

EMAD - SITE VISIT REPORT

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1) SCHEME DETAILS

Scheme Name: A46 Ratcliffe on the Wreake Geotechnical (SB Off-slip)	Scheme No.: 569243
██	Design only?
Construction Start Date: 09/09/2019	Working Hours: Days

A defective earthwork on the A46 has been identified on a southbound off-slip (Inside) (Earthwork ID: 18353), comprising of two slipped sections.

The purpose of this scheme is to:

- Identify the likely cause of the defects
- Develop an understanding of the local geology, geomorphology, hydrology and hydrogeology in context with the surrounding area
- Identify any environmental constraints that may need to be considered in the development of a scheme
- Identify the requirement for any surveys that may be required within the defective section of the network
- Design remedial works and stabilise the earthworks.

Site walkover survey (Environmental and Topographical). Future works will include repair works on the earthwork and verge.

At this stage it is believed that the defect is likely caused by a shallow slip plane within the made ground. As a result, the remedial actions proposed at this stage include either granular replacement of the slipped material or soil nailing. At present, a topographical survey is required to aid in the design of potential remediation works and therefore vegetation clearance is also required.

2a) SITE VEGETATION

Broad Habitat Types	Present?	DAFOR	Impacted?	Notes* Further Surveys Required?
Mixed Plantation Woodland	Yes	Abundant	No	Unmanaged semi mature mixed woodland occurs along both the northbound on-slip and southbound off-slip. Areas of woodland adjacent to the slip roads are semi mature in age and feature ash, sycamore, oak, hawthorn, horse chestnut and scots pine. Ground flora vegetation contains a variety of species including broad-leaved dock, dandelion, ivy, oxeeye daisy and creeping buttercup. No impact anticipated by the scheme activities. No further assessment required.
Scrub	Yes	Frequent	Yes	Areas of bramble thicket occur adjacent to the slip roads.

				<p>These areas provide suitable nesting habitat for small birds. Minor scrub removal will be undertaken to the SB off-slip (if required) to complete the topographical survey.</p> <p>The soft estate should not be used for refueling or storage of materials and equipment.</p> <p>No impact anticipated by the scheme activities. No further assessment required.</p>
Mature Trees	Yes	Occasional	No	<p>A number of mature horse chestnut trees are found beyond the fence line along the southbound off slip (462637, 314368 to 462620, 314286). Some of these trees show BRP features however none of these will be affected during the topographical survey. If any excavations are to occur along the side of the slip road further assessment will be required.</p> <p>No impact anticipated by the scheme activities. No further assessment required.</p>
Semi-improved Grassland	Yes	Abundant	No	<p>Areas of semi-improved grassland occur around the junction and along the slip roads. These areas will not be impacted by the topographical survey. During future repair works these areas will be impacted.</p> <p>No impact anticipated by the scheme activities. No further assessment required.</p>
Tall Herb/Ruderal	Yes	Frequent	No	<p>Areas of tall ruderal occur around the junction and along the slip roads. These areas will not be impacted by the topographical survey. During future repair works these areas will be impacted.</p> <p>No impact anticipated by the scheme activities. No further assessment required.</p>
Watercourse/Ponds	Yes	Occasional	No	<p>A number of large ponds (possible fisheries) occur to the east of the SB junction. These were not assessed during the site visit.</p> <p>The River Wreake runs to the SE of the junction. This was not assessed during the site visit.</p> <p>No impact anticipated by the scheme activities. No further assessment required.</p>
Marsh/Swamp/Wet Grassland/Marginal	No	n/a	No	Not present.

