

# **Reconfiguration of Ingestre Park Golf Club Golf Course**

# **Construction Environmental Management Plan (CEMP)**

**Ingestre Park Golf Club** 

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## Ecus Ltd

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## 1. Introduction

### Context

This Construction Environmental Management Plan (CEMP) has been produced by Ecus Ltd (Ecus) on behalf of Kingston Hill Golf Club Ltd T/A Ingestre Park Golf Club (IPGC) in relation to the proposed reconfiguration of the Ingestre Park Golf Club golf course. It is an outline document prepared on the basis of the design prepared by International Design Group and other pre-construction information summarised in this document. It is intended that the CEMP will be adopted, developed and implemented by the construction contractor appointed to undertake the reconfiguration of the golf course.

#### Summary of the Project

The High Speed Rail (West Midlands - Crewe) Bill (the Bill) provides for the HS2 route to pass through IPGC along a section of Trent North embankment, 1.1km in total length, and would continue in the Brancote South cutting, 1.6km in total length.

IPGC is a private members' club with approximately 650 members; the club house is used for a variety of social and recreational events. Construction of the scheme, in this location, would require a total of approximately 24.5ha (approximately 47%) of the course at IPGC to be either lost or severed from the club house. This would result in the facility being unable to function in its current arrangement.

Since the submission of the Bill, additional land has been identified for the reconfiguration of golf course to replace the land lost and severed by the HS2 route, which will allow the golf club to continue as a community asset in its present location. IPGC club house, located to the north of the HS2 route, and the land owned by IPGC on the northern side of the HS2 route, will be retained for the reconfigured golf course layout. Approximately 44ha of additional land will be required permanently for the reconfiguration of the golf course.

This report deals with the additional land identified since the submission of the Bill and does not seek to address compliance of the reconfiguration of the golf course within the land provided by the Bill.

#### Purpose and scope of this document

This CEMP sets out how the construction phase of the reconfiguration of IPGC will implement environmental management measures to ensure compliance with environmental legislation and the environmental impact assessment contained within the HS2 Phase 2a Supplementary Environmental Statement 2 (SES2) and the Additional Provision 2 Environmental Statement (AP2 ES) (February 2019).

Ecus has produced an Environmental Statement Compliance Report (Ingestre Park Golf Club Golf Course Reconfiguration – Environmental Statement Compliance, Ecus 2020) on behalf of IPGC which sets out how the detailed design for the reconfiguration of golf course complies with the assumptions and environmental impact assessment contained within the HS2 Phase 2a Supplementary Environmental Statement 2 (SES2) and the Additional Provision 2 Environmental Statement (AP2 ES) (February 2019). In addition, and where necessary, Environmental Statement Compliance Report also considered compliance with:

- the HS2 Phase 2a Environmental Statement (the main ES) (July 2017);
- the HS2 Phase 2a Supplementary Environmental Statement 1 (SES1) and the Additional Provision 1 Environmental Statement (AP1 ES) (March 2018); and
- the Environmental Minimum Requirements (EMRs) for HS2 Phase 2a.

The scope of the Environmental Statement Compliance Report, and thus the scope of the CEMP, includes the following:



- Agriculture, Forestry and Soils;
- Air Quality
- Community;
- Cultural Heritage (Archaeology and Built Heritage)
- Ecology and Biodiversity;
- Health;
- Landscape and Visual;
- Sound, Noise and Vibration;
- Water Resources and Flood Risk; and
- Traffic and Transport.

The CEMP also addresses a number of other environmental issues which will require appropriate management during the construction phase. These include the following:

- Storage and Logistics;
- Resource Use and Carbon;
- Waste; and
- Monitoring.

Through the implementation of appropriate management plans and mitigation measures, compliance with the Environmental Statement will be ensured and detrimental impacts and breaches of current wildlife legislation will be avoided. Without these there is the risk of disturbing, injuring or even killing great crested newt, bat species, nesting birds, water voles, otters, reptiles and badgers that may be inhabiting suitable habitat on or adjacent to the site.

The CEMP provides succinct descriptions of mitigation measures and procedures required during the construction phase of development on site. It will be implemented before the outset of the works and will be adhered to until completion of all construction activities.

