

ENVIRONMENTAL ALERT FORM
To be completed by the Design Engineer

Select and fill in spaces to make your assessment. Please submit a further page with extra information if needed.

	Kier Design Team Lead	HE SPM/Sponsor	Project Number (HE PIN and Kier WO number):	
Scheme Name & Location (inc. marker posts and/or Grid Reference):	A46 NB SB Sixhills Geotech – Water Erosion		Date form submitted:	16/09/2019
			EAF required by Date:	24/10/2019
	Sixhills Grid Reference:		Design Completion Date:	TBC
CRITICAL!	Start: 464528, 322034 End: 464554, 322237			
Expected project cost and budget type:	Cost Estimate:	£20,000 (Topo)		Expected works start date:
	Type of Scheme:	Renewals		
	Scheme Stage:	Technical Survey/ Investigation		
Does this scheme form part of another scheme?				No
If "YES" what is the scheme (PIN/ WO) No that this scheme is in relation to?				
Scheme area (in hectares) (including, access and storage areas):	1ha	Expected duration of works:	6 days	During what periods are the works expected to be executed:
				Day
Who is the Principal Contractor?				To be appointed
Brief description of project: (please provide relevant drawings/maps/photos etc)				
Sixhills: Site location: An area on the NB and SB carriageway (between grid ref: Start: 464528, 322034 End: 464554, 322237). This area features a high frequency of defects that relate to defective drainage undercutting the embankment toe and eroding into the earthwork slope. Scheme purpose: The purpose of this scheme is to: - Establish the drainage extents and influence on 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 drainage and earthworks. It is believed that the defects on either side of the carriageway originated from defective and insufficient drainage. A culvert carries a stream, with a constant flow, from the SB to the NB side of the carriageway but the culvert has been installed at 90 degrees to the earthwork and subsequently diverting water directly onto the earthwork and eroding the slope through periods of increased flow. As a result, the remedial actions proposed at this stage include possible re-aligning the culvert, installed renewed drainage, potentially a lined ditch should culvert re-				

alignment not be possible and slope repair to remediate the eroded sections.

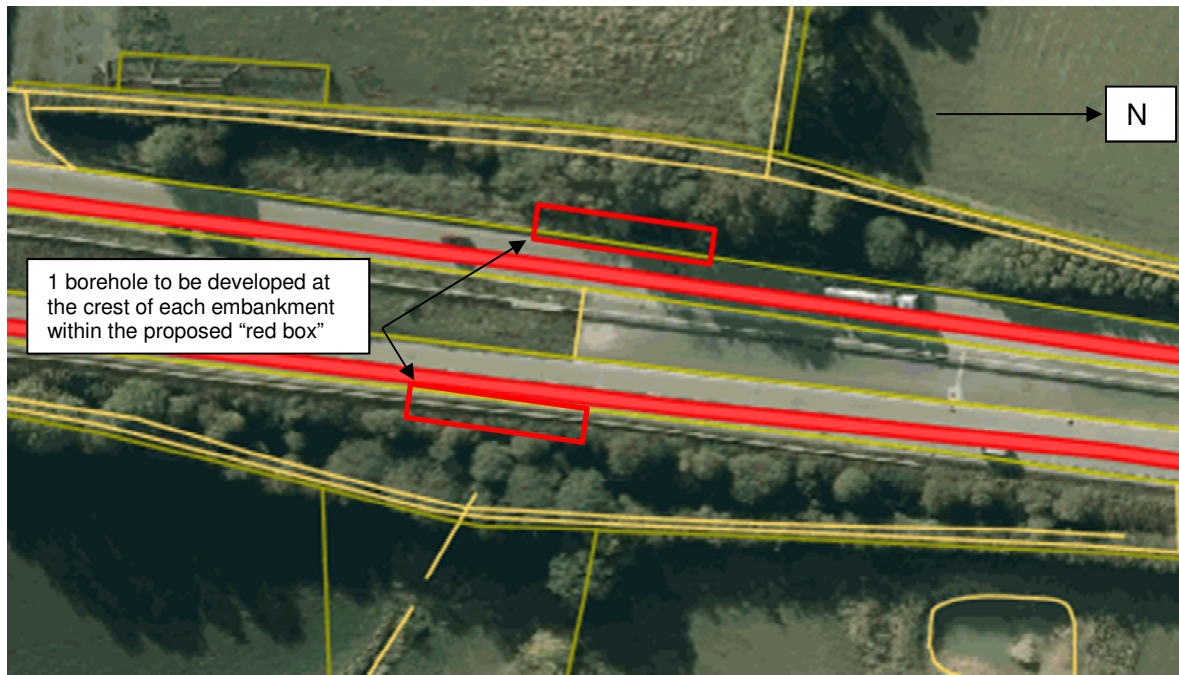
Construction activities to be executed (On site only): Site walkover survey (Environmental and Topographical),

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

Summary of Alternative Design Options Considered:

How will the site be accessed? (attach plan)

