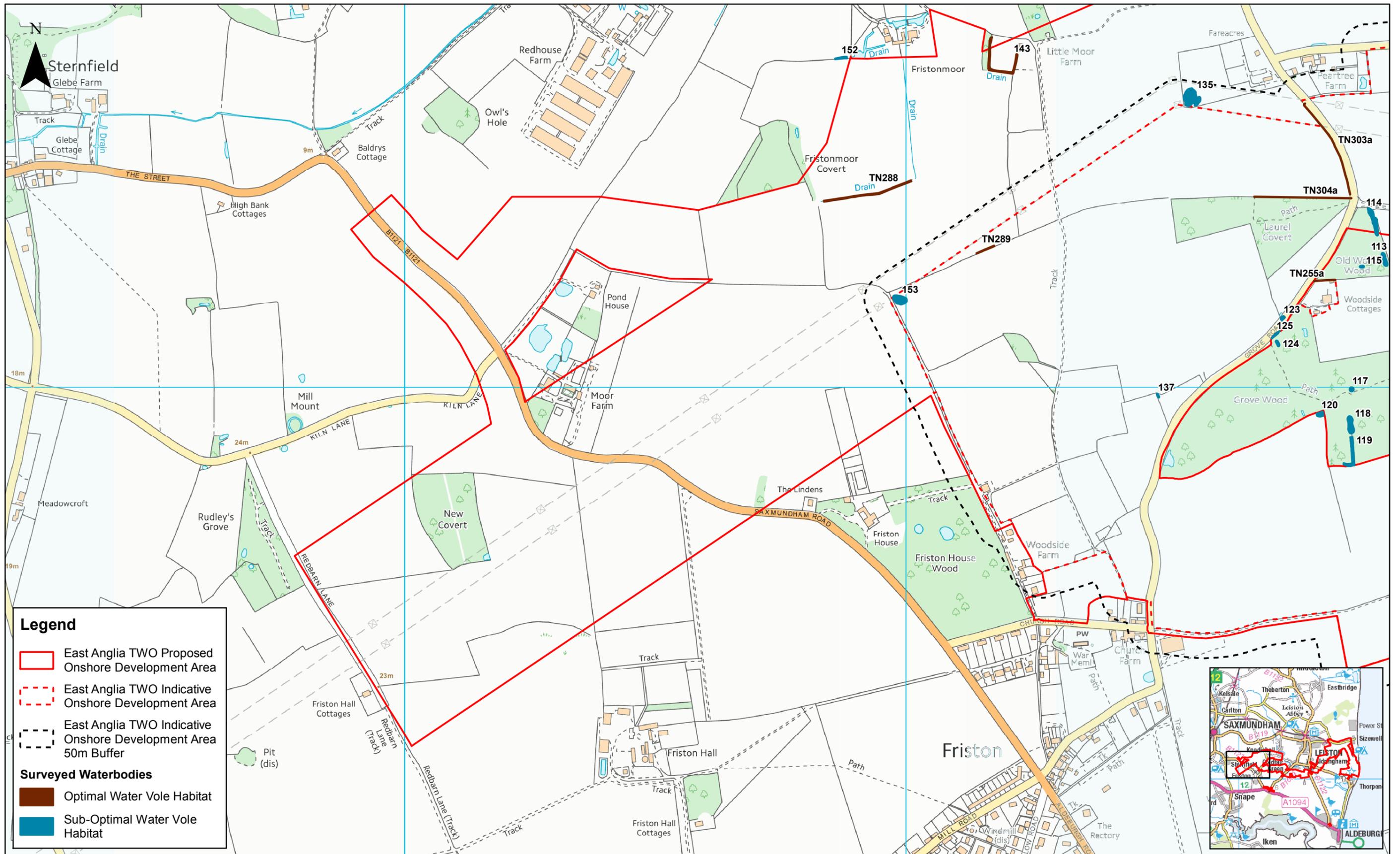
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Legend

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- East Anglia T2O Indicative Onshore Development Area
- East Anglia T2O Indicative Onshore Development Area 50m Buffer

Surveyed Waterbodies

- Optimal Water Vole Habitat
- Sub-Optimal Water Vole Habitat



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