

A585 Windy Harbour to Skippool Improvement Scheme

TR010035

6.8.8 ES Appendix 8.8: Water Vole Technical Appendix

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

Volume 6

October 2018

Page Left Intentionally Blank

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning
(Applications: Prescribed Forms and
Procedure) Regulations 2009

**A585 Windy Harbour to Skippool
Improvement Scheme**
Development Consent Order 201[]

ES APPENDIX 8.8: WATER VOLE TECHNICAL APPENDIX

Regulation Number:	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010035
Application Document Reference	TR010035/APP/6.8.8
Author:	A585 Windy Harbour to Skippool Improvement Scheme Project Team, Highways England

Version	Date	Status of Version
Rev 0	October 2018	DCO submission

Page Left Intentionally Blank

CONTENTS

1	INTRODUCTION.....	1
1.1	Aims and Objectives	1
1.2	Report Structure.....	1
2	METHODOLOGY.....	2
2.1	Introduction and Guidelines	2
2.2	Desk Study.....	2
2.3	Surveyor Experience.....	3
2.4	Defining the Survey Area	3
2.5	Habitat Assessment	3
2.6	Presence / Absence Survey.....	3
2.7	Survey Programme and Effort.....	4
2.8	Survey Limitations.....	4
3	RESULTS	5
3.1	Desk Study.....	5
3.2	Habitat Assessment	5
3.3	Presence / Absence Survey.....	5
4	CONCLUSION	6
5	REFERENCES.....	7
6	ABBREVIATIONS	8
	ANNEX A – HABITAT ASSESSMENTS	9
	ANNEX B – DRAWINGS.....	13

LIST OF TABLES

Table 2-1: Desk Study Data Source	2
Table 3-1: Water Vole Habitat Assessment Summary Results	5

Page Left Intentionally Blank

1 INTRODUCTION

1.1 Aims and Objectives

1.1.1 This report provides the findings of the water vole *Arvicola amphibious* surveys undertaken in support of Highways England's proposed development of the A585 between Windy Harbour and Skippool (hereafter referred to as 'the Scheme').

1.1.2 The aims and objectives of this assessment were to:

- Identify the presence of water vole within the study area
- Evaluate the habitats present with regards to water vole

1.1.3 The need for mitigation or compensation, and the identification of potential opportunities to enhance the existing ecological baseline, are not included within this report, but are discussed in full in Chapter 8: Biodiversity (document reference TR010035/APP/6.8).

1.2 Report Structure

1.2.1 This report has been subdivided into the following sections:

- Section 1 and 2: provide the aims and objectives with an overview of the methodologies adopted
- Section 3: presents the findings of the desk study and water vole survey
- Section 4: summarises the results and provides a conclusion of the survey findings.
- Section 5: references

2 METHODOLOGY

2.1 Introduction and Guidelines

2.1.1 The scope of the water vole surveys was designed in reference to good practice guidance, including the Water Vole Mitigation Handbook (Dean *et al*, 2016) survey methodology.

2.1.2 The desk study area (the ‘Desk Study Area’) and field survey area (the ‘Survey Area’), described herein, were determined during the options phase, at which time multiple Scheme options were under consideration. This report therefore, in some instances, contains information outside of the various study and survey areas discussed herein.

2.2 Desk Study

2.2.1 Table 2-1 summarises the sources of information utilised during the desk study and the information that was obtained.

Table 2-1: Desk Study Data Source

Source	Information obtained
Ordnance Survey (OS) mapping and online aerial imagery	Habitats present and their context within, and connectivity to the wider area. Ecological features potentially not evident on the ground during field surveys. Potential barriers to animal movements (such as road networks, built development and major watercourses).
Lancashire Environment Record Network (LERN)	Water vole records within approximately 1km of the Draft Order Limits
Lancashire Wildlife Trust and Cheshire Wildlife Trust	Survey work between 2008 and 2010 by the Lancashire Wildlife Trust and Cheshire Wildlife Trust (Powell and Milburn, 2011).
National Biodiversity Network (NBN) Atlas: https://nbnatlas.org/ (last accessed 16/02/2017)	Records of protected species and notable habitats within approximately 1km of the Draft Order Limits. Data protected by a Creative Commons Zero (CC0) or Creative Commons with Attribution (CC BY) licence was used within this report.
Wyre Council online planning application search – publicaccess.wyre.gov.uk/online-applications/	Habitat information and water vole records, within approximately 1km of the Draft Order Limits, submitted in support of planning applications to Wyre Borough Council.
A585 Windy Harbour Junction Improvements: Extended Phase 1 Habitat Survey (Mouchel, 2013)	Habitat information and water vole records for land within 500m of the Windy Harbour Junction at the eastern end of the Scheme

