

**EMAD - SITE VISIT REPORT****1) SCHEME DETAILS**

Scheme Name: A45 Great Doddington to Wellingborough Geotechnical

Scheme No.: 569243

Design only? Y

Construction Start Date: September

Working Hours: Day

**Site location:** A defective section of the A45 east and westbound earthwork has been identified on the Highways Agency Geotechnical Data Management System (HAGDMS) on Earthworks 40983 and 40831, comprising of three slipped sections on cuttings on either side of the carriageway (one westbound, two eastbound).

**Scheme purpose:** 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.

At this stage it is believed that the defect is likely caused by a shallow slip plane within the surface geology. As a result, the remedial actions proposed include granular replacement of the slipped material. At present, a topographical survey is required to aid in the design of potential remediation works.

**Construction activities to be executed (On site only):** Site walkover survey (Environmental and Topographical).

**Construction activities to be executed (Off site only):** None

**2a) SITE VEGETATION**

Broad Habitat Types	Present?	DAFOR	Impacted?	Notes* Further Surveys Required?
Woodland – Broadleaved plantation	Y	D	Y (pruning only)	The scheme is dominated by linear flanks of broadleaved plantation woodland flanking agricultural land. Trees are semi-mature in age (<8" dbh) and even aged in closed stands ( <i>Plate 1</i> ), with deciduous canopy dominants consisting of cherry, field maple, ash, hawthorn and sycamore. In places, these form continuous shelter belts on the soft estate before grading into scattered scrub and thick bramble briar.  Established trees do not need to be removed – only localised branch trimming.
Scrub – scattered	Y	D	Y (pruning only)	Scattered hawthorn and blackthorn scrub grades to dominant bramble briar in middle sections EB and WB, which could not be accessed during the field survey ( <i>Plate 3</i> ). By virtue of the habitat type, scrub readily naturally regenerates from cutting.
Hedgerow – intact and defunct species poor (with trees)	Y	O	N	Linear tree lines run adjacent to the rear of the soft estate and are leggy and unmanaged, partitioned with post and rail fencing. Not impacted, no excavation work within 1.2m.

2a) SITE VEGETATION				
Broad Habitat Types	Present?	DAFOR	Impacted?	Notes* Further Surveys Required?
Mature Trees	N	-	-	No notable mature trees, although some more mature ash specimens high on the bank adjacent to the rugby ground.
Grassland: Semi-improved neutral	Y	F	Y	Semi-improved grassland grades into tall ruderal and bramble briar and woody scrub in places ( <i>Plate 4</i> ). Coarse grasses dominate the sward, with additional narrow strips of short statured grassland bordering filter drain media ( <i>Plate 2</i> ).  Limited and localised ground vegetation clearance required. Vegetation will regenerate naturally.
Tall Herb/Ruderal	Y	O	Y	Species poor tall ruderal vegetation transitions from grassland and scrub to woody vegetation cover.  Limited and localised ground vegetation clearance required. Vegetation will regenerate naturally.
Marsh/Swamp/ Wet Grassland/Marginal	N	-	-	Not observed on field surveys.
Watercourses / Ponds	N	-	-	No ponds or water-courses observed on field surveys. No wet ditches observed.
Ephemeral/Short Perennial or Disturbed Ground	N	-	-	Not present on field surveys.
Other				

\*Use JNCC Phase 1 Habitat Survey Habitat Criteria

2b) SITE VEGETATION	
Does the Scheme involve soil stripping / excavations / complete vegetation loss?	Limited and localised ground vegetation clearance required. Branch trimming.
<b>Woody Vegetation:</b>	
<ul style="list-style-type: none"> <li>• Apple (<i>Malus x domestica</i>)</li> <li>• Ash (<i>Fraxinus excelsior</i>)</li> <li>• Blackthorn (<i>Prunus spinosa</i>)</li> <li>• Common hawthorn (<i>Crataegus monogyna</i>)</li> <li>• Crab apple (<i>Malus sylvestris</i>)</li> <li>• English oak (<i>Quercus robur</i>)</li> <li>• Goat willow (<i>Salix caprea</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Dog rose (<i>Rosa canina</i>)</li> <li>• Silver birch (<i>Betula pendula</i>)</li> <li>• Sycamore (<i>Acer pseudoplatanus</i>)</li> <li>• Willow (<i>Salix sp.</i>)</li> <li>• Elder (<i>Sambucus nigra</i>)</li> <li>• Field maple (<i>Acer campestre</i>)</li> <li>• Hazel (<i>Corylus avellana</i>)</li> </ul>
<b>Tall Ruderal/Herbaceous:</b>	
<ul style="list-style-type: none"> <li>• Common nettle (<i>Urtica dioica</i>)</li> <li>• Bramble (<i>Rubus fruticosus agg.</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Great willowherb (<i>Epilobium hirsutum</i>)</li> </ul>

