DISUSED RAILWAY CUTTING, HECKMONDWIKE, WEST YORKSHIRE

REPTILE SURVEY

A Report to: Vida-Development

Report No: RT-MME-128015-03

Date: June 2018

MIDDLEMARCH ENVIRONMENTAL

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	18/06/2018	Charlotte Richardson MSc (Ecological Consultant) and Archie Bird (Ecological Project Officer)	Colin Bundy BSc (Hons) MCIEEM (Associate Director)	Dr. Philip Fermor CEnv, MCIEEM (Managing Director)

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client’s brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 24 months from the date of survey. If works have not commenced by this date, it may be necessary to undertake an updated survey to assess any changes in the status of reptile species on site, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In April 2018, Vida-Development commissioned Middlemarch Environmental Ltd to undertake reptile surveys at Disused Railway Cutting, Heckmondwike, West Yorkshire. These surveys are required to inform a planning application associated with the construction of a residential housing estate (comprising 74 dwellings) which will be constructed onsite, with an associated access road, car parking and gardens. In addition, a communal play area will be constructed to the south and it is anticipated that approximately 45% of the site will remain undeveloped so that it can be used as public open space. The main area of development will occur in the centre of the site.

Reptile surveys were carried out between the 4th May 2018 and the 11th June 2018.

Desk study data was provided by WYES (West Yorkshire Ecology Service) and identified no previous records of reptiles within 1 km of the site.

Surveys were carried out using 60 artificial refugia (roofing tiles) strategically placed around the site and these, along with any naturally present refugia were checked a total of eight times over a 6-week period. No reptiles were recorded on site during these surveys, and it was concluded that no reptiles were present on site.

Following the results of the reptile surveys, the following recommendations have been made:

R1 No reptiles were recorded on site during the presence/absence survey, therefore no recommendations for further work are made. However, should any reptiles be discovered on site during the development, works should cease immediately and Natural England and / or an experienced ecologist should be contacted immediately to determine a way forward.

R2 If works do not commence by June 2020 then this survey should be updated to assess whether reptiles have colonized the site in the intervening period

CONTENTS

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

In April 2018, Vida-Development commissioned Middlemarch Environmental Ltd to undertake a reptile survey of the site of a proposed development at a Disused Railway Cutting in Heckmondwike, West Yorkshire. Under the current proposals, a residential housing estate (comprising 74 dwellings) will be constructed onsite, with an associated access road, car parking and gardens. In addition, a communal play area will be constructed to the south and it is anticipated that approximately 45% of the site will remain undeveloped so that it can be used as public open space.

Middlemarch Environmental Ltd has previously carried out a Preliminary Ecological Appraisal for Vida-Developments at this site in June 2017. The findings of this survey are detailed in Report RT-MME-124296.

The reptile survey visits were carried out between 4th May 2018 and 11th June 2018. In addition, Middlemarch Environmental Ltd has been commissioned to undertake a Preliminary Ecological Appraisal and Badger Survey at this site. The findings of these surveys are outlined in Reports RT-MME-128015-01 and -02, respectively.

All native reptile species receive protection under UK law and are capable of being material considerations in the planning process. Further information about the legislation that protects reptile species is provided in Appendix 1.

1.2 DEVELOPMENT SITE DESCRIPTION AND CONTEXT

The site is situated in an urban fringe location at the southern edge of Heckmondwike in West Yorkshire, at OS Grid Reference SE 2195 2313. The site is linear in nature, measures approximately 2.5 ha and comprises a largely overgrown railway cutting with steep embankments to the east and west. At the time of the survey, much of the land comprised a mosaic of rough semi-improved grassland, scattered scrub and tall ruderal vegetation, but areas of dense scrub, ephemeral/short perennial vegetation, non-ruderal vegetation and bare ground were also recorded. Bridges were present at the northern and southern ends of the site, and a stone retaining wall ran the length of the site at the base of the cutting. The base of the cutting (Spen Valley Ringway) was dominated by a variety of habitats, including ephemeral/short perennial vegetation, scattered scrub, semi-improved grassland and a tall ruderal/semi-improved grassland mosaic.

The site was bounded by a bridge/Brunswick Street to the north-west, with a further small section of the railway cutting beyond this and by a bridge/Walkley Lane to the south, beyond which there was a small industrial estate and an area of greenspace extending towards open countryside to the south. Residential and commercial properties were present to the west, north-east and south-east whilst to the east there was a small wooded area linking to areas of greenspace and further residential housing. The local landscape comprised the built-up areas of Heckmondwike and Dewsbury to the north, east and west and open countryside to the south, with the Spen River flowing just under 300 m to the south.