Ephemeral/Short Perennial or Disturbed Ground	No	n/a	No	Not present.
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*Use JNCC Phase 1 Habitat Survey Habitat Criteria

2b) SITE VEGETATION

Does the Scheme involve soil stripping / excavations / complete vegetation loss?	Yes – vegetation clearance in order for a topographical survey to be completed.
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Species observed on site:

Woody plants

Ash	<i>Fraxinus excelsior</i>	Sycamore	<i>Acer pseudoplatanus</i>
Bramble	<i>Rubus fruticosus</i>	Hawthorn	<i>Crataegus monogyna</i>
Willow sp.	<i>Salix spp.</i>	Dog Rose	<i>Rosa canina</i>
Scots Pine	<i>Pinus sylvestris</i>	Oak	<i>Quercus robur</i>
Silver birch	<i>Betula pendula</i>	Blackthorn	<i>Prunus spinosa</i>
Holly	<i>Ilex aquifolium</i>	Elder	<i>Sambucus nigra</i>

Herbs

Ivy	<i>Hedera helix</i>	Dandelion	<i>Taraxacum officinale</i>
Nettle	<i>Urtica dioica</i>	Ribwort plantain	<i>Plantago lanceolata</i>
Mugwort	<i>Artemisia vulgaris</i>	Oxeye daisy	<i>Leucanthemum vulgare</i>
Broad-leaved dock	<i>Rumex obtusifolius</i>	Creeping buttercup	<i>Ranunculus repens</i>

Grasses

Perennial rye-grass	<i>Lolium perenne</i>	Cock's foot	<i>Dactylis glomerata</i>
False oat-grass	<i>Arrhenatherum elatius</i>	Bent sp.	<i>Agrostis spp.</i>

3a) PROTECTED AND INVASIVE SPECIES

NBN Atlas search was undertaken alongside EnvIS and the following species have been recorded within 1km radius of the scheme extent.

Species	Records? Distance & Date	Suitable Habitat on Site?	Signs on Site?	Risk of Impacts*	Notes & Recommendations
Great Crested Newt (GCN)**	No	Yes – terrestrial habitat only	No	Negligible	No ponds were surveyed during the site visit as the works are currently a topographical survey. Suitable terrestrial habitat is immediately adjacent to the scheme. No impacts anticipated.
Reptiles**	Yes – NBN & EnvIS One Record of Grass Snake (463040, 314560 2016) One Record of Grass Snake (463000, 314000 1971)	No	No	Negligible	No suitable habitat was found on site during the site visit. Historical records occur beyond 420m from the SB off slip. Extensive vegetation clearance is not anticipated as part of the scheme works, however, some minor clearance may be required to facilitate access and visibility for the topographical survey. Given the current nature of works, it is not anticipated that there will be impacts on reptiles.
Nesting Birds	Yes – BTO & partners (various dates)	Yes	No	Negligible	A total of 53 bird species have been recorded within 1km of the scheme, four of which are schedule 1 protected under the Wildlife and Countryside Act 1981; fieldfare, kingfisher, quail and redwing. Suitable habitat is found adjacent to the scheme and along the slip roads in the form of mixed woodland and scrub. Under the current scope of works no extensive vegetation removal is required as the work consists of a topographical survey. However, minor vegetation clearance of scrub maybe required in order to complete the topographical survey. Currently the work falls outside of the main nesting bird season, as it is scheduled for September 2019 so no impacts are anticipated However, if this changes and is brought forward or delayed until after February 2020, a nesting bird check by a competent ecologist will be required.