Lane 1 closure one either side of the carriageway



Will access from 3 rd party land be required?	No
Will the scheme affect any access? e.g. to residence, farmland, public rights of way.	No
If required, where will the site compound be located?	N/A for GI and Surveys
Are the works entirely within the Highway Boundary (including compound etc)?	Yes
If NO, how much and what type of land is being expected to be acquired/leased?	-
What part of the Highways estate will the works be carried out in?	Soft estate
Will sub-contractors be involved?	yes
Is any part of the scheme or associated traffic management going to disturb the soft estate (including use of SPECS, storage of machinery or material on the verge and including trial holes)?	Yes
What traffic management is likely to be required?	Lane 1 closure on NB and SB in sequence
Are traffic diversions anticipated for this scheme?	No
Has any previous Environmental Assessment been undertaken within the scheme extent or form part of the handover pack?	No
Is the site likely to be contaminated?	No
If YES, with what?	-

Does the work involve excavation?					Yes	
If yes, approximately how much?					7m deep boreholes at the crest of the embankment.	
If YES, has it been excavated in the past?					Yes	
If YES, what material will be excavated and where will it be retained?				Embankment fill. Will be taken off site for laboratory testing		
Does the scheme involve construction or excavation under the canopy or within 5m of the canopy of any trees?					No	
What wastes will be produced?						
Waste Type	Soft Veg Clearance	Hard Veg Clearance			Choose an item.	Choose an item.
Approximate Qty	<1500m ^{3**}	<500m ^{3**}				
If other please list:		**Well established trees do not need to be removed (Trunks >75mm). Only vegetation clearance with branch trimming to leave cleared ground for surveys and ground investigation. Full clearance is required for construction phase. Sixhills has been partially cleared in recent months but only on NB in a section, which has since overgrown with brambles.				
What recycling/reuse options could be adopted for any waste produced?					All waste materials must be removed from site in order to carry out the surveys and GI	
Is there an Asbestos Survey for this section of carriageway/structure?					Unknown	
Will hazardous wastes be produced as part of this works?					No	
If YES, what types?						
Where will material (including waste) and machinery be stored onsite? (attach plan)					confirmed following site visit	
Where in the design process has a sustainability option been included/considered?					Throughout	
Has or will the Sustainable Highway Design Toolkit been utilised in this design?					Yes	
How will this improve sustainability in the design?		TBA				
Have carbon savings options have been considered for this scheme?					No	
If YES, please summarise. Construction phase:						
Are the works within 20m of a watercourse or flood defence structure?					Yes	
Will the works include concrete barrier?					No	
Does the scheme include drainage works?					No for GI / Topo. If the scheme progresses to construction, drainage will be required.	
If YES, please summarise. Culvert and ditch renewal. Potential installation of slope drainage.						
Will there be any discharge of water from construction activities?					Yes	
If YES, where to? Water from borehole development will be clean water and allowed to flow into the ditch at the toe.						
Are there properties which have a view of the site?					No	

Are any of the following locations within close proximity to the site?					Other				
					Choose an item.				
					Choose an item.				
					Choose an item.				
Sixhills: Farmland adjacent to both sides of the carriageway.									
Will the scheme affect noise, vibration, air quality or odour levels?					Yes - temporarily				
Is there any evidence of wildlife? e.g. badger or rabbit holes.					Yes				
If yes, describe:		Will advise following site visit							
Are there any highway structures within 20m of the works? (e.g. bridges, culverts, etc)					Yes				
Please list Culvert/ Bridge ID no's within close proximity to the site:					Culvert inlet and outlet at the toe of the southbound and northbound embankments.				
Does the scheme involve removing/disturbing vegetation? e.g. concreting/ paving over the soft estate, tree clearance, severance of tree roots, trial holes etc.					Yes				
If YES, how much and what type:	Grassland:	Yes	Trees:	Yes	Hedgerow (linear metre):	No	Wetland (m ²):	No	
Other:	The above to be identified during walkover survey. Estimated in waste produced section.								
Is there any anticipated environmental mitigation required? e.g. replanting of trees, grass seeding etc.					No				
If yes describe:									
Please list any additional relevant Information in the box below:									
Additional information – local clearance to facilitate the Topo survey and ground investigation. Only ground vegetation clearance and branch trimming.									
Please describe the biodiversity gain opportunities that have been or will be considered for incorporation into the design (click link for more info):									
1.	<u>Amphibian Tunnels</u>	No	11.	<u>Butterfly Scrapes</u>	No				
2.	<u>Trees</u>	No	12.	<u>Bee Banks</u>	Yes				
3.	<u>Wildlife Ponds/Ground Scrapes</u>	No	13.	<u>Bee/Insect Hotels</u>	Yes				
4.	<u>Grassless greensward</u>	Yes	14.	<u>Species Rich Grasslands</u>	Yes				
5.	<u>Natural Materials Support Methods</u>	No	15.	<u>Otter Ledge/Ramps</u>	No				
6.	<u>Nest Boxes</u>	Yes	16.	<i>If other please list:</i>	Choose an item.				
7.	<u>Canopy Linkage</u>	No	17.		Choose an item.				
8.	<u>Dead Wood Habitats</u>	No	18.		Choose an item.				
9.	<u>Improving Wildlife Corridors</u>	Yes	19.		Choose an item.				