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
Outline Residential Use at Disused Railway Cutting, Heckmondwike – Site Plan (Drawing No: SK-01).	Vida Architects

Table 1.1: Documentation Provided by Client

2. METHODOLOGIES

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal undertaken in June 2017 (Report RT-MME-124296) an ecological desk study was undertaken. The consultee for the desk study was West Yorkshire Ecology Service (WYES).

Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by these organisations. Relevant reptile data are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data are not provided within this report.

2.2 SITE SUITABILITY ASSESSMENT

An assessment of the suitability of the site to support reptile species was undertaken, based on a review of habitat characteristics and other parameters known to influence reptile distribution. The following parameters were considered:

- Location of site in relation to species range of native reptiles;
- Site management and disturbance;
- Topography and aspect of site;
- Vegetation type and structure;
- Likely prey abundance;
- Presence of refugia and potential hibernation habitat;
- Egg-laying site potential (grass snake and sand lizard only); and,
- Connectivity to surrounding habitat of potential value to reptiles

The suitability assessment was used to design the route of survey transects for the presence/absence survey (see Section 2.3).

2.3 PRESENCE/ABSENCE SURVEY

A presence/absence survey for reptiles was undertaken in accordance with the best practice methodology detailed in the Herpetofauna Workers Manual (Gent and Gibson, 2003). This consisted of the following works:

- An initial assessment of the potential reptile habitat characteristics was undertaken, in order to identify features and habitats of potential value to reptile species.
- Survey transects through the site were identified to ensure all suitable habitats were covered by the survey.
- Checks of any natural refugia present within the survey area, such as log piles or rubble piles, were undertaken.
- A series of artificial refugia were installed within the site to facilitate detection of reptiles (further detailed below).
- Seven survey visits to the site were undertaken to inspect natural and artificial refugia in suitable weather conditions.

60 artificial survey refugia were installed within the site during the first survey visit. These refugia consisted of squares of roofing felt approximately 500 mm x 500 mm.

Reptiles are ectotherms, deriving their body heat from the external environment. Therefore, the timing of the survey visits was dictated by the time of year and weather conditions. Where possible, surveys were undertaken on warm sunny days with little cloud cover and wind to maximise the probability of recording reptiles within the site. Optimal weather conditions for undertaking refugia checks are outlined in the Herpetofauna Workers Manual, and are summarised in Table 2.1.

Parameter	Value
Temperature	9 - 17° C
Sunshine	Preferable
Cloud	Little or None
Wind	Low/None

Table 2.1: Suitable Weather Conditions for Reptile Surveys

2.4 ASSESSMENT OF SITE IMPORTANCE FOR REPTILES

Current best practice guidance recognises that undertaking detailed population assessments for reptile species is difficult, as the number of survey visits required to give an accurate assessment is prohibitive for the majority of projects.

It is desirable, however, to attempt to judge the overall importance of the survey site for reptiles. In order to provide a basic assessment of site importance, the results of the survey were analysed in the context of Froglife Advice Sheet 10 - Survey Assessment: Key Reptile Sites (Froglife, 1999). This provides a simple methodology for assessing the value of a site to reptile species, based upon the number of species recorded on site and the peak adult count for each species per hectare, when refugia are installed at a density of up to 10 per hectare.

The guidelines for assessing the value of the site to reptile species are summarised in Table 2.2.

Reptile Species	Low Population *Score 1*	Good Population *Score 2*	Exceptional Population *Score 3*
Adder	<5 individuals/ha	5-10 individuals/ha	>10 individuals/ha
Grass snake	<5 individuals/ha	5-10 individuals/ha	>10 individuals/ha
Common lizard	<5 individuals/ha	5-20 individuals/ha	>20 individuals/ha
Slow worm	<5 individuals/ha	5-20 individuals/ha	>20 individuals/ha

Table 2.2: Key Reptile Site Population Class Assessment and Scoring Criteria

Froglife define a Key Reptile Site as one that meets any of the following criteria:

1. Site supports at least three reptile species;
2. Site supports two snake species;
3. Site supports an 'exceptional population' of one species (see Table 2.2);
4. Site supports an assemblage of species scoring at least 4 (see Table 2.2); or,
5. Site does not satisfy Points 1-4 but is of particular regional importance due to local rarity.

Sites that support populations of either smooth snake or sand lizard are also considered to be Key Reptile Sites.