Badger	Yes – three records (NBN 2013, 2015 and 2017)	Yes	No	Negligible	<p>A total of four records for setts (EnvIS).</p> <ol style="list-style-type: none"> 1. 462500, 314300 (1986) 2. 462400, 313400 (1986) 3. 462475, 313851 (2008) 4. 462334, 313297 (2011) <p>A total of ten records for roadkill (EnvIS).</p> <ol style="list-style-type: none"> 1. 462765, 314957 (2008) 2. 462452, 313833 (2008) 3. 462395, 313673 (2008) 4. 462304, 313437 (2008) 5. 462746, 314797 (2009) 6. 462794, 315044 (2010) 7. 462624, 314457 (2010) 8. 462310, 313282 (2011) 9. 462300, 313439 (2011) <p>A total of one record for foraging (EnvIS).</p> <ol style="list-style-type: none"> 1. 462595, 314239 (2007) <p>No setts were checked during the site visit. Further investigations of badger setts and records, in particular a sett located near to the northbound on slip (462500, 314300), will be required if excavations are to occur in future works around the slip roads.</p> <p>One record of badger foraging occurs within 1km of the scheme from 2007. This record occurs along the SB off slip however the location is unconfirmed.</p> <p>Areas surrounding the scheme provides suitable habitat and any linear belts of woodland may be used by transient animals. Work activities are currently scheduled for the day, if this changes then lighting should be hooded and pointed away from the soft estate.</p>
Bats	<p>Yes – NBN & EnvIS</p> <p>One record of common pipistrelle (462900, 314300 1990)</p> <p>One record of common pipistrelle (463000, 314400 1986)</p>	Yes	No	Negligible	<p>A number of mature horse chestnut trees are found beyond the fence line along the southbound off slip (462637, 314368 to 462620, 314286). Some of these trees show BRP features however none of these will be affected during the topographical survey. If any excavations are to occur along the side of the slip road further assessment will be required.</p> <p>Bat activity in the scheme area would be limited to foraging and commuting along wooded fragments scattered throughout. Work activities are currently scheduled for the day so no impacts are anticipated. If this changes, any bats using the area would be deleteriously affected by ingress from additional lighting, therefore lighting should</p>

					be hooded and directed away from the soft estate.
Water Vole	Yes – NBN One record (1981)	No	No	Negligible	No suitable habitat was present within or adjacent to the work areas. No impacts anticipated.
Otter	No	No	No	Negligible	No suitable habitat was present within or adjacent to the work areas. No impacts anticipated.
Freshwater Crayfish	No	No	No	Negligible	No suitable habitat was present within or adjacent to the work areas. No impacts anticipated.
Dormice	No	No	No	Negligible	No suitable habitat was present within or adjacent to the work areas. No impacts anticipated.
Other Mammals	Yes	Yes	No	Negligible	Historical records of rabbit and fox found throughout the 1km buffer zone. Works are not anticipated to impact these species as the work consists of a topographical survey. Habitat suitable for various small mammal species surround the scheme.
Invasive Species	No	No	No	Negligible	The scheme extent was checked for invasive species during the site visit and none were located.

*Negligible/Low/Moderate/High

**If yes complete section 3b

3b) GCN/Reptile habitat			
Type	Distance of Records from Works	Water Features?	Hibernation Features?
n/a			

4) DESIGNATED SITES				
Are there records of designated sites within 1km?		No		
Statutory or Non-Statutory?		n/a		
Are there hydrological connections to designated sites?		n/a		
Designation	Distance	Reason for Designation	Risk of Impacts*	Notes
n/a	n/a	n/a	n/a	n/a

*Negligible/Low/Moderate/High

5) WATERCOURSES – River Wreake							
Watercourse Location	Width	Depth	Flow Rate	Flow Direction	Bed Material/s	Bank Material/s	Turbidity
462804, 313935							
In-Stream Veg		Marginal Veg		Bankside Veg/Scrub/Trees		Signs of Pollution?	
Outfalls				Notes			

6) DRAINAGE FEATURES		
Type	Present?	Notes
Gullies	No	
Outfalls	No	
Ditch – mostly dry	No	
Ditch – mostly wet	No	

7) STRUCTURES					
Structure Name/Location	Type*	Over Water?	Impacted?	Bat Roost Potential	Notes*
n/a	n/a	n/a	n/a	n/a	n/a

8) TREES AND STABILITY:						
TPOs or Conservation Areas within the Scheme?				n/a		
If Y provide details				n/a		
<i>No removal of trees or hedgerows anticipated.</i>						
Tree/Hedge Location	Species	Hazards / Stability Impacts?	RPZ Req?	Arb Inspect / F33 Req?	Initial BRP - F22 Req?	Further surveys? bat

9) EXISTING SIGNS OF POLLUTION / FLY-TIPPING / LITTER / ASBESTOS

Location	Type	Quantity	Within Water?	Distance from Water	Close to Outfall?	Notes
Throughout the scheme extent	Plastic bottles, food wrappings and general litter associated with road users	Occasional	No	n/a	No	Areas of woodland and grassland along the slip roads have litter on the banks.