It should be noted that the CEMP outlines the mitigation measures and procedures (and timeframes of work) to be undertaken within the construction phase of development only, and does not include any measures to safeguard biodiversity within the operational phase of development. These issues are addressed in a separate Landscape and Ecological Management Plan (LEMP).

#### **CEMP** Structure

The CEMP takes the following structure:

Section 2: Description of the project

Section 3: The Environmental Effects of the project addressed in the CEMP

Section 4: Legislation, HS2 Environmental standards and good practice

Section 5: Roles and Responsibilities

Section 6: Environmental Action Plan;

- Cultural Heritage and archaeology;
- Ecology;
- Agriculture, Forestry and Soils;



- Water Environment: Flood risk and drainage;
- Storage and Logistics
- Resource Use and Carbon
- Noise & Vibration, Dust & Air Quality
- Waste
- Monitoring

Section 7: Training, Competency and Communication

Section 8: Project Environmental Audits and Monitoring

Section 9: Environmental Incidents

Appendices 1 - 3: Reasonable Avoidance Measures and Toolbox Talks



## 2. Description of the project

### The project

The High Speed Rail (West Midlands - Crewe) Bill (the Bill) provides for the HS2 route to pass through Ingestre Park Golf Club along a section of Trent North embankment, 1.1km in total length, and would continue in the Brancote South cutting, 1.6km in total length. This would require a total of approximately 24.5ha (approximately 47%) of the course at IPGC to be either lost or severed from the club house.

This project concerns the development of the additional land identified for the reconfiguration of IPGC to replace the land lost and severed by the HS2 route to allow the golf club to continue as a community asset in its present location. The IPGC club house, located to the north of the HS2 route, and the land owned by IPGC on the northern side of the HS2 route, will be retained for the reconfigured golf course layout. Approximately 44ha of additional land will be required permanently for the reconfiguration of IPGC golf course.

Figure 1 (below) illustrates the additional land will be used for the reconfiguration of IPGC, as well as the retained course and clubhouse. The scope of the proposed works associated with the Planning Direction is restricted to the land coloured in red in Figure 1. The area in blue does not form part of this submission.



Figure 1: Additional land for the reconfiguration of IPGC is highlighted in red.



The proposal comprises:

- The construction of 12 new holes of golf;
- A crossing of Ingestre Park Road;
- Two lakes (one of which is used for irrigation storage);
- Perimeter fencing;
- Land drainage;
- Extensive landscape planting / habitat creation; and
- The erection of one small ancillary pumphouse.

#### Programme

The proposed programme of works are for construction to commence on site on in April 2021 with site establishment being complete by 1<sup>st</sup> May 2021.

Golf construction work is programmed to start on site on 1<sup>st</sup> May 2021. This is driven by the need to try to create a temporary combination of 18 holes since HS2 will occupy a significant proportion of the existing site in January 2023 for the purposes of diverting a Cadent gas pipeline as part of the enabling woks for HS2.

The programme aim is for two new holes to be ready to play within six months (due October 2021) maintaining 18 holes throughout the construction period. Completion of the remaining ten holes is to be brought into use in October 2022.

Work on the retained holes is programmed to occur during the winter months of 2021 and will be subject to weather. Safety fencing must be in place during the last week of December 2021 and removed within one week from October 2022.

The reconfigured course should be ready to play by October 2022 assuming that work commences in April 2021 and that there are no significant weather delays.

By agreement with HS2, a number of golf holes which will eventually be transferred to HS2 have been made available to the club in an attempt to maintain 18 holes. These holes will be combined with 7 of the proposed new holes to create a routing of 18 holes when Cadent and BPA pipelines are diverted. The remaining 5 holes require thus allowing the final transfer of the bulk of the existing course to HS2. The reconfigured course should be ready to play by August 2023 assuming that work commences in May 2021 and that there are no significant weather delays.

Weather delays are expected and it is for this reason that the working hours are set to finish at 2100 for the new holes during the summer months. (This will be restricted by the Planning permission).



## 3. Environmental Effects

This section summarises the main environmental effects which are addressed in the CEMP and identifies the key environmental assumptions upon which they are based. The management of these environmental effects during the construction phase are addressed in Section 6.