3. DESK STUDY

3.1 BIOLOGICAL RECORDS

No desk study records of reptile species were identified within a 1 km radius of the survey area. However, during both the original and update Preliminary Ecological Appraisals (Reports RT-MME- 124296 and RT-MME-128-15-01, respectively), the site was considered to provide potential foraging, basking and sheltering opportunities for reptile species

4. RESULTS

4.1 INTRODUCTION

The reptile habitat assessment and presence/absence surveys were undertaken between 4th May 2018 and 11th June 2018 by Charlotte Richardson MSc (Ecological Consultant) and Archie Bird (Ecological Project Officer).

4.2 SURVEY CONSTRAINTS

During the multiple surveys a number of artificial refugia were unable to be checked due to the changes in the site through the growth of vegetation on site. The changes in the time of year led to some of these roofing tiles being lost in dense scrub overgrowth and a number of tiles were suspected to have been removed by members of the public. However, this was only a small proportion of the total tiles and was not considered to have hindered a valid overall assessment of the reptile population.

4.3 SITE SUITABILITY ASSESSMENT

The habitat characteristics of the site with regard to suitability to support reptile species are summarised in Table 4.1. Photographs of the habitats present on site are provided in Chapter 8

Reptile Habitat Characteristic	Description
Location of site in relation to species range of native reptiles	The site is situated within the known distribution range of adder *Vipera berus*, common lizard *Zootoca vivipara*, grass snake *Natrix natrix* and slow-worm *Anguis fragilis*.
Site management and disturbance	The majority of the site (with particular reference to the grassland, scrub and tall ruderal habitats) was largely unmanaged at the time of the survey, but evidence of potential burning was noted in small pockets towards the center of the north-eastern embankment. This has meant that the vegetation in these areas is relatively sparse and short.
Topography and aspect of site	The site has varying aspects for basking reptiles, as north and south facing slopes occupy the majority of the survey area, whilst flat areas are present at the base of the cutting. The topography of the site is considered good for reptiles.
Vegetation type and structure	The site is dominated by unmanaged semi-improved grassland, and this was considered to provide potential basking and foraging opportunities for reptiles. Pockets of scrub and tall ruderal vegetation are also present onsite, particularly along the northern and western boundaries, and these were considered to provide additional foraging and sheltering opportunities. Due to its short nature, the ephemeral/short perennial habitat along the north-eastern slope was also deemed to provide potential basking opportunities for reptiles.
Likely prey abundance	The site contains a range of habitats including mature grasslands which support an abundance of invertebrate life, including a recorded abundant population of ashy mining bees *Andrena cineraria*. During previous surveys the site was also witnessed to be frequently visited by a number of domestic cats, indicating that small mammals are potentially present as prey for any reptiles that may be on site.
Presence of refugia and potential hibernation habitat	The site not only provides area of exposed bare earth, including bare rock and areas of track ballast, but also contains a large number of artificial refugia and potential hibernation in the form of rubble and general waste scattered through the site. This included old mattresses, construction materials such as old laminate flooring and a number of car tyres.
Egg-laying site potential (grass snake and sand lizard only)	The site does contain a number of small compost piles to the northern and south-western boundaries where local residents have left grass cutting and garden waste on the edge of the site.
Connectivity to surrounding habitat of potential value to reptiles	To the north of the site lies a deciduous woodland used by dogwalkers with recreational grounds further north. These areas provide potential foraging habitat yet are not dense for cover and are considered to hold less potential than the site itself. The remainder of the site does not border any potentially good habitat in any other direction as other areas are bordered by urban residential and industrial areas. .

Table 4.1: Summary of Reptile Habitat Characteristics

It should be noted that the presence of good quality reptile habitat (e.g. habitat providing features of value to reptiles) does not confirm that reptiles will be present at the site, just as the presence of low quality habitat does not confirm that reptiles will be absent.

4.4 PRESENCE / ABSENCE SURVEY

Weather conditions at the time of each of the survey visits are presented in Table 4.2.

Date/Time	Parameter	Cloud cover (%)	Air temperature (°C)	Precipitation	Wind speed (F)
04.05.18*	Preceding survey	Dry and Sunny			
13:30	During survey	80	15	None	F1
23.05.18	Preceding survey	Dry and Overcast			
10:00	During survey	30	13	None	F1
29.05.18	Preceding survey	Dry and sunny			
10:00	During survey	100	17	None	F1
30.05.18	Preceding survey	Overcast with Some Light Showers			
11:00	During survey	40	15	Light Showers	F0
05.06.18	Preceding survey	Sunny spells			
11:00	During survey	60	15	None	F0
06.06.18	Preceding survey	Sunny spells			
10:30	During survey	60	17	None	F1
08.06.18	Preceding survey	Sunny spells			
10:45	During survey	90	14	None	F0 - F1
11.06.18	Preceding survey	Overcast and Warm			
10:30	During survey	90	17	None	F0
*Artificial refugia set out on site					

Table 4.2: Weather Conditions During Survey Visits

The findings of the presence/absence survey are detailed in Table 4.3. The location of reptile survey transects and any reptiles recorded on site are plotted on Drawing C128015-03-01 in Chapter 7.