10 .	<u>Wildlife Kerbs</u>	No	20.		Choose an item.
Provide a description if you have answered 'Yes' for any of the opportunities above Will take advice from environment team about potentially viable options					
Please forward completed form along with an appropriately sized plan indicating location and extent of works, and any other relevant information (e.g. photographs if available, proposed designs) to the Environment Team.					
Details of Project scope provided and EAF requested by:					
[REDACTED]					

SCREENING ASSESSMENT**To be completed by the Environment Team in response to all Environmental Alert Forms**

Note: When looking at each topic, consider the vulnerability of the project to risks of major accidents and/or disasters and any consequential changes in the predicted effects of that project on each topic listed below. Furthermore, any impacts of the project on national and local Policies and Plans should be considered on a topic by topic basis. Will the project be impacted by heat and radiation? If so make a note in Geology and Soils and scope in as a separate topic. Additional Guidance: [SHEMS-GUI-HIG-025-MPI-57-052017 Environmental Impact Assessment](#)

	Considerations	Scoping Required?		Reasons
		Yes	No	
Air Quality	Will the scheme affect atmospheric particulate levels (e.g. dust) permanently? Are there any areas which are already subject to pollution e.g. AQMAs? Will there be any impact to human health?	No		Air Quality Management Areas There are no Air Quality Management Areas (AQMAs) within 1km of the survey extents. Receptors The following receptors are located within 200m of the work area: <i>Residential properties</i> • Willoughby Fields Farm • Willoughby Lodge <i>Industrial and businesses</i> • Shoby Poultry Houses, Paddy's Lane • Foyle Foods Abattoir • AA Training Centre • Six Hills Services (Murco Fuel) • Kooper and Saad Accountancy Services The Six Hills Hotel is also within 200m, but at the time of writing is disused. <i>Other (e.g. bus stops)</i> None. The following work activities may contribute to reduced local air quality on a temporary basis: • The use of machinery and vehicles which produce emissions • Vegetation disturbance and clearance, such as strimming, could lead to debris mobilisation under dry conditions • Traffic Management requirements may impact the movement and flow of traffic through the local area It is expected there will be a short term, small scale impact on local air quality for the duration of the

			survey. See required actions. Due to the nature of the works as a survey only, air quality will not be permanently affected by the works. See Required Actions. No significant impact is expected, no further assessment is required.
Cultural Heritage	Impacts on designations and any other potential archaeology and heritage. Cultural heritage within 300m incl. Scheduled Ancient Monuments; registered historic parks and gardens, battlefields; conservation areas; world heritage sites.	No	Designated assets There are no statutory designated historic assets within 300m of the proposed survey area. Non-designated assets Query of the Leicestershire and Rutland Historic Environment Record returns non-designated cultural heritage records or historical finds of importance within 300m of the works extent: • MLE22022 Building, Courtyard farm complex at Willoughby Fields Farm • MLE3456 Monument, Cropmarks east of Willoughby Fields by poultry farm • MLE3454 Monument, Earthworks northeast of Willoughby Lodge • MLE22020 Building, Willoughby Lodge farmstead • MLE3445 Sub-rectangular Enclosure, Possible enclosure west of Lower Grange Farm • Monument No. 319600 Medieval Enclosure, Probably animal enclosures There is no statutory protection associated with these records. All records were identified outside of the highway boundary. Work activity will be conducted on previously disturbed ground, confined to highway verges. The works will not involve breaking ground and will be restricted to handheld equipment and vegetation removal therefore it is unlikely that the survey works would encounter any previously unidentified archaeology and heritage artefacts. As such, there are no anticipated significant impacts to cultural heritage assets. No significant impact is expected, no further assessment is required.
Landscape	Impact to designated areas. Visual impacts on Local properties or landscape.	No	Landscape The works do not impact a Conservation Area. There are no other landscape designations within the scheme extent. The local National Character Area (NCA) is Leicestershire and Nottinghamshire Wolds (NE341),