<b>Grasses:</b>	
<ul style="list-style-type: none"> <li>• False oat-grass (<i>Arrhenatherum elatius</i>)</li> <li>• Perennial rye grass (<i>Lolium perenne</i>)</li> <li>• Annual meadow grass (<i>Poa annua</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Yorkshire fog (<i>Holcus lanatus</i>)</li> <li>• Cocks foot (<i>Dactylis glomerata</i>)</li> <li>• Smooth meadow grass (<i>Poa pratensis</i>)</li> </ul>
<b>Forbs:</b>	
<ul style="list-style-type: none"> <li>• Common nettle (<i>Urtica dioica</i>)</li> <li>• Scarlet pimpernel (<i>Anagallis arvensis</i>)</li> <li>• Bird's foot trefoil (<i>Lotus corniculatus</i>)</li> <li>• Common knapweed (<i>Centaurea nigra</i>)</li> <li>• Mallow (<i>Malva sp.</i>)</li> <li>• Hogweed (<i>Heracleum sphondylium</i>)</li> <li>• Coltsfoot (<i>Tussilago farfara</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Great willowherb (<i>Epilobium hirsutum</i>)</li> <li>• Mugwort (<i>Artemisia vulgaris</i>)</li> <li>• Bristly ox-tongue (<i>Picris echioides</i>)</li> <li>• Sow thistle (<i>Sonchus sp.</i>)</li> <li>• Ribwort plantain (<i>Plantago lanceolata</i>)</li> <li>• Forget-me-not (<i>Myosotis sp.</i>)</li> </ul>

3a) PROTECTED AND INVASIVE SPECIES					
Species	Records? Distance & Date	Suitable Habitat on Site?	Signs on Site?	Risk of Impacts*	Notes & Recommendations
Badger	Yes, roadkill EB and WB verges (EnvIS, 1997 & 2011) and 1no. roadkill observed on site at approx. SP 87474 65213; sett 770m to east (EnvIS, 2012); sett 620m to west (Kier, 2017).	Yes	Yes	Low to negligible	<p>There are some historical records for badgers with the scheme extent along the A45, at SP872648 (EnvIS, 1997) and at A45 EB 180/1 (EnvIS, 2011). Sett with four entrances recorded 770m to the east at the roundabout (EnvIS, 2012). An active sett with 5no. burrows was identified in previous surveys by Kier (2017) at J11 (SP 86728 64089).</p> <p>Evident compacted and used animal pathways near the Wilby Lane structure (EB) were present on the verge, along with weathered badger roadkill carcass remnant (at SP 87474 65213). Not all areas were accessible and other rabbit burrows were evident along the embankments. The work does not involve excavation and no setts were found within 30m of proposed scheme extent.</p> <p>See recommendations and constraints.</p>
Bats	No	Yes – foraging and commuting only	No	Negligible	<p>No trees are scheduled for felling and structures are not impacted. Bat activity would likely be limited to foraging and commuting lines along the wooded belts fringing the carriageway. If works are scheduled during night-time hours outside of the hibernation period, excess lighting from construction activities could disrupt habitual</p>