2.3 Surveyor Experience

2.3.1 Habitat assessments and water vole surveys were undertaken by an experienced surveyor, confident in the identification of:

- Water vole field signs
- Water vole behaviour and habitat requirements

2.4 Defining the Survey Area

2.4.1 An initial review of desk study data, OS mapping and aerial photography was undertaken to identify all watercourses, waterbodies and riparian habitat within an approximate 500m buffer of the Draft Order Limits (the water vole 'Survey Area'). Additionally, the results of the Phase 1 habitat survey (Appendix 8.1 Phase 1 Habitat Report (document reference TR010035/APP/8.1)) were used to inform this screening exercise.

2.5 Habitat Assessment

2.5.1 All watercourses within the Survey Area were assessed for their suitability to support water vole. Watercourses were only scoped out of from the need for a habitat assessment where significant barriers to movement occurred between a watercourse and the Draft Order Limits.

2.5.2 The habitat assessment comprised a walkover survey to record the following criteria:

- Proximity to the Draft Order Limits
- Presence of significant barriers to dispersal and movement through the territory
- Habitats present and their suitability for the use by water voles
- Availability of food sources
- Vegetation structure
- Adjoining land use
- Level of disturbance
- Features of watercourse/water body (bank profile, depth, flow rate, channel width)
- Connectivity with other areas of suitable or sub-optimal habitat
- Pollution

2.5.3 Watercourses were assessed as either suitable or unsuitable for water vole. Suitable watercourses were subsequently subject to water vole presence/absence surveys (Full details are provided in Annex A).

2.6 Presence / Absence Survey

2.6.1 Presence/absence surveys were undertaken on suitable watercourses within approximately 500m of the Draft Order Limits (Figure 8.8.1 at Annex B).

2.6.2 During each survey the banks of each watercourse (up to 2m from the edge of the water) were inspected for signs of water vole, including the following:

- Latrines
- Burrows (both active and inactive)
- Runs
- Footprints
- Presence of feeding remains
- Individual droppings
- Sightings and sounds (characteristic sound entering the water) of individuals

2.6.3 All signs were marked on a map and a note was made of the number of each type of sign recorded to allow an estimation of abundance.

2.6.4 Where it was possible, the survey was undertaken from within each watercourse to allow for a close search for signs of water vole.

2.6.5 All field signs of water vole were geo-tagged with GPS-derived grid coordinates accurate to less than 5m. Where topography and vegetation structure may have reduced the accuracy of records below this level, this information was noted.

2.7 **Survey Programme and Effort**

2.7.1 Two surveys were conducted on each watercourse; the first survey was undertaken during the period 3–6 April 2017 and the second survey was undertaken during the period 21–25 August 2017.

2.7.2 Surveys were not undertaken during or following periods of heavy rainfall, as field signs can be washed away.

2.8 **Survey Limitations**

2.8.1 Land access to the north west of the Survey Area was not available. Therefore, Ditches 1, 2, 3, 5 and 6 could not be surveyed (see Figure 8.8.1 at Annex B). These ditches are used for agricultural drainage and are not connected to any major watercourses such as the River Wyre. Numerous watercourses in the wider area were surveyed and it is considered that the data generated from these surrounding watercourses will be sufficient to inform an evaluation of the water vole baseline conditions within the Survey Area. The lack of information relating to these watercourses is therefore highly unlikely to qualitatively affect any conclusions.

3 RESULTS

3.1 Desk Study

3.1.1 No designated sites notified for water vole and no records of water vole were identified within or close to the Survey Area during the desk study.

3.2 Habitat Assessment

3.2.1 Most watercourses were unsuitable for water vole (Table 3-1) due to being heavily poached by cattle, having little vegetation, or being either dry or with minimal water flow.

