



Norfolk County Council

NORWICH WESTERN LINK ROAD

Interim Reptile Survey Report





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TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 70061370

OUR REF. NO. 70061370-09-02

DATE: APRIL 2020

WSP

62-64 Hills Road

Cambridge

CB2 1LA

Phone: +44 1223 558 050

Fax: +44 1223 558 051

WSP.com



QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2
Remarks	-		
Date	28/04/2020		
Prepared by	UKMCW003		
Checked by	UKHDS001		
Authorised by	UKARH003		
Project number	70061370		
Report number	70061370-09-02		



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1 INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1. The Norwich Western Link Road (NWL) is a highway scheme linking the A1270 Broadland Northway from its junction with the A1067 Fakenham Road to the A47 trunk road near Honingham.
- 1.1.2. The NWL, hereafter referred to as the Scheme, will comprise:
- Dualling the A1067 Fakenham Road westwards from its existing junction with the A1270 to a new roundabout located approximately 400m to the north west;
 - Construction of a new roundabout; and,
 - Constructing a dual carriageway link from the new roundabout to a new junction with the A47 near Honingham.
- 1.1.3. As part of a separate planned scheme, Highways England proposes to realign and dual the A47 from the existing roundabout at Easton to join the existing dual carriageway section at North Tuddenham. If that scheme proceeds, it is expected that Highways England will construct the Honingham junction and the Norwich Western Link will connect to the north-eastern side of that junction.
- 1.1.4. The Scheme will cross the River Wensum and its flood plain by means of a viaduct. The Scheme will include ancillary works such as provision for non-motorised users, necessary realignment of the local road network and the provision of environmental mitigation measures.
- 1.1.5. Following feasibility studies, six route options were presented at public consultations in 2018 and 2019. Route C was selected in July 2019, and the current alignment of Route C and the proposed road corridor is hereafter referred to as the 'Preferred Route'.

1.2 ECOLOGICAL BACKGROUND

- 1.2.1. A Desk Study (WSP UK Ltd., 2018A) and Phase 1 Habitat Survey (WSP UK Ltd., 2018B) of the Scheme was commissioned in 2018, to inform route options. The 2018 Desk Study was updated in March 2020 to include recent data relevant to the Preferred Route and so the 2018 report is not referenced further.
- 1.2.2. These surveys identified early stage ecological constraints associated with the area highlighted for the Scheme.
- 1.2.3. The requirement for a reptile survey followed the identification of suitable habitats with the potential to support reptile populations, that may be impacted by the Scheme. These habitats were identified following the Phase 1 Habitat Survey (WSP UK Ltd., 2018B) and comprised tussocky grassland, woodland, scrub, wetland, field margins and other boundary features such as ditches and hedgerows. It was therefore recommended that a reptile survey be undertaken to establish a sufficient baseline to inform impact assessment.
- 1.2.4. The initial Phase 1 Habitat Survey was undertaken in 2018 when multiple route options were being considered. The survey area considered at this time therefore covered a wider extent than what is relevant to the Scheme following the Preferred Route announcement. The Phase 1 Habitat Survey will be updated in 2020 in order to present a refined contemporary baseline relevant to the Scheme.

1.3 BRIEF AND OBJECTIVES

- 1.3.1. WSP UK Ltd was commissioned by Norfolk County Council to complete a comprehensive suite of reptile surveys, with the following objectives:
- Establish whether reptiles are present or likely absent within the Survey Area;
 - Determine, if present, which species are within the extent of the Survey Area and the distribution of these species; and,
 - Present the findings of the survey in a baseline report.
- 1.3.2. The findings of these objectives will be used to inform the impact assessment and proposed mitigation for all reptile species present across the Scheme. Details of the impact assessment and mitigation will be included within the Biodiversity Chapter of the Environmental Statement for the Scheme.