3a) PROTECTED AND INVASIVE SPECIES					
Species	Records? Distance & Date	Suitable Habitat on Site?	Signs on Site?	Risk of Impacts*	Notes & Recommendations
					flight paths. Works currently planned for daytime.
Birds	Yes, various (NBN-Atlas)	Yes	Yes	Low to negligible	34 species have been recorded within 1km (NBN-Atlas). Bird assemblages are generally common garden bird associates and species associated with open farmland and marginal hedgerow habitats. Notable records include sparrowhawk, fieldfare and buzzard. Trees suitable for breeding birds will not be removed as part of the work. Tree cover should be retained where possible. At the current scheduling, works will be undertaken in September, outside of the traditional breeding bird season (March – August inclusive); this will significantly reduce the risk to this group.  See recommendations.
Freshwater Crayfish	No	No	No	Negligible	No records present within 1km. No suitable habitat. No impacts anticipated.
GCN** and amphibians	No	Yes – terrestrial habitat only	No	Negligible	No records within 1km. No known ponds within 250m so disturbance to GCN are not anticipated.
Hazel Dormice	No	No	No	Negligible	No records present within 1km. No suitable habitat. No impacts anticipated.
Reptiles**	No – but grass snake record 1.3km at SP876633 (Northants BRC, 2006).	Yes	No	Negligible	There are no historical records within 1km and no sightings were made in walkthroughs. In general, the lack of records, high proportion of shady tree cover, lack of a wet ditch system and no adjacent wetland habitats imparts suboptimal habitat. The tree roots, in-situ log and rubble piles present within the site bounds also provide some potential hibernating habitat for common amphibian and reptile species, but these are not to be disturbed.
Invasive Species	No	Yes	No	Negligible	There are no invasive or injurious weed records within the scheme footprint.
Other fauna	No	Yes	Yes	Low / negligible	Feeding remains found of fox at SP 87117 64737. Rabbit diggings found along the margins of the EB verge. Range of common insect species observed including ringlet, large white, burnet moth and common blue damselfly.
Otter / Water Vole	No	No	No	Negligible	There are no known recent records within 1km of the scheme. No impacts anticipated for these species.

\*Negligible/Low/Moderate/High

\*\*If yes complete section 3b

<b>3b)</b>			
<b>Type</b>	<b>Distance of Records from Works</b>	<b>Water Features?</b>	<b>Hibernation Features?</b>
No records of reptiles and GCN within 250m.			

<b>4) DESIGNATED SITES- see EMAD Screening Assessment form</b>				
Are there records of designated sites within 1km?		No		
Statutory or Non-Statutory?		n/a		
Are there hydrological connections to designated sites?		No		
<b>Designation</b>	<b>Distance</b>	<b>Reason for Designation</b>	<b>Risk of Impacts*</b>	<b>Notes</b>
NB: Upper Nene Gravel Pits SSSI / SPA 1.5km from scheme extent	<2km	Articles 4.1 and 4.2 of Directive 2009/147/EC (over-wintering birds)	Negligible	

\*Negligible/Low/Moderate/High

<b>5) WATERCOURSES – None present. N/A</b>
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<b>6) DRAINAGE FEATURES</b>		
<b>Type</b>	<b>Present?</b>	<b>Notes</b>
Gullies	No	
Outfalls	No	
Ditch – mostly dry	Yes	Filter drain
Ditch – mostly wet	No	

<b>7) STRUCTURES: Structures not impacted by works</b>				
<b>Structure Name/Location</b>	<b>Type*</b>	<b>Over Water?</b>	<b>Bat Roost Potential</b>	<b>Notes/ Action Required</b>
A45 // 180.10 // Wilby Road	Over-bridge (road)	No	Low	Surveyed in 2012.
A45 // 179.30 // Wilby Lane	Over-bridge (track)	No	Negligible	Surveyed in 2012.

<b>8) TREES AND STABILITY</b>	
<b>TPOs or Conservation Areas within the Scheme?</b>	No
Trees semi-mature in age. All trees to be retained.	

<b>9) EXISTING SIGNS OF POLLUTION / FLY-TIPPING / LITTER / ASBESTOS</b>						
Location	Type	Quantity	Within Water?	~Distance from Water	Close to Outfall?	Notes
Near laybys	Plastic rubbish	Locally frequent	No	n/a	No	The nature of the waste was not closely investigated. Contractors are asked to be vigilant with regards to standardised protocols for handling hazardous materials

<b>10) ENVIRONMENTAL IMPACTS</b>			
Type	Risk of Impacts*	Temp/Perm	Site Notes
Noise	Low	Temporary	Environmental Health Organisation (EHO) should be informed where scheme will raise base line noise levels for residential areas.
Light	Negligible	Temporary	Only applicable if tasking lighting is required for night-time works.
Air Quality	Low	Temporary	Best practice required
Landscape/Visual	Negligible	Temporary	Localised clearance on a minor scale that will quickly naturally regenerate.