Visit	Date	Common Lizard	Slow-worm	Grass Snake	Adder	Smooth Snake	Sand Lizard
1	04.05.18	×	×	×	×	×	×
2	23.05.18	×	×	×	×	×	×
3	29.05.18	×	×	×	×	×	×
4	30.05.18	×	×	×	×	×	×
5	05.06.18	×	×	×	×	×	×
6	06.06.18	×	×	×	×	×	×
7	08.06.18	×	×	×	×	×	×
8	11.06.18	×	×	×	×	×	×
Key ♂: Male, ♀:Female, Juv – Juvenile							

Table 4.3: Presence/Absence Survey Results

No reptile species were recorded on site during the surveys.

5. DISCUSSION AND CONCLUSIONS

5.1 SUMMARY OF SITE PROPOSALS

Under the current proposals, a residential housing estate (comprising 74 dwellings) will be constructed onsite, with an associated access road, car parking and gardens. In addition, a communal play area will be constructed to the south and it is anticipated that approximately 45% of the site will remain undeveloped so that it can be used as public open space. Most construction of buildings and disruption to natural features on site will occur in the centre of the site and site boundaries will for the most part retain or be re-established as grassland, scrub or woodland areas.

5.2 HABITAT ASSESSMENT

The site is within the areas of known distribution for four British reptile species, and has potentially valuable habitat throughout the site in the form of unmanaged grasslands, scrub and tall ruderal areas. The site also contains an abundance of good basking areas including; north and south facing slopes, areas of bare earth and rock as well as existing artificial refugia and hibernacula including construction rubble. The site also has an abundance of invertebrate life and indicators suggest a potential presence of small mammals providing potential prey. The site is adjoined on the north-eastern boundary to an area of deciduous woodland with recreational grasslands beyond provide further foraging and commuting habitats.

5.3 FINDINGS OF REPTILE SURVEY AND KEY REPTILE SITE ASSESSMENT

No reptile species were recorded on site during the surveys.

5.4 CONCLUSIONS AND SUMMARY OF POTENTIAL IMPACTS

As no reptile species were recorded on site, the proposed development is not considered to have an impact with regards to reptiles.

6. RECOMMENDATIONS

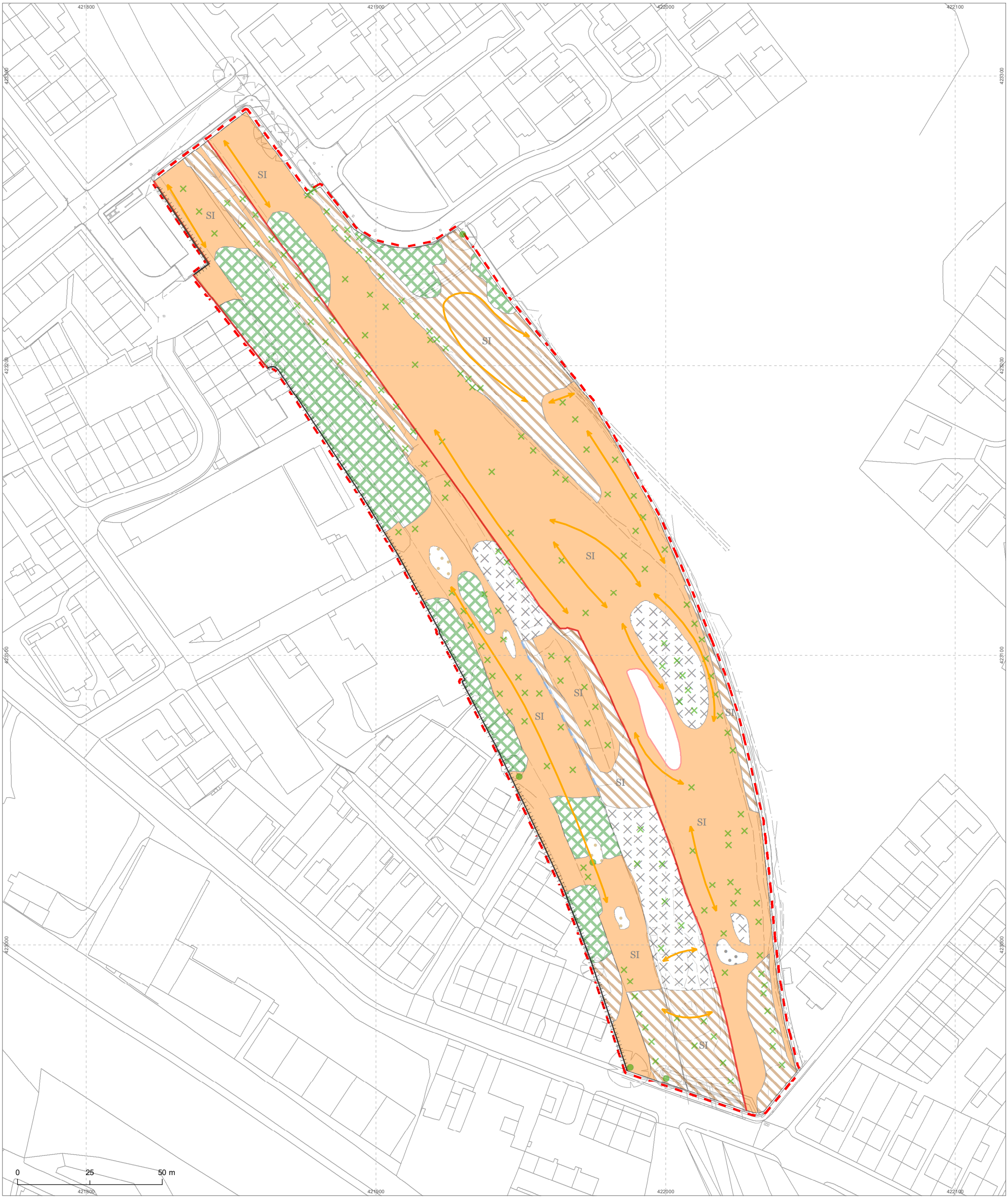
All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