1.4 STUDY AND SURVEY AREA

- 1.4.1. An ecological Desk Study was completed in March 2020 to include recent data relevant to the Preferred Route. The Study Area for this was defined as a 2km radius of an updated Scheme Boundary (Appendix A).
- 1.4.2. The Survey Area in relation to reptiles comprised a 50m buffer of the Preferred Route. All suitable habitat identified as having potential to support reptile populations were surveyed. Survey Area extents are shown in Appendix B. Other areas were not surveyed due to access restrictions.
- 1.4.3. This report will be updated with additional survey information at the end of 2020. The update survey will include information regarding temporary areas for construction and access roads which were not yet defined at the time of initial survey, as well as areas where no access was achieved for the 2019 survey effort.

2 RELEVANT LEGISLATION

2.1 LEGAL COMPLIANCE

- 2.1.1. Native, widespread reptile species (common or viviparous lizard, adder, grass snake and slow worm) are partially protected under Schedule 5 of The Wildlife and Countryside Act (1981), under part of Section 9(1) and all of Section 9(5). As such it is an offence to:
- 'Intentionally or recklessly kill or injure' an individual of these species; or
 - 'Sell, offer or expose for sale, or [have in] possession or transport for the purpose of sale, any live or dead [individual] or any part of, or anything derived from' an individual of these species'.
- 2.1.2. All species of reptile are also listed as a Species of Principal Importance (SPI) for the Conservation of Biodiversity in England in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Under Section 40 of the NERC Act (2006) public bodies, including local planning authorities have a duty to have regard for SPI when carrying out their functions, including determining planning applications.

3 METHODS

3.1 OVERVIEW

- 3.1.1. The reptile survey was completed between September and mid-October 2019, with reference to the Design Manual for Roads and Bridges (Highways England, 2019), Herpetofauna Workers' Manual (Gent & Gibson, 2003) and the methodology contained within Froglife's Reptile Survey Advice Sheet 10 (Froglife, 1999).
- 3.1.2. All reptile records collected during the 2019 reptile survey period will be submitted to Norfolk Biodiversity Information Service (NBIS) in a timely manner.

3.2 DESK STUDY

- 3.2.1. An ecological desk study was completed in March 2020 to include recent data relevant to the Preferred Route. Records of any notable or legally protected species, including reptiles, from within a 2km radius of an updated Scheme Boundary (Appendix A) were requested from NBIS.

3.3 REPTILE PRESENCE/LIKELY ABSENCE SURVEY

- 3.3.1. The survey comprised seven visits, each incorporating two elements:
- Survey of artificial refugia; and,
 - Visual observation of habitats and natural refugia present.
- 3.3.2. 370 refugia¹ were installed within suitable habitat on the 14th August 2019 and allowed to bed down for two weeks prior to the beginning of the survey visits.
- 3.3.3. The DMRB (Highways England, 2019) advises that a mixture of materials should be used as refugia and where possible this should include the use of corrugated metal. Following this guidance felt, corrugated metal and corrugated bitumen cut into 0.5mx0.5m were used as artificial refugia. Refugia were sited in suitable basking spots, close to cover, within habitat parcels identified to provide suitable conditions for reptiles.
- 3.3.4. Suitable reptile habitat totalled approximately 3200m of linear features and 4 acres of tussocky grassland; by using 370 refugia the density exceeded the minimum density as recommended by Froglife Advice Sheet 10 – 'Reptile Survey' (Froglife, 1999). This guidance states the number of tins used 'will depend on many factors, such as likelihood of disturbance, size of site and what the survey is attempting to achieve' and recommends a minimum of 5-10 refugia per hectare for 'general survey purposes'.
- 3.3.5. The Froglife guidance forms the current, recognised, good survey practice. However, it should be noted that it is not specifically designed for use in demonstrating absence of reptiles from a

¹ Artificial refugia are used to assist with the detection of reptiles within suitable habitat. The materials warm up and retain heat, and therefore are attractive to basking reptiles. The settling in period allows favourable conditions i.e. suitable humidity and temperature gradient to develop and for reptiles present within the habitat to become aware of the refugia.

development site, rather the focus is on identifying key reptile sites and increasing the likelihood of recording reptiles.