	Identify landscape designations within 500m incl. AONB, National Parks, Natural Area, and Joint Character Areas. Area of Great Landscape Value (AGLV). Offsite Land use.		characterised by large market towns, open mixed farmland with long views. The surrounding land uses to the works area is predominantly agricultural, with enclosed field systems, B roads and sparse farmsteads with associated industrial/agricultural units. Works involve technical (topographical and ground investigation) surveys restricted to the highway estate only. No new landscape features will be introduced as part of the works. Surrounding land use will not change as a result of these works. Vegetation clearance has been proposed as a part of the survey works in order to facilitate access. This will likely consist of ground vegetation / bramble briar strimming and tree branch trimming where required. As such, this will affect overall proportion of ground vegetation / scrub cover on the highway verges, however, this will be selective and will not involve wholesale clearance. <u>Trees over 150mm dbh (Diameter Breast Height) must be retained and must not be removed without prior consent of the overseeing organisation.</u> Ground vegetation cutting will be to temporary effect only (natural regeneration will occur) and will not significantly reduce integrity or provision of roadside screening. Visual Willoughby Lodge is the sole visual receptor for the scheme. Works will be undertaken during the daytime; no task lighting is required. Strimming of vegetation will remove provision of vegetation on the verges, however natural regeneration will occur, and existing scrub is in poor condition. Any vegetation cutting to facilitate access to the verge will be minor and will not significantly detract from the baseline greenspace provision along the road corridor – vegetation will not be permanently removed and will re-establish. <u>No permanent tree (>150mm DBH) or hedge removal is permitted without permission from the asset owner.</u> The scheme will not result in permanent negative changes to the visual experience of the proposed location. See Required Actions. No significant impact is expected, no further assessment is required.
Nature Conservation	Potential for impact on recorded or	No	Designated sites There are designated sites for nature conservation

	unrecorded protected species. Potential for impact on designated sites and sites with ecological value.		within 1km of the works extent: - Twenty Acre Piece Site of Special Scientific Interest (SSSI), 1003068, 900m from works This site consists of acidic clay grassland, scrub and woodland. No impacts are anticipated due to distance from works and lack of hydrological connections linking the work area to this site. There are no European Designated Sites within 2km, or 30km where bats are a qualifying feature. Soft estate The highway soft verges consist of species-poor improved grassland edging, scattered scrub, dense thickets of dogwood, blackthorn and cherry regenerating from previous clearance works, bramble briar and tall ruderals. There are lines of trees to the rear, with occasional semi-mature specimens, grading into scrub and mature lengths of species-poor hedgerow. Localised excavation for boreholes at predefined locations has also been proposed for the ground investigation survey. 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. This will not impact the availability of these habitat types on a local scale. Suitability for protected and notable species Historic species records available on NBN Gateway and EnvIS were queried within a 1km radius of the proposed survey work extents. The soft estate was appraised for its suitability to support species of interest during a site walkover on 30/09/19; full details available in the Ecological Report (HE569243-KIER-EGN-A46_SIXHILLS_Z-RP-LE-02_ECOLOGICAL_SITE_VISIT_REPORT). A synopsis is provided below: <i>Badger</i> 3 records of badger within 1km (2008 – 2015), including one record of roadkill at Six Hills Junction. No setts were found within 30m of the proposed scheme extent, however some areas could not be accessed due to dense scrub. Established mammal paths were observed in adjacent farmland. No impacts anticipated. <i>Bats</i> Numerous records of common pipistrelle, noctule and soprano pipistrelle within 1km (2010), and additional
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			records (pipistrelle sp., noctule and brown long-eared) from surveys in 2017 undertaken for nearby housing development. No mature trees are present within work areas and minor pruning of the overhanging branches of semi-mature trees may be required. The vegetation trimming works will not sever connectivity along the scheme extent. Hibernation begins in November, and bats will remain torpid for longer. It is unlikely therefore that bats will be active when the work is planned to be carried out. No impacts anticipated. • <i>Birds</i> A total of 23 species have been recorded within 1km of works, with observations of Schedule 1 species (kingfisher) during the site walkover by fishing pond WB3, and additional recordings of Schedule 1 farmland and birds in 2017 breeding (58 sp.)/overwintering (61 sp.) surveys, such as fieldfare and redwing. No trees will be felled but works to proceed with some formative pruning. The current timing of works does not coincide with the breeding bird season (March – August inclusive), however, should the timing of works change the risk to this group must be mitigated. See required actions. • <i>Widespread reptiles</i> One grass snake record within 1km, reported north of Paddy's Lane (2014). Given the scope of works as a topographical survey with only localised vegetation removal required, and the construction dates currently proposed, it is not anticipated that reptiles would be within the work extent. There are no impacts to this group anticipated. • <i>Great crested newts (GCN)</i> There are 38 records of GCN within 1km (2007 – 2017), and additional historical records (1983). This includes breeding ponds. There are numerous field ponds within the local landscape to 250m from works (see below). An area of land adjacent to the SB carriageway is under consideration as a housing development. Ecological surveys in 2017 for waterbodies WB1 – 5 (see <i>Ecological Report</i> for location) did not identify GCN presence. Smooth newt was noted in WB5. Habitat Suitability Index (HSI) scoring was undertaken during the site walkover to update these surveys; ○ WB1: Below average (0.56), likely fish stocks ○ WB2: Average (0.67)
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			○ WB3: Poor (0.44), fish present ○ WB4: Average (0.64) ○ WB5: Average (0.69) Additional ponds were surveyed (see <i>Ecological Report</i> for location) and scored: ○ WB6: Below average (0.57) ○ WB7: Below average (0.57) ○ WB8: Average (0.67) Excavations for boreholes are proposed. It is considered reasonably unlikely that GCN would be encountered during works, therefore a precautionary approach has been agreed with Highways England Environment Team – see required actions. • <i>Water vole, otter</i> The vegetated channel of the watercourse and the riparian corridor were checked for field signs of water vole and otter but none were found. FPCR (2017b) reported a water vole record from 2000 on the Kingston Brook (NB side). Watercourse largely unsuitable for this species. No impacts anticipated. • <i>White clawed crayfish, dormice</i> No records present within 1km and no suitable habitat on site. No impacts anticipated. • <i>Other mammals</i> Brown hare observed during site walkover in adjacent farmland. No impacts anticipated to other mammal species due to the scope of works and highly transient nature of any animals likely to be encountered in the local landscape. Biosecurity <i>Invasive species</i> There are no records of invasive plant species within 1km of the proposed scheme extent. No invasive species were noted during site surveys. <i>Pests and diseases</i> Ash dieback has been noted within 10km (Forestry Commission, 2015). Ash trees are present in the verges but no signs of disease were noted during the walkover. Best practice for biosecurity to be adhered to; see required actions. See Required Actions. No significant impact is expected, no further assessment required.
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Geology and Soils	Identify soil resources that could be impacted by the project incl. designated sites, RIGS (Regionally important geological sites), organic matter, erosion, compaction and sealing.	No	Geology The scheme will not impact upon any Regionally Important Geological Sites (RIGS). Soils The natural soil resources throughout the area are slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. The works require localised disturbance of soil for boreholes, restricted to predefined areas for ground investigation surveys only. The excavated material consists of part-made ground in the verge embankments, which will be taken off-site for laboratory analysis. The abstraction of soils from boreholes will not significantly reduce soil resources in the local area. There are no historic landfill within 500m of the survey work extents. No significant impacts to soil and geological resources are therefore expected. No significant impact is expected, no further assessment required.
Materials	To include both machinery and material use including disposal (waste). Consider asbestos, and resource efficiency.	No	Any vegetation arisings (i.e. vegetation trimmed or trimmed branches) to facilitate access to the verges / topographical survey to be removed from site. Waste management is the responsibility of the Principal Contractor; See required actions. No wastes other than green waste anticipated. Soils excavated during ground investigation surveys will be taken off-site for external analysis. There are no Asbestos Reports available for this area for the verges in this location; it is not anticipated soils disturbed will contain asbestos (ACMs). The waste disposal of these soils is the responsibility of the contractor, including any relevant testing to ensure legal compliance and appropriate disposal means. See required actions. No significant impact is expected, no further assessment required.
Noise & Vibration	Noise and vibration disturbance on local community. Are there any noise sensitive receptors in close vicinity? Will human health be	No	Noise Important Areas There are Noise Important Areas within proximity to the scheme: - Shoby Poultry (Highways England ID 14123), 240m approx. from works - Willoughby Lodge (Highways England ID 11676) 30m from A46 carriageway - A46 Services (Six Hills Hotel (dis.), Murco Services and adjacent industry) (Highways