10) ENVIRONMENTAL IMPACTS

Type	Risk of Impacts*	Temp/Perm	Site Notes
Noise	Negligible	Temporary	Environmental Health Organisation (EHO) should be informed where scheme will raise base line noise levels for residential areas.
Light	Negligible	n/a	Works carried out during the day.
Air Quality	Low	Temporary	Best practice required.
Landscape/Visual	Negligible	n/a	n/a

*Negligible/Low/Moderate/High (estimate from scope of works and site visit)

11) BIOSECURITY

Are there confirmed or suspected cases of ash dieback within 10km?	Yes
First confirmed case in 2015 in grid square reference SK61.	
Is there a GCN breeding pond within 250m?	No
Will a watercourse with signal crayfish records within 1km be entered?	No
Recommended Control Measures: Standard best practice applies for biosecurity measures, including ash dieback given the high proportion of ash on site.	

12) LOCAL RESIDENTS / BUSINESSES

Are there residential / commercial properties within 50m?	Yes
Property on Broome Lane approximately 38m from the SB off slip at Ratcliffe on the Wreake.	

13) SUMMARY OF CONSTRAINTS / RECOMMENDATIONS

Constraint	Risk Of Impact*	Recommendations	Seasonal Limitations**
Nesting birds	Negligible	<p>Extensive vegetation clearance works is not currently expected to occur, however, some minor vegetation clearance maybe required to facilitate access and visibility for the topographical survey.</p> <p>Works are currently scheduled to take place outside the main bird nesting season so impacts from minor vegetation clearance is thought unlikely.</p> <p>However, if this changes and is brought forward or delayed until after February 2020, a nesting bird check by a competent ecologist will be required immediately prior to, or within 24 hours, of clearance. If an active bird nest is found, a 5m exclusion zone should be implemented in which no works can take place until the young have fledged.</p> <p>Some species can breed all year round. Contractors should remain vigilant for active nests during the main construction period. If any are observed within the works area, the Overseeing Organisation should be contacted.</p>	<p>Bird nesting season is from March to August inclusive. Vegetation clearance within this time will entail pre-works nesting bird checks.</p>
Risk to commuting and foraging bats and badgers	Negligible	Hooded task lighting to be pointed away from the soft estate.	Bats active period: April to October inclusive.

*Negligible/Low/Moderate/High

**e.g. nesting birds March-September inclusive

14) SUMMARY OF FURTHER ACTIONS / SURVEYS / WATCHING BRIEFS / CONSULTATION

Type*	Season / Timing	Notifications Required
Nesting bird watching brief	March – August inclusive	Contractors ecologist to check for nesting birds prior to works (if vegetation clearance is required during main bird nesting season).

*e.g. bat emergence & re-entry/bat endoscope check/tree inspection/watching brief for reptiles/consultation with EA/tree stability watching brief/avoidance of works

15) OPTIMAL TIMING OF WORKS (DESIGN ONLY SCHEMES)	
Optimal Timing	To Avoid Risk of Impacts to
Vegetation clearance September-February	Nesting birds

16) ADDITIONAL INFORMATION	
Type (circle)	Link to Folder or File (leave blank if N/A)
Photos	See photographic plates
Target Notes	
Annotated Drawings/Maps	Appendix
Forms	

17) SURVEY LIMITATIONS	
Type	Notes
Expiry*	By their very nature, ecological surveys can only assess a site or particular species at a set point in time, thus providing a snapshot of the environment and not a definitive evaluation. Every effort has been taken to provide an accurate assessment of the habitats or species surveyed. However, presence and population sizes of species can change over time and therefore the accuracy of this report will be affected by time and seasonality constraints.
Accessibility / Visibility	
Seasonal	Seasonal constraints applied.
Other	
General	This assessment is based on desk and field investigations at the time of survey only. Many protected species are mobile/transient, volant and may move into/out of the area within a short space of time; vegetation and habitats are also likely to change seasonally and/or as a result of other environmental changes.