- 3.3.6. A compromise between the guidelines has been sought, with professional interpretation applied to tailor the survey design to the habitats present within the Survey Area. Sufficient refugia were deployed to determine presence/absence from the various parcels of suitable habitat, with a greater density of refugia than recommended within Froglife guidance used in order to increase confidence in results. The location of each refugia was recorded and is shown on Appendix B.
- 3.3.7. Reptiles are ectothermic animals, deriving their body heat from the external environment. Therefore, the timing of the survey visits was dictated by weather conditions. Surveys were completed within the appropriate season (March-October) and within the appropriate ambient air temperature range (10-18°C). As far as possible, surveys were undertaken on sunny days with low cloud cover and little wind to maximise the probability of recording reptiles, should they be present; where ambient air temperatures were towards the upper end of the temperature range, days of higher cloud cover were targeted.

3.4 DATES OF SURVEY AND PERSONNEL

The reptile surveys were led by ecologists with extensive reptile survey experience and a strong understanding of the ecology of native reptile species.

Surveys were completed on the following dates:

- 3rd September 2019;
- 10th September 2019;
- 13th September 2019;
- 17th September 2019;
- 30th September 2019;
- 2nd October 2019; and
- 10th October 2019.

3.5 NOTES AND LIMITATIONS

- 3.5.1. No access was granted by landowners to refugia 291-300, 321-330 and 341-360 for the survey on the 2nd October 2019. This number only represents 11% of the total refugia deployed and only one reptile was identified within these refugia on other survey visits. This limitation is not considered to impact the interpretation of the results.
- 3.5.2. On the 30th September 2019 survey it was found that refugia 151-190 had been covered by soil due to agricultural activity. These refugia were removed from the soil and re-deployed closer to the field margin. No reptiles were identified within the section of the Survey Area and neighbouring refugia were undamaged. This limitation is not considered to impact the interpretation of the results.
- 3.5.3. On the 10th October 2019 survey it was discovered that the land containing refugia 61-85 was severely flooded and no access was possible. This is not considered to place limitations upon the interpretation of results as it is highly unlikely that reptiles would be using the flooded land parcel.
- 3.5.4. The survey of the 2nd October began when the temperature was 9°C. This is 1°C outside of the ideal temperature range for reptile surveys (10-18°C), however, this is not expected to place limitations on the interpretation of results as the temperature rose to 11°C during the survey and the weather conditions were bright with sunshine on the day.

4 RESULTS

4.1 OVERVIEW

- 4.1.1. Two species of reptile were recorded during the presence/likely absence surveys; grass snake *Natrix helvetica* and slow worm *Anguis fragilis*.
- 4.1.2. No other reptile species were recorded during the survey and therefore, other species (common lizard *Zootoca vivipara*, common European adder *Vipera berus*, smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*) were considered to be likely absent from the Survey Area. The habitat present and locality of the Survey Area was not suitable for the latter two species, smooth snake and sand lizard.

4.2 DESK STUDY

- 4.2.1. The Desk Study did not return any records of reptile within 2km of the Scheme Boundary used for the data search. The Scheme Boundary and Desk Study Survey Area is included within (Appendix A).

4.3 RESULTS OF REPTILE SURVEY

- 4.3.1. One juvenile grass snake was basking beneath refugia 298 on the first survey visit. This refugia was located along a hedge that formed a boundary between an arable field to the south and grazing pasture to the north (Appendix B). No other records of grass snakes were identified within the Survey Area.
- 4.3.2. One female slow worm was basking beneath refugia 117 on the second survey visit. This refugia was in an arable field margin bordered by woodland to the north and east (Appendix B). No other records of slow worm were identified within the Survey Area.
- 4.3.3. Weather conditions during surveys ranged between 9°C and 19°C in temperature, with cloud cover of between 0 and 8 oktas; full details are included in Appendix C.