Table 3-1: Water Vole Habitat Assessment Summary Results

Rating	No. watercourses
Suitable	5
Unsuitable	30
Not accessed	6

3.2.2 Five watercourses were, however, suitable for water vole:

- Main Dyke: some sections contained good riparian habitat, with suitable overhanging vegetation and bramble cover. Other sections were not suitable due to anthropogenic influence such as man-made channels and dredging activity
- Horse Bridge Dyke: Dense common reed *Phragmites australis* was from the top of both banks to the water's edge; creating very low light-levels at the bottom of the bank for fresh vegetation to grow
- Drain 14: Pasture drain from Carr Wood to Main Dyke. The lower section of the drain was mainly shaded by the hedgerow, so it was muddy with sparse vegetation
- Drain 29: The water level was low, and the lower banks were of exposed mud and free of vegetation. The upper bank vegetation was dominated by common reed. A 25m stand of greater reedmace *Typha latifolia* L. was present towards the southern edge of the landfill. The water channel passed through a culvert and underneath the road out on to the second former landfill field to the south
- Drain 35: Suitable vegetation was present at the toe of the bank despite some shading from common reed

3.2.3 Full habitat assessment results are presented in Annex A.

3.3 Presence / Absence Survey

3.3.1 No evidence of water vole was recorded during the presence absence surveys.

4 CONCLUSION

- 4.1.1 Watercourses were typically unsuitable for use by water voles, with only a small number of potentially suitable watercourses identified.
- 4.1.2 No evidence of water vole was recorded within the Survey Area during the desk study or field survey. It is therefore likely that water vole were absent from the survey area.

5 REFERENCES

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.

ERAP Ltd (2013). *Land off Garstang Road, Little Poulton, Poulton-Le-Fylde - Ecological Survey and Assessment*.

Powell, A., Milburn, K. (2011). *Northwest lowlands water vole project – final report, June 2011*.

6 ABBREVIATIONS

Term	Meaning/Definition
CC0	Creative Commons Zero
CC BY	Creative Commons with Attribution
GPS	Global Positioning System
LERN	Lancashire Environment Record Network
NBN	National Biodiversity Network
OS	Ordnance Survey