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

<b>11) BIO-SECURITY-</b>	
Are there confirmed or suspected cases of ash dieback within 10km?	Yes
Present in zone of confirmed cases on 2017 map from Forestry Commission see <b>Error! Reference source not found.</b>	
No signs of ash dieback were recorded as part of site visit, but pole stage and self-set ash trees present and frequent.	
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.	

**12) LOCAL RESIDENTS / BUSINESSES**

Are there residential / commercial properties within 50m? Yes

Rugby football club

**13) SUMMARY OF CONSTRAINTS / RECOMMENDATIONS**

Constraint	Risk of Impact*	Recommendations	Seasonal Limitations**
Birds	Low to negligible	<p>Localised woody vegetation branch trimming works is currently scheduled to take place outside of the main bird nesting season in September. However, some species can breed all year round. Contractors should remain vigilant for active nests during clearance of trees and scrub. If any are observed within the works area, the Overseeing Organisation should be contacted.</p> <p>Should vegetation clearance fall within nesting season (March to August inclusive) then pre-works nesting bird checks will be required from a suitably qualified ECoW. This must be carried out no more than 24 hours prior to vegetation clearance. Should an active nest be identified during works, a suitable buffer zone (5m) is to be established.</p>	<p>Bird nesting season is from March to August inclusive. Vegetation clearance within this time will entail pre-works nesting bird checks.</p>
Badgers	Low to negligible	<p>Contractors should be aware of the potential for badger to be present within the verge side woodland through a Toolbox Talk. Works should temporarily stop if badger is observed and animals be allowed to move away freely.</p> <p>If a badger sett is found prior to, or during, vegetation clearance, works should stop immediately and HE Environmental Team consulted. A 20m exclusion zone in which no activity can take place should be clearly marked out.</p> <p>If applicable, night time task lighting should not be directed onto adjacent habitats. No vehicles should encroach onto the soft estate or machinery/equipment be stored there.</p>	<p>Badgers: active all year round. Badger breeding season is December to June inclusive with the most sensitive time being January to February.</p>

\*Negligible/Low/Moderate/High

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

<b>14) SUMMARY OF FURTHER ACTIONS / SURVEYS / WATCHING BRIEFS / CONSULTATION</b>		
<b>Type</b>	<b>Season / Timing</b>	<b>Notifications Required</b>
Toolbox Talk – badgers.	To all contractors immediately prior to commencement of works	Contractor to provide
Nesting bird watching brief*	March – August inclusive if required*	Contractors ecologist to check for nesting birds prior to works (if vegetation clearance is required during bird nesting season)

\* applies if vegetation clearance and branch trimming requires removal during the bird nesting season March-August inclusive.

<b>15) OPTIMAL TIMING OF WORKS (DESIGN ONLY SCHEMES)</b>	
<b>Optimal Timing</b>	<b>To Avoid Risk of Impacts to</b>
Vegetation clearance Dec-Feb	Foraging and commuting bat species
Vegetation clearance September - February	Nesting birds

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

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	Dense scrub and bramble briar constrained visible checks for animal burrows and some areas could not be accessed.
General	This assessment is based on desk and field investigations at the time of survey only. Many protected species are mobile/transient 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

#### Designated Sites

There are no designated sites within vicinity of the scheme but the Upper Nene Gravels Pits SPA SSSI is 1.5km away.

#### Protected Species

##### *Badgers*

There are some historical records for badgers with the scheme extent along the A45, at SP872648 (EnvIS, 1997) and at A45 EB 180/1 (EnvIS, 2011). Sett with four entrances recorded 770m to the east at the roundabout (EnvIS, 2012). An active sett with 5no. burrows was identified in previous surveys by Kier (2017) at J11 (SP 86728 64089).

Evident compacted and used animal pathways near the Wilby Lane structure (EB) were present on the verge, along with weathered badger roadkill carcass remnant (at SP 87474 65213). Not all areas were accessible and other rabbit burrows were evident along the embankments. The work does not involve excavation and no setts were found within 30m of proposed scheme extent.