#### Key environmental assumptions

The assessment of environmental effects associated with the reconfiguration of Ingestre Park Golf Club (and resulting residual significant effects) are reported in the SES2 and AP2 ES. Ecus has developed the CEMP based on a review of the detailed design and proposed construction programme which build on the indicative design and assumptions in the Environmental Statement and associated documents.



Figure 1. Indicative layout for the reconfiguration of Ingestre Park Golf Club as taken from the SES2 and AP2 ES

### Assumptions

- the extended part of the course will be designed with a 'woodland/parkland' feel that complements the historic landscape context of the existing course;
- any earthworks to create the playing areas and other elements, such as water features, will be no more than approximately 5m above or below existing ground levels, with any surplus excavated materials from the reconfiguration of the golf course reused in landscaping the course;



- existing mature trees and hedgerows and any other features of ecological or historic value will be incorporated into the design. The maintained playing area is likely to occupy no more than 30% of the additional land, allowing for substantial woodland planting and habitat creation;
- the course design and any woodland planting will take account of the key views into and out of Ingestre Conservation Area, to maintain its character and the settings of listed buildings;
- changes in ground levels within the Trent valley floodplain area will be avoided, or, if required will aim for a net increase in flood storage. Surface water drainage will be designed to ensure no increase in peak flood levels at any flood sensitive local receptors; and
- it is anticipated that any water required for irrigation of the reconfigured course can be provided from the Ingestre Park Golf Club's existing licensed abstraction from the Sherwood Sandstone Group. Any new abstraction would require an application to be submitted to the Environment Agency, together with an assessment of any impacts on the wider environment.

The design and construction of the golf course must remain within the environmental parameters set by the Environmental Statement and Environmental Minimum Standards in order to be compliant.

#### Summary of the main environmental constraints

The main environmental constraints have been identified from a review of the HS2 Phase 2a Environmental Statement (the main ES) (July 2017) and the HS2 Phase 2a Supplementary Environmental Statement 2 (SES2) and the Additional Provision 2 Environmental Statement (AP2 ES) (March 2018). These are summarised in Table 1.



### Table 1. Summary of environmental constraints

Торіс	Key constraints				
Cultural Heritage	The reconfiguration of IPGC will impact upon the Ingestre Conservation Area temporarily during construction and as a result of the completed development. It is anticipated that the temporary effects will include the movement and noise of construction traffic within the immediate vicinity of the Conservation Area, and the Grade II Listed Home Farm and Farm Buildings at Home Farm. The construction works will introduce noise and traffic which will distract from the rural setting of these designated heritage assets. Furthermore, construction works to reconfigure the golf course will introduce noise and traffic which will affect the rural setting				
Archaeology	Archaeology presents a programme risk as presence of significant archaeology is an unknown. HS2 Ltd have carried out both a desk-based assessment and a robust programme of non-intrusive survey, comprising magnetometry, targeted resistivity, and fieldwalking. This survey work has identified that there is some potential for currently unidentified heritage assets being present within the site. This potential is due both to anomalies identified from desk-based sources and survey work, and from its general location on free-draining gravels adjacent to a major watercourse. The Geophysical Survey identified potential archaeological features including prehistoric settlement activity and post-medieval ridge and furrow.				
	The programme of trial trenching set out in the Written Scheme of Investigation (due to begin in January 2021) will test these anomalies and confirm the presence or absence of heritage assets. Should this trenching confirm that no significant assets are present, then the report will be provided to the archaeological advisor to the LPA and no further action is necessary. In the event of significant heritage assets being identified during the trenching, the scope of mitigation (whether via excavation or preservation <i>in situ</i> ) and mechanisms for delivering that mitigation will be identified and agreed between HS2 Ltd and IPGC following consultation with the archaeological advisor to the LPA, and, if necessary, Historic England. The scope of that mitigation will depend on the significance and location of the assets, should any be found.				
Agriculture, forestry and soils	There are no significant issues to be addressed in the CEMP.				
Ecology and	Trees				
Biodiversity	The existing site and the proposed new golf course both contain trees that are covered by a Stafford Borough Council (SBC) Tree Preservation Order (TPO). Both areas are also located within a SBC Conservation Area.				
	• Consent must be sought from the Local Planning Authority if tree removal work or tree management will affect protected trees within the site or those which overhang the site boundary. Tree works must not be carried out without permission.				
	<ul> <li>Work will also be permitted if it is included in an Arboricultural Impact Assessment, Arboricultural Method Statement and/or Tree Protection Plan approved by the Local Planning Authority where development proposals for a site have been granted Planning Permission.</li> </ul>				