R1 No reptiles were recorded on site during the presence/absence survey, therefore no recommendations for further work are made. However, should any reptiles be discovered on site during the development, works should cease immediately and Natural England and / or an experienced ecologist should be contacted immediately to determine a way forward.

R2 If works do not commence by June 2020 then this survey should be updated to assess whether reptiles have colonized the site in the intervening period

7. DRAWINGS

Drawing C128015-03-01 – Survey Transects and Findings



Legend

- Reptile mat transect

PH1 habitat survey:

- Scattered broad-leaved tree
- Scattered scrub
- Wall
- Fence
- Dry ditch
- Bare ground
- Building
- Dense scrub
- Ephemeral/short perennial
- Hardstanding
- SI — Neutral semi-improved grassland
- Non-ruderal
- Introduced shrub
- Other habitat
- Tall ruderal
- SI — Tall ruderal and semi-improved grassland
- Site boundary

N

Project	Disused Railway Cutting, Heckmondwike
Drawing	Reptile Mat Location
Client	Vida-Development
Drawing Number	C128015-03-01
Revision	00
Scale @ A3	1:1250
Date	May 2018
Approved By	CR
Drawn By	CD

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C128015-03-01

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The Highways Agency, Scottish Executive, Welsh Assembly Government and The Department For Regional Development. (2005). 'Design Manual For Roads And Bridges: Nature Conservation Advice in Relation to Reptiles and Roads'.

Middlemarch Environmental Ltd (2017). *Disused Railway Curring, Heckmondwike, West Yorkshire: Preliminary Ecological Appraisal.* Report RT-MME-124296.

National Amphibian and Reptile Recording Scheme. Reptile Methods and Protocols. Available: http://www.narrs.org.uk

Wildlife & Countryside Act (1981) As Amended.

APPENDIX 1

LEGISLATION

All of the UK's native reptiles are protected by law. The two rarest species – sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) – benefit from the greatest protection.

Common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix natrix*) are protected under the Wildlife and Countryside Act 1981 (as amended) from intentional killing or injuring.

Sand lizard and smooth snake are protected under The Conservation of Habitats and Species Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended) which together make it illegal to kill, injure, capture, handle or disturb these animals. Places they use for breeding, resting, shelter and protection are protected from being damaged or destroyed. It is also illegal to obstruct these animals from using such areas.

All native reptile species are listed as Species of Principal Importance on the UK Post-2010 Biodiversity Framework (2012), and as such are material considerations in the planning process.

This is a simplified description of the legislation. In particular, the offences mentioned here may be absolute, intentional, deliberate or reckless. Note that where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.

The reader should refer to the original legislation for the definitive interpretation.