	affected?		England ID 14621), approx. 215m from works The Local Authority (Charnwood Borough Council) to be notified of works within proximity to a Noise Important Area as best practice. See required actions. Baseline Receptors to 200m are detailed within Air Quality. Surveys works are currently scheduled for daytime working. Baseline noise levels on the A46 during daytime hours (07:00 - 23:00) are 75.0+ in the inner carriageway, reducing to 60.0 – 74.9dB towards the closest residences (DEFRA, 2012). Survey works will produce noise associated with borehole/ground investigation equipment and any vegetation clearance tools for access such as strimming. Vegetation pruning will be largely undertaken by hand which will produce minimal noise. Works are expected to produce temporary impacts only associated with equipment and vehicle noise, restricted to working hours only. Noise will produce less nuisance to local receptors through daytime working. Noise associated with equipment to be minimised as far as practicable; See required actions. Traffic Management is required in the form of lane closures; this is not expected to significantly increase traffic noise along the dual carriageway. There will be no long-term / permanent impacts to local baseline noise levels. See required actions. No significant impact is expected, no further assessment required.
People and Communities	Will the work impact on physical, mental and social wellbeing? Are there sensitive land uses e.g. schools? Are the works in previously undeveloped land (greenfield)? Will the works result in social changes and/or result in changes to	No	Road accessibility <i>General</i> Traffic Management requirements to facilitate the survey works will involve lane closures s-closure. Due to daytime working, this has the potential for delays and disruption, however this will be minimal as compared to road closures and diversions. Appropriate Traffic Management procedures are to be followed; see required actions. There will be no permanent changes to routes or journey times as a result of the survey works. <i>Local travel</i> There are residential and industrial dwellings within