Торіс	Key constraints
	The existing site and proposed new site do not contain any ancient woodland as shown on the Multi-Agency Geographical Information for the Countryside (MAGIC) website (www.magic.defra.gov.uk) or ancient and veteran trees listed on the Woodland Trust Ancient Tree Inventory ( <u>https://ati.woodlandtrust.org.uk/</u> ).
	Bats (Tree roosts)
	The existing Ingestre Park Golf Cub is known to support a Myotis bat species maternity roost, three soprano pipistrelle day roosts and a common pipistrelle day roost within trees.
	The additional land contains suitable habitats for bat roosting, foraging and commuting and is likely to be used by the bat assemblage at the existing golf course. This includes several species of principal importance and other species that are conservation priorities of the Staffordshire BAP. While the reconfiguration of the golf course will seek to retain mature trees, the loss of some mature trees is likely. Furthermore, a large number of trees with potential roost features have been identified just outside of the site boundary.
	Great Crested Newts (GCN)
	Ponds within and in proximity to land parcel 6730 are yet to be surveyed for the presence of GCN. Although the site itself, for the most part, contains sub-optimum GCN habitat in the form of arable fields, and the phase one habitat survey description of the single pond within the site is " <i>Eutrophic pond surrounded by mature willows, white and goat, with some eared willow shrub. The pond has had a large amount of grain dumped in it. There is some bramble and willow scrub surrounding the pond</i> " (HS2 survey notes, 2019), indicating it will also be sub-optimum for GCN. There are, however, off site ponds in close proximity which have not been surveyed and some areas of suitable habitat on site, and as such the presence of GCN cannot entirely be ruled out. As such the CEMP has been developed based on the assumption that GCN are present and that construction should proceed on this basis.
	GCN are present in a pond to the south-west of the Club House. The pond is outside of the red line but suitable habitat extends into the golf course reconfiguration area. The existing golf course also has a known meta-population of great crested newts.
	Based on the information available, it is unknown whether GCN use the pond within the additional land.
	Works in land parcel 5255 are also approximately 150m from a known medium population of GCN (HS2 survey data, 2019). Habitats on this land parcel include improved grassland and species-poor defunct hedges. As such, the CEMP has been developed on the assumption that GCN are present.
	Badger
	Two outlier badger setts have been confirmed on land parcel 6730. It is also likely that badgers will forage and commute on the land. There is no recent survey data and given how common and widespread badgers and it cannot be discounted that there is now a main sett on site rather than outlier setts.
	Wintering birds



Торіс	Key constraints						
	The new site is reported by West Midland Bird Club to support wintering mixed flocks of up to up to 220 (peak count) golden plover and 312 (peak count) lapwing. Breeding and wintering bird surveys have been undertaken and only one field (the large arable field - LP6730) is likely to provide habitat for golden plover and lapwing (target species). However, these species have not been identified so far. No other notable wintering bird species were identified.						
	Reptiles						
	The majority of the additional land comprises arable land, which when last surveyed in 2020, consisted of recently harvested arable fields and species-poor semi-improved grassland. The only area identified which provided a suitable habitat for reptiles is the western boundary, which consists of a mosaic of semi improved grasslands, tall ruderals and an avenue of over mature trees.						
	It has been suggested that surveys undertaken to date have found an absence of reptiles on the new sites.						
	Whilst it is unlikely that reptiles are present, it is possible that there is a population of reptiles which will need to be translocated to a receptor site under a method statement ahead of site works (April – June or August – September).						
	Otter & Water Vole						
	The data suggest that otters and water voles are unlikely to be a constraint but their presence cannot be ruled out.						
	Non-native Invasive Plant Species						
	A very dense area of Himalayan balsam was recorded alongside the existing ditch on land parcel 6730 (HS2 survey data 2019). This will need to be eradicated from the site between April and September to prevent any spread.						
Water	Flood Risk						
Environment	Surface water drainage must be designed and constructed to ensure no increase in peak flood levels at any flood sensitive local receptors.						
	A drainage design for the new holes has been prepared to ensure the scheme contains sufficient capacity to drain the site effectively.						
	Water Environment						
	The land set aside for the new holes is adjacent to Pasturefields Salt Marsh SAC/SSSI. Any new water extraction to supply the course with water must not impact on this designated site. Construction activity must also ensure there are no impacts on Pasturefields.						
Air Quality	The risks associated with construction dust during construction have been judged to be low and as such as good practice measures are required during the construction phase.						
Sound noise and vibration	It has since been highlighted that there a number of sensitive receptors close to the site and that a noise trigger action plan and noise monitoring will be required during the construction phase.						