Table 4-1 – Survey Results

Survey visit	Date	Grass snake		Slow worm	
		Adult count	Juvenile/sub-adult count	Adult count	Juvenile/sub-adult count
1	03/09/19	-	1	-	-
2	10/09/19	-	-	1	-
3	13/09/19	-	-	-	-
4	17/09/19	-	-	-	-
5	30/09/19	-	-	-	-
6	02/09/19	-	-	-	-
7	10/09/19	-	-	-	-
Total count:		1		1	

5 REFERENCES

5.1 PROJECT REFERENCES

- WSP UK Ltd. (2018B). Phase 1 Habitat Survey. London
- WSP UK Ltd. (2018A). Ecological Desk Study. London

5.2 TECHNICAL REFERENCES

Froglife, 1999. Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. *Advice Sheet 10*.

Gent, A. & Gibson, S., 2003. *Herpetofauna Workers Manual*. Peterborough: Joint Nature Conservation Committee.

Highways England, 2019. LA 118 Biodiversity Design. *Design Manual for Roads and Bridges*, 10(Section 4).

Appendix A

MARCH 2020 DESK STUDY



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

Legend:

- 2km Study Area
- March 2020 Scheme Boundary



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Revision Details

By	Date	Suffix
Check		

Drawing Status

FINAL

Job Title

Norfolk County Council
Norwich Western Link

Drawing Title

March 2020 Desk Study

Scale at A1

1:15,000

Drawn

UKMCW003

Stage 1 Check

HS

Stage 2 Check

AH

Originated

MW

Date

25/03/2020

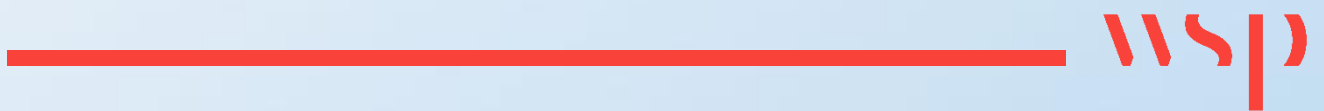


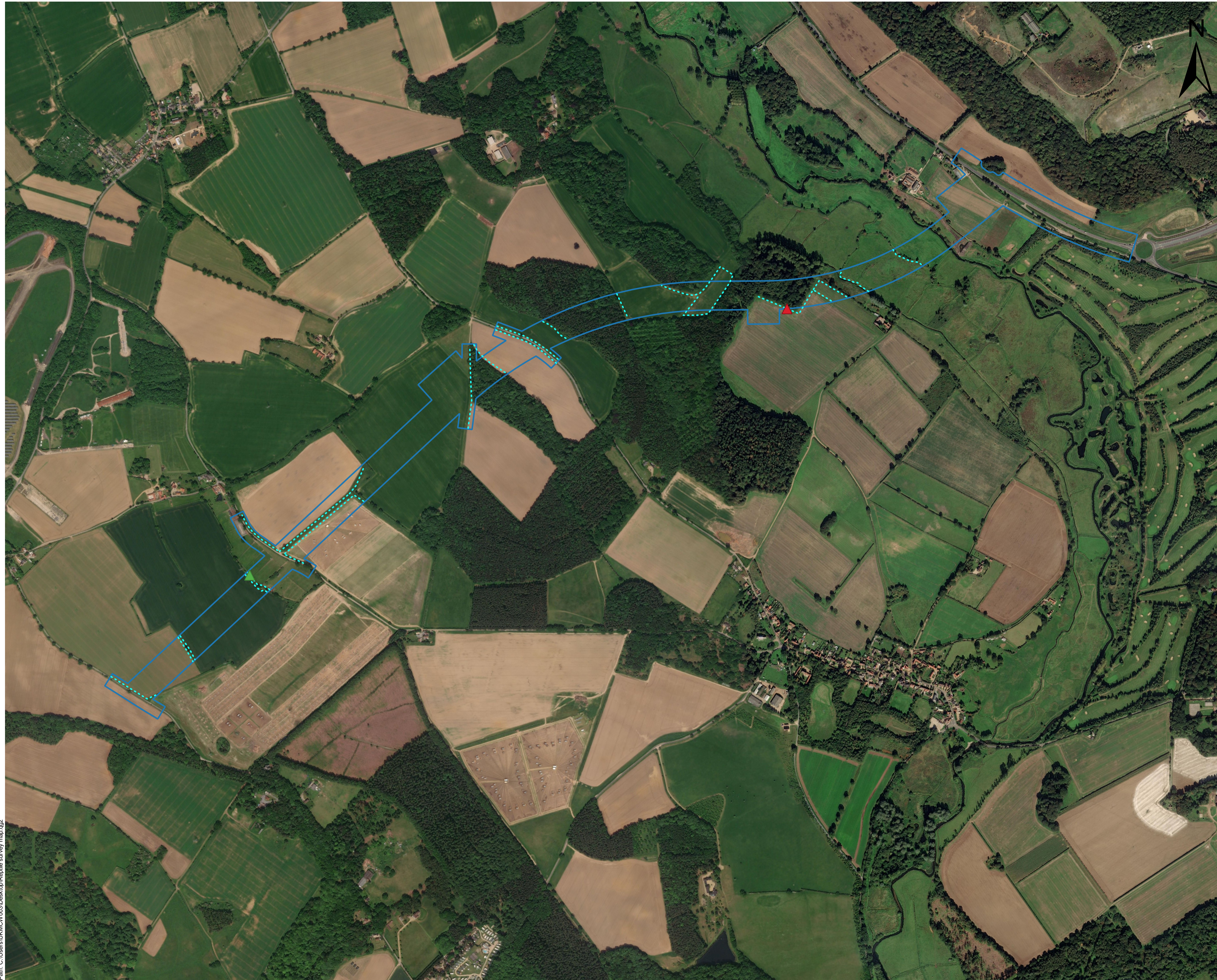
Drawing Number

70061370-09-02-0001

Appendix B