*usually 1 year from date of issue

Other Notes - Suggested Text for inclusion within Environmental Alert Form

A site visit was carried out by Kier Environment Team in July 2019. This bespoke report contains the preliminary ecological constraints and outline biological records for the site.

Designated sites

There are no designated sites found within 1km of the scheme.

Protected Species

Great crested newts

There are no historical records of great crested newt found within 1km of the scheme. No impacts are anticipated. No ponds were assessed during the site visit.

Common reptile species

There are two historical records of grass snake found within 1km of the scheme from 1971 and 2016. Records occur more than 400m for the SB off slip. No suitable habitat was located during the site visit. No impact anticipated due to the nature of works. If vegetation clearance is required it will only be very small scale clearance of scrub.

Nesting birds

A total of 53 bird species have been recorded within 1km of the scheme, four of which are schedule 1 listed under the Wildlife and Countryside Act 1981; fieldfare, kingfisher, quail and redwing.

Suitable habitat is found adjacent to the scheme and along the slip roads in the form of mixed woodland and scrub. Under the current scope of works no extensive vegetation clearance is required as the work consists of a topographical survey. However, minor vegetation clearance of scrub maybe required in order to complete the topographical survey. Currently the work falls outside of the main nesting bird season, September 2019. However, if this changes and is brought forward or delayed beyond February 2020, a nesting bird check by a competent ecologist will be required.

Badgers

Three historical records of badger found within 1km of the scheme from 2013, 2015 and 2017. A total of four badger setts have been identified within 1km of the scheme, two setts from 1986, one from 2008 and one from 2011. No setts were checked during the site visit. Further investigations of badger setts and records, in particular a sett located near to the northbound on slip (462500, 314300) will be required if excavations are to occur in future works around the slip roads.

A total of 9 badger roadkill records occur within 1km of the scheme from 2008, 2009, 2010 and 2011. One record of badger foraging occurs within 1km of the scheme from 2007. This record occurs along the SB off slip however the location is unconfirmed.

Areas surrounding the scheme provides suitable habitat and any linear belts of woodland may be used by transient animals. Work activities are currently scheduled for the day, so commuting badgers are unlikely to be disturbed. If this changes and work is required at night, then lighting should be hooded and pointed away from the soft estate.

Bats

Lots of records exist for bat species surrounding the scheme:

There is one historical record of daubentons within 1km of the scheme from 2013.

There are two historical records of noctule within 1km of the scheme from 2013.

There are nine historical records of common pipistrelle within 1km of the scheme from 1986, 2012 and 2013.

There are two historical records of soprano pipistrelle within 1km of the scheme from 2013.

There are five historical records of brown long-eared within 1km of the scheme from 2012 and 2013.

A number of mature horse chestnut trees are found beyond the fence line along the southbound off slip (462637, 314368 to 462620, 314286). Some of these trees show BRP features however none of these will be affected during the topographical survey. If any excavations are to occur along the side of the slip road further assessment will be required.

Site Visit Photographic Plates:



Plate 1: Top of the southbound off slip of the A46 at Ratcliffe on the Wreake.



Plate 2: Mature horse chestnut found along the SB off slip between 462637, 314368 and 462620, 314286.