	population and human health? Are there plans for any future land use on or near the works? Impacts to vehicle travellers and pedestrians through journey time, route alterations, amenity value and PRowS.		proximity to the scheme extent. Any requirements for Traffic Management may result in some delays to local travellers travelling to/from Leicester and local villages surrounding the extents e.g. Willoughby-on-the-Wolds, however this impact is temporary and restricted to working hours only. Access There are no properties with direct access/egress to the A46 affected by slip road closures to require dedicated Traffic Management considerations. Non-motorised users (NMUs) <i>Public Rights of Way (PRow)</i> There are no Public Rights of Way (PRow) affected by the works; no footpaths will require closure as part of the works. <i>Pavements</i> There are no dedicated footways to be affected by works, therefore no requirements for NMU provisions. Amenity value There will be no change in land use as a result of the works. Amenity value will not be affected. See Required Actions. No significant impact expected. No further assessment required.
Road Drainage and the Water Environment	Identify water courses and floodplains that could be impacted by the project incl. rivers, ditches, and ponds etc. that are linked to/within 10m of the proposed works area. Pollution to water resources/soil contamination, quality and quantity. Impact on designated sites via water supply. Are there any areas which are already subject to pollution? Will there be any impact to human health?	No	Water features Water features within 300m of works: • <i>Primary (Main) rivers</i> None. • <i>Ordinary watercourses</i> There is an unnamed watercourse which drains from large reservoir/ponds, flowing northwest under the culvert [id] where it later confluences with Kingston Brook near Wide Lane. This watercourse also crosses Six Hills near Twenty Acre Piece SSSI. • <i>Ditches and drains</i> There is a drain to the rear of the verges by the adjacent land, both south and northbound. There is a ditch to the rear of the verge conveying highway drainage. • <i>Ponds and reservoirs</i> There are numerous field ponds present within the local arable landscape. There are also larger angling/reservoir ponds located further from the works extent which supply the ordinary watercourse conveyed under the A46.

			<i>Highway drainage</i> There is roadside drainage present on the A46 carriageway. This includes open ditches to the rear of the verges. There will be no alteration to road drainage or discharge of water as a result of the works. Flood Risk The survey extent is not located within a Flood Zone (Flood Zone 1 – Lowest probability). There is Flood Zones 2 and 2 associated with Kingston Brook outside of the survey extents. Survey works will not impact baseline flood risk or vulnerability at this site. Minor discharges of water will be made associated with cooling for survey equipment, but this will not impact flooding risk; see required actions. Groundwater / Pollution The bedrock at this location is classed as unproductive, whilst superficial deposits hold secondary aquifer features. The A46 and verges are not classed as having any groundwater pollution vulnerability, however to the northwest of the scheme extents at Kingston Brook there is a minor aquifer with low vulnerability to groundwater pollution. The works are not located within a Groundwater Source Protection Zone or Drinking Water Safeguard Zones. Suitable pollution prevention measures must be in place to protect roadside drainage and ensure debris/arising from vegetation cutting do not end up in the highway drainage system and subsequent aquatic pollution risk is minimised. This includes correct management of equipment waters discharges during excavation of boreholes; See required actions. See required actions. No significant impact is expected, no further assessment required.
Climate	What effects will the work have on climate (e.g. GHG) and how vulnerable is the project to climate change (e.g. predict change that the project will introduce in comparison to the baseline)?	No	Emissions produced by operational vehicles and equipment will be temporary and restricted to the work (construction) phase only. The works will not lead to net long-term emissions (operational phase) and therefore will not impact baseline climate vulnerability. Habitat complexity and connectivity will not be significantly impacted by any vegetation cutting proposals, and therefore the works are not anticipated to have any bearing on the ability of protected species

			to adapt to climate change. Vegetation strimmed will regenerate.
			No significant impact is expected, no further assessment required.

Required Actions	<i>This assessment is based on the scope as described in the Brief Project Description (Environmental Alert Form, Page 1). Any change to the scope which may constitute a new impact, or increase the significance of identified impacts, will render this Environmental Screening Assessment invalid and a re-assessment will be required. Should a re-assessment be required, please contact the Kier Environment Team.</i> All below required actions must be integrated into the Principal Contractor's RAMS: these must be submitted for review and approved prior to works by the overseeing organisation. <u>Kier Design Team to inform Principal Contractor of the following actions:</u> Air Quality • Odour and other emissions must be minimised using best practice methods, including minimal idling of vehicles on site. • Where possible, materials which minimise emissions, in accordance with the most recent British Standard, must be integrated into the scheme's design and followed up by the Principal Contractor. Nature Conservation <u>No trees and shrubs over >150mm Diameter Breast Height (dbh) to be cleared or permanently removed – if required, the Contractor must gain prior consent from Highways England Asset Team.</u> General • A site induction must be conducted for all onsite workers. This will detail those protected species that may be found on site and the protocols which are to be followed if protected species be encountered. • A toolbox talk is to be undertaken during site induction, covering risks to protected species, including great crested newts. • Report any sightings of protected / invasive species to Highways England Environment Team to update their records. • The soft estate will not be used for parking or storage of machinery at any time due to the potential impacts upon protected species or tree roots via compaction. • Standard best practice measures for pollution prevention should be adopted to prevent contamination of all linked waterbodies in proximity to the works, which could have adverse impacts on the quality of habitat for protected species. Vegetation clearance: • Removal of trees >150mm Diameter Breast Height (DBH = 1.5m above ground level) is not permitted unless through express permission of HE Environmental Asset Team. It is not envisaged that boreholes (2 no.) would impact Root Protection Areas of surrounding trees and therefore damage roots so an arboricultural watching brief is not required as agreed with HE Environmental Asset (C. O'Connor, personal communication, 4 October).
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- Branches and ground vegetation may be hand cut where access is required for personnel or equipment only.
- Best practice biosecurity measures in order to reduce ash dieback spread to be adhered to on site, as per Forestry Commission guidelines.