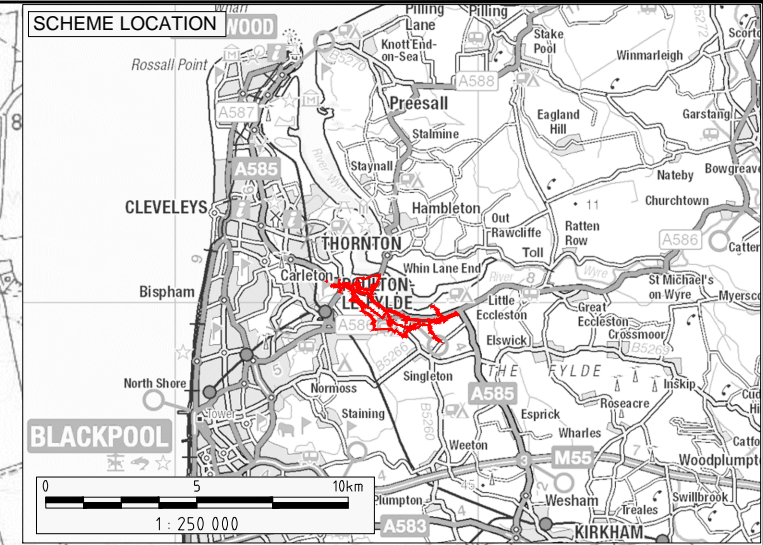
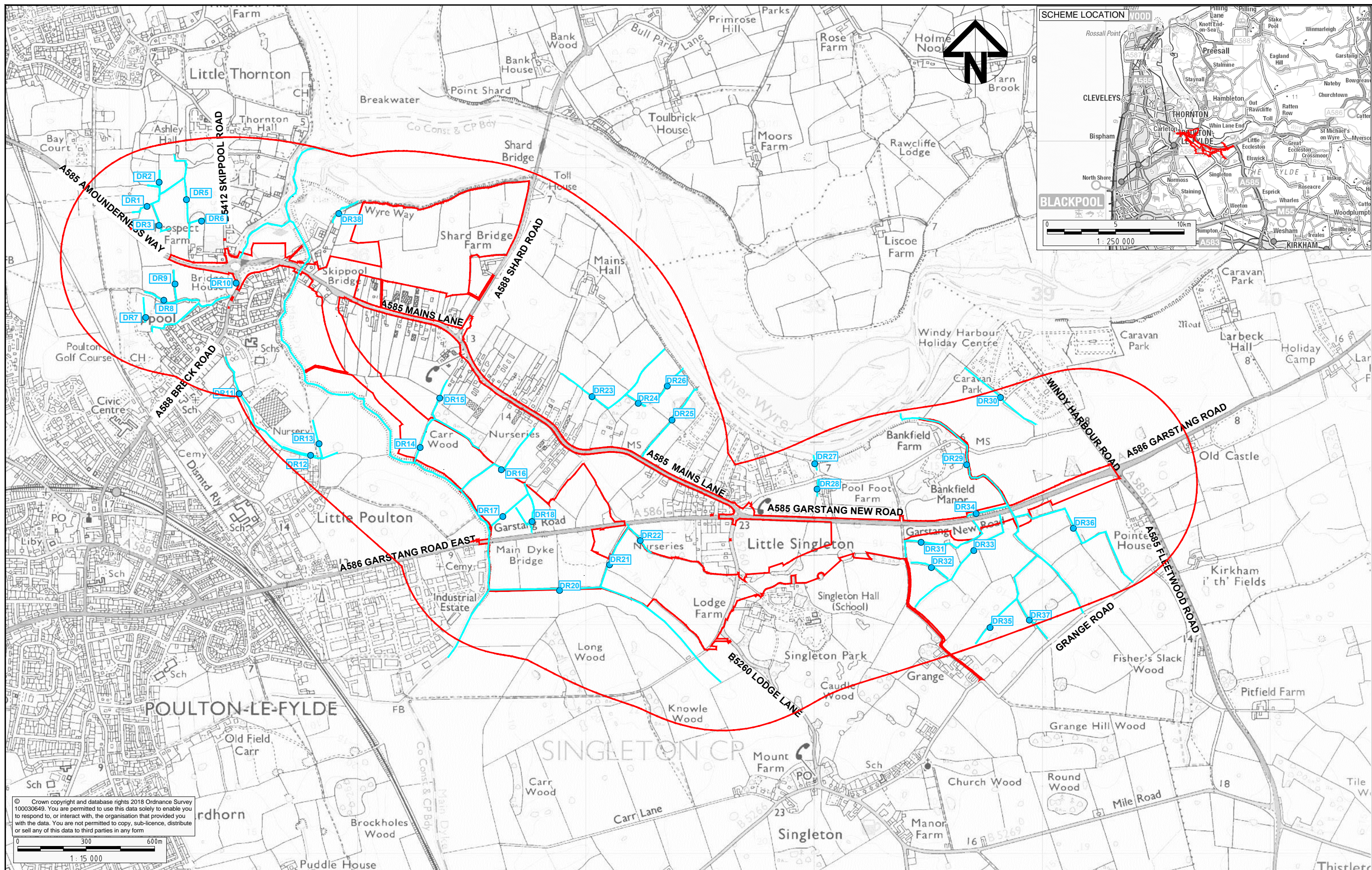
ANNEX A – HABITAT ASSESSMENTS

Waterbody	Comment	Suitable/unsuitable
Main Dyke	Some sections of the Main Dyke contained good riparian habitat, with suitable overhanging vegetation and bramble cover. Other sections were not suitable due to anthropogenic influence such as man-made channels and dredging activity.	Suitable
Skippool Creek	Skippool Creek had muddy lower banks on both sides. The drain is susceptible to fluctuating brackish/saline water	Unsuitable
Horse Bridge Dyke	Dense common reed (<i>Phragmites australis</i>) occurred from the top of both banks to the water's edge; creating very low light levels at the bottom of the bank for fresh vegetation to grow.	Unsuitable
	There were sections in the water course where the common reed became less dense, allowing overhanging grasses to grow.	Suitable
1	No access	Unknown
2	No access	Unknown
3	No access	Unknown
4	No access	Unknown
5	No access	Unknown
6	No access	Unknown
7	Located in a golf course. The ditch ran under a line of trees and a hedgerow causing heavy shading. There were very low water levels with no bankside vegetation.	Unsuitable
8	Dry ditch underneath hedgerow.	Unsuitable
9	Dry ditch underneath hedgerow.	Unsuitable
10	Ditch 10 is connected to Skippool Creek which runs out from a culvert from underneath the Skippool roundabout. This is a man-made channel with a stone wall and base.	Unsuitable
11	There was a very shallow bank on the north side of the ditch which was bare muddy ground and sparse scrub. The opposite south bank was steep with dense willow trees, dense bramble <i>Rubus fruticosus</i> and nettle. No suitable riparian vegetation for water voles was present. Water quality was very poor due to contamination.	Unsuitable
12	Initially identified from aerial imagery. Confirmed absent during survey.	N/A
13	Very shallow ditch with pockets of water but mostly dry. Very shallow banks which were heavily shaded by the hedgerow running	Unsuitable