##### *Bats (trees)*

No trees are scheduled for felling and structures are not impacted. Bat activity would likely be limited to foraging and commuting lines along the wooded belts fringing the carriageway. The integrity of these corridors will remain. If works are scheduled during night-time hours outside of the hibernation period, excess lighting from construction activities could disrupt habitual flight paths. Works currently planned for the day time.

##### *Nesting birds*

34 species have been recorded within 1km of (NBN-Atlas). Bird assemblages are generally common garden bird associates and species associated with open farmland and marginal hedgerow habitats. Notable records include sparrowhawk, fieldfare and buzzard. Trees suitable for breeding birds will not be removed as part of the work. Tree cover should be retained where possible. At the current scheduling, works will be undertaken in September,

outside of the traditional breeding bird season (March – August inclusive); this will significantly reduce the risk to this group.

*Water vole, otter, white clawed crayfish, dormice, GCN, invasive species*

No records present within 1km. No suitable habitat. No impacts anticipated.

*Common reptile species*

There are no historical records within 1km and no sightings were made in walkthroughs. In general, the lack of records, high proportion of shady tree cover, lack of a wet ditch system and no adjacent wetland habitats imparts suboptimal habitat. The tree roots, in-situ log and rubble piles present within the site bounds also provide some potential hibernating habitat for common amphibian and reptile species, but these are not to be disturbed.

*Common fauna*

Feeding remains found of fox at SP 87117 64737. Rabbit diggings found along the margins of the EB verge. Range of common insect species observed including ringlet, large white, burnet moth and common blue damselfly.

**Provided Required Actions are followed, no significant impact is expected**

### **Required Actions**

*General*

- Night-time lighting has the potential to disturb commuting and foraging routes of nocturnal species. If required, any task lighting used should be hooded and directed away from the soft estate. If badgers are found to be present by the carriageway/verge-side, works (particularly moving vehicles) should continue with caution.
- Contractors to be vigilant and a toolbox talk given to cover risks associated with badgers.
- Localised rubbish and other wastes to the rear of laybys on the north and southbound. Contractors are asked to be vigilant with regard to handling any hazardous materials.
- Report any sightings of protected species to Highways England Environment / Assets Team to update their records.
- The soft estate will not be used for parking or storage of machinery.

### **Species-Specific Actions**

*Nesting birds:*

Localised woody vegetation branch trimming works is currently scheduled to take place outside of the main bird nesting season in September. However, some species can breed all year round. Contractors should remain vigilant for active nests during clearance of trees and scrub. If any are observed within the works area, the Overseeing Organisation should be contacted.

Should vegetation clearance fall within nesting season (March to August inclusive) then pre-works nesting bird checks will be required from a suitably qualified ECoW. This must be carried out no more than 24 hours prior to vegetation clearance. Should an active nest be identified during works, a suitable buffer zone (5m) is to be established. Within areas of dense bramble briar and scrub, where visibility is limited, it is recommended that the ecologist continues to check for nests as vegetation is removed and accessibility improves during cutting.

*Badger*

Contractors should be aware of the potential for badger to be present within the verge side woodland through a Toolbox Talk. Works should temporarily stop if badger is observed and animals be allowed to move away freely.

If a badger sett is found prior to, or during, vegetation clearance, works should stop immediately and HE Environmental Team consulted. A 20m exclusion zone in which no activity can take place should be clearly marked out.

If applicable, night time task lighting should not be directed onto adjacent habitats. No vehicles should encroach onto the soft estate or machinery/equipment be stored there.

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## Photographic Plates



*Plate 1:* Broadleaved plantation woodland populated by semi-mature trees dominate the verges.



*Plate 2:* Narrow 1m coarse grassland sward with bird's foot trefoil, grading to filter drain media and surrounding broadleaved plantation woodland.



*Plate 3: Thick bramble briar grading to scattered blackthorn scrub on the EB verge.*



*Plate 4: Self-set ash tree and scattered thorn scrub overlying semi-improved grassland on the WB verge.*

**Appendix I: Constraints map of historic species records from NBN and EnvIS, with site observations made during the walkover.**