Species-specific actions

Great crested newts (GCN):

- The works programme is proposed at a time of year when GCN will be on land as part of their terrestrial life stage. Additionally, works are proposed in November when GCN and other amphibians are likely to be in a torpid state, and therefore less mobile. Excavations for boreholes will break ground on NB and SB verges adjacent to potential GCN habitat but the location of BH01 and BH02 are near the verges and in suboptimal areas for terrestrial GCN. It is considered reasonably unlikely that GCN would be encountered during the works in these areas and therefore a precautionary approach is appropriate.
- Contractors ecologist to provide a toolbox talk on great crested newts, covering identification and legislation, for work force to review prior to commencing work on site. Work force to remain vigilant during works (both carriageways). This approach was agreed with HE Environmental Asset (R. Carline, personal communication, 3 October).
- In the unlikely event that a GCN is discovered on site, Contractor must stop work and contact Kier Environment Team or HE Asset Team for further advice.
- No unnecessary ground disturbance within site - where possible the plant must remain on the hardstanding of the carriageway to reduce tracking runs/access routes by machinery on the verges. Parking and storage of plant on the hardstanding where possible.

Nesting birds:

- Localised woody vegetation branch trimming works is currently scheduled to take place outside of the main bird nesting season. 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.
- If vegetation clearance works scheduled coincide with the nesting season (March to August) inclusive, an ecologist must check the impacted vegetation for active bird nests prior to removal and this must be undertaken within 24 hours prior of the vegetation clearance. If an active bird's nest is found on site during the works, works in the area must cease and a 5m buffer zone around the nest must be applied to prevent disturbance. The exclusion zone must be maintained until any young have fledged and left the area; overseen by an appointed ECoW. Should this occur the overseeing organisation's environment team must be contacted for advice.

Badger/bats (nocturnal species):

- Work activities are currently scheduled for the day, so no impacts from lighting disturbance are anticipated to nocturnal species. If this changes and work is required at night, task lighting should be appropriately hooded and directed away from the soft estate.
- If any nocturnal animals such as badger encountered during night works, works should stop, and the animal allowed to move away from / through the work area safely.

Noise and Vibration

- All site operatives must adhere to the British Standard 5228 Parts I/II - *Noise in relation to construction*.
- Best practical means to minimise the likelihood of nuisance caused by the scheme, and reduce the impact of noise and vibration, should be enacted wherever safety considerations permit.

People and Communities / Effects on All Travellers

- Appropriate TTRO and Traffic Management procedures are to be followed.
- Signing prior to works should inform road users of possible delays on the route across specified dates. Signing during works should be adequate to inform users of temporary alterations to: speed limits, diversion routes and/or road layout. This should include any necessary details to inform members of the public as to the reasons for restrictions.
- Communication must be upheld with Local Authorities throughout to ensure smooth delivery of the scheme, including necessary diversions.

Road Drainage and the Water Environment

- All works must be carried out in accordance with site-specific Risk Assessments, CIRIA documents and Environment Agency Pollution Prevention Guidelines (PPGs), in particular *PPG1 General*.
- Legal compliance in relation to pollutants through the aquatic environment must be strictly adhered to.
- The contractors' site-specific RAMS must be reviewed and approved by the overseeing organisations' Environment Team to ensure the risks to surface and groundwater pollution and the wider drainage environment have been adequately considered prior to works commencing.
- The contractor must ensure that they have a robust Pollution Response Plan in place before works start.
- Adequately sized spill kits must be made available on site at all times in the instance oil or fuel are spilled near watercourses.
- Any pollution incident must be contained and cleaned up on the carriageway and reported.
- No storage of oils or chemicals allowed within 10m of an exposed drain or watercourse.

Materials

- Any vegetation arisings (i.e. vegetation trimmed to facilitate access to the verges, including potential for branch trimming) to be removed from site.
- It is the responsibility of the waste producer to carry out testing of waste to determine appropriate waste streams and legal disposal of any waste products generated.
- It is the responsibility of the waste producer to comply with any relevant legislation and duty of care with regards to waste.
- Where legal, practicable and safe to do so, materials must be considered for recycling or reusing on site to reduce waste going to landfill. This includes vegetation; Principal Contractor to recycle non-hazardous vegetation (green waste) within a legally compliant waste stream where practical.
- Any Highways England (HE) delivery contractors will be required to comply with HE waste reporting requirements.