Торіс	Key constraints
Traffic and Transport	There are a number of key recommendation which have been made to minimise impacts from construction traffic and there is a need to comply with the requirements of the HS2 Route-wide Traffic Management Plan and Framework Traffic Plan, which include mitigation measures to manage impacts from traffic and transport. A Works Agreement with Staffordshire County Highways Authority under s184 of the Highways Act will be required prior to any works being carried out to the public highway within or adjoining the site. In particular, no construction traffic can use the canal bridge on Trent Lane to follow through the undertaking and assurance given by the Secretary of State to the Canal and River Trust.



## 4. Legislation and good practice guidance

One of the objectives of the CEMP is to ensure compliance with relevant legislation and policies relating to environmental protection and planning. This section summarises the legislative requirements or planning considerations and that are relevant to the works at IPGC.

### **Species Legislation**

Table 2 summarises the legal situation in relation to the protected species which have been identified as potentially being affected by the works at IPGC.

Legislative Issues	Legislation	UK BAP	Local BAP	Implications
Great Crested Newts	Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019			It is illegal to kill, injure, capture, handle or disturb GCN, and the places they use for breeding, resting, shelter and protection are protected from being damaged or destroyed.
	Schedule 5 of the Wildlife and Countryside Act 1981 (as amended)			
Nesting Birds	Section 1 and Schedule 1 of the Wildlife & Countryside Act 1981 (as amended)	*	*	Legal protection makes it an offence to intentionally kill, injure or take any wild bird; intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; or intentionally take or destroy the egg of any wild bird.
Badgers	The Protection of Badgers Act 1992 consolidates and improved previous legislation (including the Badgers (Further Protection) Act 1991).	*	✓	It is a serious offence to kill, injure or take a badger, or to damage or interfere with a sett unless a licence is obtained from a statutory authority.
Bats	Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019	~	✓	Legal protection makes it an offence to intentionally or recklessly kill, injure or take bats from the wild. To damage, destroy or obstruct access to any structure or place which bats use for shelter or protection. To disturb bats while they are using such a place (Natural England 2008)
Reptiles	Schedule 5 of the Wildlife &	$\checkmark$	*	Legal protection makes it an offence to: intentionally or recklessly kill, injure or

Table 2: Protected Species Legislative Issues



	Countryside Act 1981 (as amended)			take reptiles from the wild. To damage, destroy or obstruct access to any structure or place which reptiles use for shelter or protection. To disturb reptiles while they are using such a place (Natural England 2008)
Water Vole	Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) Section 9(4) of the Act and Regulation 41 of the Regulations.	~	✓	Legal protection makes it an offence to: intentionally kill, injure or take (capture) a water vole; possess or control a live or dead water vole, or any part of a water vole; intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place.
Otter	Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Schedule 2 of The Conservation of Habitats and Species Regulations 2017, making it a European Protected Species.	*	~	It is an offence to: intentionally or deliberately capture, injure or kill an otter; damage or destroy a breeding or resting place of an otter, or intentionally or recklessly damage or destroy any structure or place used for shelter or protection; intentionally or recklessly disturb an otter in a place used for shelter or protection, or deliberately disturb otters in such a way as to be likely significantly to affect (i) the ability of any significant group of otters to survive, breed, rear or nurture their young, or (ii) the local distribution or abundance; intentionally or recklessly obstruct access to a place used for shelter or protection.
Other protected/notable species	Wildlife and Countryside Act 1981 (as amended).			Other species potentially present throughout the Colwich to Yarlet are include polecat, harvest mouse, European hedgehog and brown hare. If present, these populations are of local/parish value.