REPTILE SURVEY 2019





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- Legend:
- Survey Area
 - - - Reptile Refugia Locations
- Reptiles
- ▲ Grass Snake
 - ▲ Slow-worm

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Revision Details	By	Date	Suffix
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Drawing Status

FINAL

Job Title

**Norfolk County Council
Norwich Western Link**

Drawing Title

Reptile Survey Results

Scale at A1 **1:6,000**

Drawn	UKMCW003
Stage 1 Check	HS
Stage 2 Check	AH
Originated	MW
Date	25/03/2020



Drawing Number

70061370-09-02-0002

Appendix C

WEATHER CONDITIONS



Table C-1 – Weather Conditions During Surveys

Survey visit number		1	2	3	4	5	6	7
Date		03/09/19	10/09/19	13/09/19	17/09/19	30/09/19	02/10/19	10/10/19
Start	Time	08:15	08:45	07:45	08:00	07:30	10:30	10:00
	Air temp. (°C) (shade)	13	13	13	10	10	9	10
	Cloud cover (oktas)	3	8	6	4	1	3	1
	Wind speed	1	0	0	1	1	1-3	2
Finish	Time	10:15	10:40	09:45	10:20	09:30	12:00	13:00
	Air temp. (°C) (shade)	19	16	16	13	12	11	15
	Cloud cover (oktas)	4	7	3	5	1	4	3
	Wind speed	1	0	0	1	0	1-3	3
Description/ Notes		Dry and sunny with a slight breeze.	Warm, overcast and with sunny spells	Bright and sunny.	Previous day wet and rainy.	Dry and sunny	Recent rainfall before hand	Dry, warm and sunny



62-64 Hills Road
Cambridge
CB2 1LA

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