Required Actions	Time Required	Target Response time/ date
Noise / Traffic Management: Charnwood Borough Council to be notified of works, including start and end dates, in proximity to Noise Important Areas. <i>Any stipulations made to be added to scheme specification and adhered to on site. If no response within statutory response times, assume no further comment.</i>	10 – 28 days	ASAP

Requirement for additional documentation			Reason
Is this deemed to be a "Project" and require an Appropriate Assessment Screening Matrix? As defined by DMRB Volume 11, Section 4, Chapter 2, Part 1 HD 44/09	Yes	No	The works are a technical survey only and are not deemed to be a 'Project'. The survey works are not located within 2km, or 30km where bats are a qualifying interest, of a European Designated Site.
Is a Record of Determination required?	Yes	No	The survey works are not an improvement scheme and are not deemed to be either an Annex II relevant project or Annex II projects likely to cause significant effects under Annex III.
Does the Principal Contractor require a Construction Environmental Management Plan?	Yes	No	The survey works are not considered to have the potential for environmental impacts during construction. Responsibility of the Principal Contractor.
Will the Principal Contractor require a Material Resources Assessment?	Yes	No	The survey value is not estimated to be above £300K and therefore requires an assessment of material resources in accordance with DMRB Vol 11 IAN153/11. Responsibility of the Principal Contractor.
Is an Environmental Permit or a Land Drainage Consent & Water Management Plan required?	Yes	No	The survey works are not considered to have the potential for environmental impacts on a main watercourse (i.e. is not within 16 metres of a tidal watercourse or 10 metres of a non-tidal watercourse). Responsibility of the Principal Contractor.
Is an Options Report required?	Yes	No	The survey works are not considered to have the potential for significant environmental impacts.

Summary of Assessment findings
(to be completed by the Environment Team)

Air Quality

- No Air Quality Management Areas (AQMAs) within 1km.
- Residential and industrial properties within 200m, temporary minor impact associated with traffic management and equipment emissions only.
- Best practice measures to be followed to maintain air quality.
- No further assessment required.

Cultural Heritage

- No statutory assets within 300m.
- Additional non-statutory records/finds of historical importance within 300m, but located outside of the scheme extents. No expected impact on any unidentified artefacts or archaeology during borehole excavation.
- No further assessment required.

Landscape and Visual

- Loss of ground vegetation and potential for branch trimming and minor clearance will not remove screening integrity and will naturally regenerate (temporary impact).
- No further assessment required.

Nature Conservation

- Twenty Acre Piece SSSI within 2km of works; no impact anticipated due to distance from works and nature of works as a technical survey only.
- Records of badger, bats, birds, great crested newt, water vole and reptile within 1km.
- No evidence of invasive species identified during site visit.
- Precautionary approach advised for great crested newts, given requirement to break ground and timing of works coinciding with terrestrial life phase.
- Works are currently scheduled outside of bird nesting season. If timing of works change for vegetation clearance works to be within nesting season (March – August inclusive), pre-work checks will be required.
- Refer to document **HE569243-KIER-EGN-A46_SIXHILLS_Z-RP-LE-02_ECOLOGICAL_SITE_VISIT_REPORT** for full details of the site visit.
- No further assessment required.

Noise and Vibration

- Noise Important Areas within proximity to scheme extent (Shoby Poultry, Willoughby Lodge, A46 Services). Survey works do not involve excessive noisy operations; any noise associated with borehole excavation equipment/plant and localised vegetation clearance will be temporary only. Daytime working reduces nuisance to any local receptors. Local Authority to be contacted as best practice.
- Best practice working methods to reduce noise to be adhered to on site.
- No further assessment required.

People and Communities / Effects on All Travellers

- Traffic Management (slip road closure) to be in place as lane closure. Communications with Local Authority to be upheld to ensure smooth delivery of scheme and minimisation of disruption.
- No Public Rights of Way or footways will be affected by the scheme; no Pedestrian Traffic Management required.
- No further assessment required.

Road Drainage and the Water Environment

- Survey works will occur in a Flood Zone 1 area [Low risk].
- There are no Main Rivers within the works extent. No Flood Activity Permit is required.
- Roadside drainage (gullies) present. Protection measures to ensure water quality is maintained to be

included in scheme specification. Best practice to be upheld throughout works; the contractor must ensure that they have a robust Pollution Response Plan in place before works start.

- No further assessment required.

Materials

- Vegetation arisings to be removed from site. Waste disposal is the duty of the Principal Contractor.
- No further assessment required.

Geology and Soils

- No further assessment required.
- No required actions.

Climate

- No further assessment required.
- No required actions.

Version	Author	Date	Checked and Authorised for Issue	Date