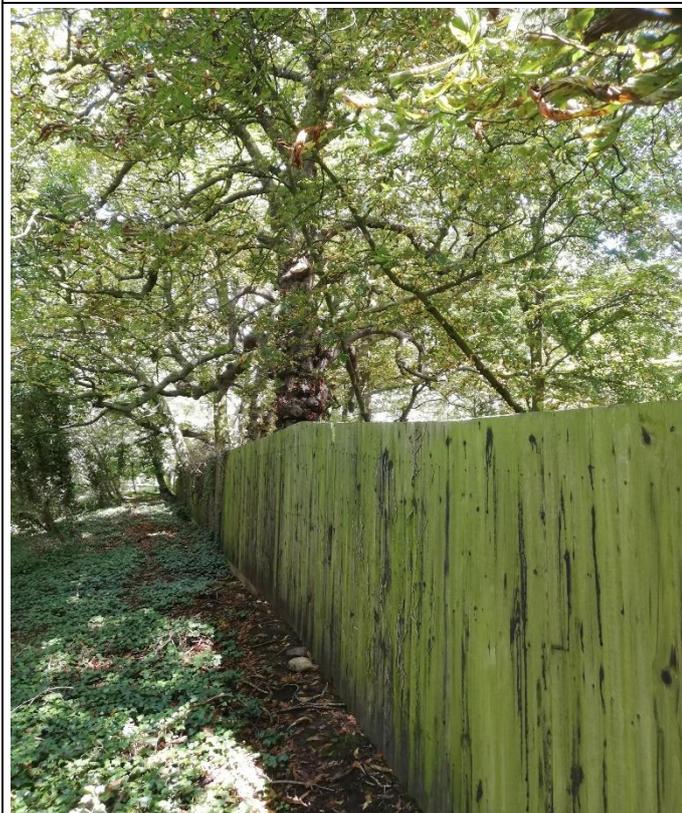


Plate 3: Mature horse chestnut found along the SB off slip between 462637, 314368 and 462620, 314286.



Plate 4: Bottom of the southbound off slip of the A46 at Ratcliffe on the Wreake.



Plate 5: The southbound off slip of the A46 at Ratcliffe on the Wreake.



Plate 6: The southbound off slip of the A46 at Ratcliffe on the Wreake.



Plate 7: Ivy carpet along the southbound off slip at Ratcliffe on the Wreake.

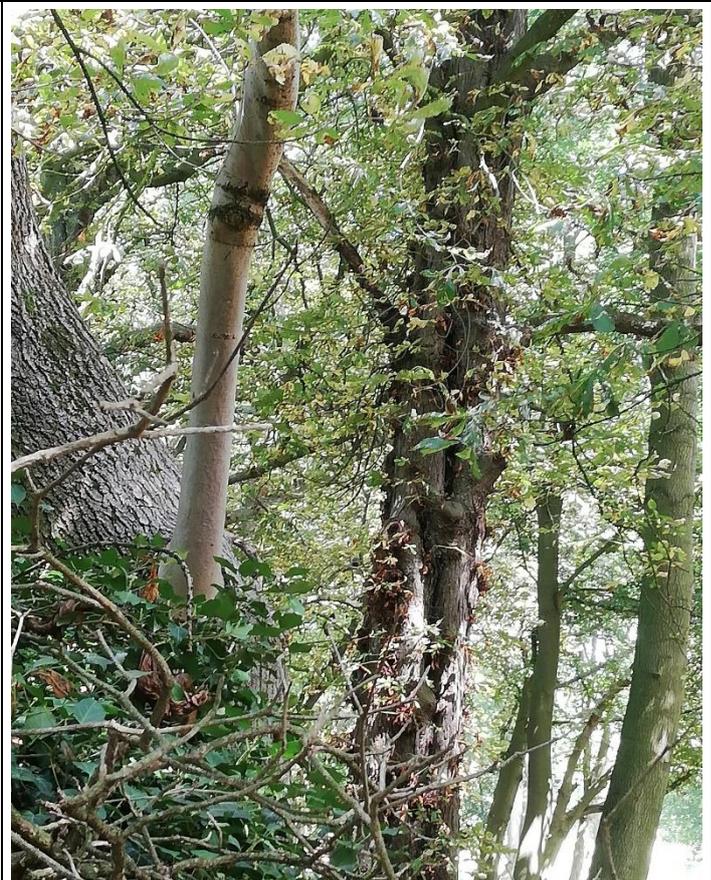


Plate 8: Mature horse chestnut with BRP features along the SB off slip between 462637, 314368 and 462620, 314286.

Figure 1. Environmental constraints.