Waterbody	Comment	Suitable/unsuitable
	along both banks. Poor water quality due to heavy contamination.	
14	Pasture drain from Carr Wood to Main Dyke. Lower section was mainly shaded by the hedgerow, so it was muddy with sparse vegetation.	Unsuitable
	There was a section of low suitable habitat as it had dense common reed, but good sparse vegetation along the banks.	Suitable
15	Ditch contained dense common reed with very little overhanging vegetation due to heavy shading.	Unsuitable
16	This ditch was over shaded by large trees. Dense common reed also caused shading at the toe of the bank. It was also heavily poached in some sections	Unsuitable
17	Poached on the south bank. North bank contained a mix of vegetation.	Unsuitable
18	Heavily poached banks and dominated by soft rush <i>Juncus effusus</i> . Heifers and calves were also present.	Unsuitable
19	Initially identified from aerial imagery. Confirmed absent during survey.	N/A
20	Ditch contained dense common reed with very little overhanging vegetation due to heavy shading	Unsuitable
21	Very exposed ditch, low and flat muddy banks with very little overhanging vegetation.	Unsuitable
22	Dry ditch underneath hedgerow.	Unsuitable
23	Flat irrigation channel on field boundary. No banks.	Unsuitable
24	Mostly dry with some patches of low level water underneath hedgerow.	Unsuitable
25	Shaded by hedgerow so there is no vegetation on the banks. Low water level.	Unsuitable
26	Shaded by hedgerow so there is no vegetation on the banks. Low water level	Unsuitable
27	Very small drain within a residential property which runs into the River Wyre. Completely exposed, very silty banks with no vegetation. Fluctuating brackish/saline water.	Unsuitable
28	Shaded by hedgerow so there is no vegetation on the banks.	Unsuitable
29	The water level was low, and the lower banks were of exposed mud and free of vegetation. The upper bank vegetation was dominated by common reed. A 25m stand of	Unsuitable

Waterbody	Comment	Suitable/unsuitable
	greater reedmace was present towards the southern edge of the landfill. The water channel passed through a culvert and underneath the road out on to the second former landfill field to the south	
30	Dry ditch underneath hedgerow.	Unsuitable
31	Dry ditch underneath hedgerow.	Unsuitable
32	Dry ditch underneath hedgerow.	Unsuitable
33	Compact soils with heavy shading from the hedgerow causing muddy lower banks (no vegetation). Some sections of the ditch were dry	Unsuitable
34	Ditch contained dense common reed with very little overhanging vegetation due to heavy shading	Unsuitable
35	Suitable vegetation at the toe of the bank despite some shading from common reed.	Suitable
36	Ditch leads from Garstang New Road south towards Grange Road. The pond is heavily shade by bramble on both sides of the banks. The ditch flows into a pond system within a small woodland. No vegetation on the banks and signs of predatory birds within woodland.	Unsuitable
37	Very exposed ditch which has been heavily poached.	Unsuitable
38	Dry ditch underneath hedgerow.	Unsuitable

ANNEX B – DRAWINGS



© Crown copyright and database rights 2018 Ordnance Survey 100030649. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.

0 300 600m
1:15 000

- KEY:**
- Draft Order Limits
 - Water vole Survey Area
 - Watercourses

Rev	Status	Rev. Date	Purpose of revision	Drawn	Checked	Approved
0	S8	OCT18	S8 - DCO SUBMISSION	JN	KB	NH



Client

Project **A585 WINDY HARBOUR TO SKIPPOOL IMPROVEMENT SCHEME**

Drawing Title **ENVIRONMENTAL STATEMENT REGULATION 5(2)(a) WATER VOLE REPORT: WATER VOLE SURVEY AREA**

Status	Revision
S8 - DCO SUBMISSION	0
Scale 1:15 000 @ A3	Date OCT 2018
Drawn By J.NORMAN	
Checked By K.BURROWS	
Approved By N.HENDERSON	
PINS No. TR010035	FIGURE A8.8.1
Drawing number HE 000 Original Volume Location Title Issue Number	
HE548643-A585-EAC-SZ_GN_000-DR-L-3051	

Page Left Intentionally Blank