Table 3 summarises the relevant designations with regards to the protection of trees.

### Table 3. Tree Designations

Issue	Notes
Trees covered by Tree Preservation Order (TPO)	Tree Preservation Orders currently exist to cover individual trees, tree groups (Group TPO), woodland (Woodland TPO) and areas of trees (Area TPO). Individual and Group TPOs specify the exact position, number and species of the protected trees, whereas Woodland TPOs and Area TPOs protect all trees within an area of land shown on the TPO map as follows: Woodland - All trees young and old, including the woodland floor regeneration; Area - only those trees that were present at the time the TPO was confirmed (trees younger than the date of the TPO are not covered). If in doubt over the protection of specific trees, the local Tree Officer/



	Arboricultural Officer should be contacted for clarification prior to site layout proposals being finalised.
	The Tree Preservation Order prohibits the topping, lopping, damaging, wilful destruction and uprooting of the tress covered by the TPO without prior consent of the Local Authority. This includes any works included in the preliminary management recommendations in the Tree Survey Schedule (Table 3.1, Appendix 1) and any work proposed in close proximity that may have an impact on both above and/or below parts of these trees.
	Consent needs to be sought from the Local Planning Authority if tree removal work or tree management work affect protected trees within the site or those which overhang the site boundary. Tree works must not be carried out without permission.
	Work will also be permitted if it is included in an Arboricultural Impact Assessment, Arboricultural Method Statement and/or Tree Protection Plan approved by the Local Planning Authority where development proposals for a site have been granted Planning Permission.
Trees located within a Conservation Area	Trees located within a Conservation Area are protected similarly to trees covered by Tree Preservation Orders. In order to be able to carry out any work to those trees, the Local Authority should be notified of the intention to carry out the work. The authority has then six weeks to respond. Objections to the works will lead to a Tree Preservation Order being placed on tree groups or individual trees. No response indicates no objections to the work.
	Work will also be permitted if it is included in an Arboricultural Method Statement and Tree Protection Plan approved by the Local Planning Authority where development proposals for a site have been granted Planning Permission.
	The granting of permission to remove trees covered by a TPO by the Local Planning Authority does not remove the need to obtain a felling licence from FC if more than 5 $m^3$ of timber are to be felled in a calendar quarter and none of the exemptions apply.
Hedgerow Regulations	The Hedgerow Regulations 1997 protect most hedgerows from removal without prior consent from the Local Planning Authority (LPA). Where a hedgerow is considered as 'important' as defined by the criteria set out in the Hedgerow Regulations 1997, the LPA can order its retention.

### Planning Regulations

Table 4 summarises the relevant national, regional and local policies relating to nature conservation in relation to the current development proposals.

Table 4:	Planning	Policy
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Legislative Issues			Legislation Information
National Framework	Planning (NPPF)	Policy	The National Planning Policy Framework was published by the UK's Department of Communities and Local Government in March 2019.
			The National Planning Policy Framework is a key part of the government's reforms to make the planning system less complex and more accessible. It vastly simplifies the number of policy pages about planning. The planning practice guidance to support



	the framework is published online and regularly updated.	
Hedgerow Regulations	The Hedgerow Regulations 1997 protect most hedgerows from removal without prior consent from the Local Planning Authority (LPA). Where a hedgerow is considered as 'important' as defined by the criteria set out in the Hedgerow Regulations 1997, the LPA can order its retention.	
UK Post-2010 Biodiversity Framework	The UK Post-2010 Biodiversity Framework was published on the 17July 2012, produced by JNCC and Defra and covers a period from 2011 to 2020.	
	The Framework shows how the work of the four UK countries joins up with work at a UK level to achieve the 'Aichi Biodiversity Targets' and the aims of the EU biodiversity strategy. It identifies the activities required to complement the country biodiversity strategies, and where work in the country strategies contributes to international obligations.	
	The development of the Framework reflects a revised direction for nature conservation, towards an approach which aims to consider the management of the environment as a whole, and to acknowledge and take into account the value of nature in decision-making.	
UK Biodiversity Action Plan	The UK Biodiversity Action Plan (BAP) is the mechanism for dealing with biodiversity conservation in response to the Rio Convention 1992.	
	Governments signing up to this convention are committed to create and enforce national strategies and action plans to conserve, protect and enhance biodiversity.	
	Within the UK BAP, Species Statements and Broad Habitats Statements have been written to outline issues affecting species and semi-natural habitats and broad policies to address them. In addition to these, Priority Species and Habitats have been identified and targets determined in order to maintain and enhance their distribution and contribution to UK biodiversity. These species and habitats are those considered to be at most threat and reported as UK Species Action Plans (SAPs) and UK Habitat Action Plans (HAPs). The UK BAP is implemented through national, regional and local policy.	
Protected Species	A number of species are protected under European and or UK Legislation. The key Legislations are: Bern Convention, The Wildlife & Countryside Act 1981 (as amended), Countryside and Rights of Way Act 2000 (CRoW)	
Stafford Borough Council	The Plan for Stafford Borough: the first part of the new Stafford Borough Local Plan 2014 requires that by 2031 Stafford Borough will have been protected, conserved and enhanced to provide an exceptionally high quality of environmental, historic and landscape character, and provided new green infrastructure / biodiversity enhancement schemes. It sets out policies on design quality, the historic environment, mitigating climate change, natural environment and green infrastructure, sites of nature conservation interest, landscape character, and the Cannock Chase Area of Outstanding Natural Beauty (including the Special Area of Conservation).	



Legislative Issues	Legislation Information
Historic Buildings and Ancient Monuments Act 1953	Historic England is enabled by the Historic Buildings and Ancient Monuments Act 1953 (as amended by the National Heritage Act 1983) to maintain a register of parks, gardens and battlefield sites which appear to Historic England to be of special historic interest. Registration in this way makes the effect of proposed development on the sites and their settings a material consideration. Historic England are a statutory consultee in relation to works affecting Grade I/II* Registered Parks and Gardens.
Ancient Monuments and Archaeological Areas Act 1979	Scheduled Monuments and Areas of Archaeological Interest are afforded statutory protection under the Ancient Monuments and Archaeological Areas Act 1979 (as Amended) and the consent of the Secretary of State (Department for Digital, Culture, Media and Sport), as advised by Historic England, is required for any works.
Planning (Listed Buildings and Conservation Areas) Act 1990	Works affecting Listed Buildings or structures and Conservation Areas are subject to additional planning controls administered by LPAs under the Planning (Listed Buildings and Conservation Areas) Act 1990. In considering development which affects a Listed Building or its setting, the LPA shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses (Section 66). In considering Conservation Areas the planning authority has a general duty to give special attention to the desirability of preserving or enhancing the character or appearance of that area (Section 72).
	The statutory criteria for listing are the special architectural or historic interest of a building. Buildings on the list are graded to reflect their relative architectural and historic interest (DCMS, 2010a, para 7, page 4):
	Grade I: Buildings of exceptional interest;
	Grade II*: Particularly important buildings of more than special interest;
	Grade II: Buildings of special interest which warrant every effort being made to preserve them.
	Historic England is a statutory consultee in relation to works affecting Grade I/II* Listed Buildings.
National Planning Policy Framework	Section 16 of the National Planning Policy Framework (NPPF) sets out the Government's current planning policy in relation to conserving and enhancing the historic environment. The key requirements are summarised below.
	Applicants are required to provide proportionate information on the significance of designated and non-designated heritage assets affected by the proposals and an impact assessment of the proposed development on that significance. This should be in the form of a desk-based assessment and, where necessary, a field evaluation (NPPF, 189).
	LPAs are required to take into account the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation; the wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring; the desirability of new development making a positive contribution to local character and distinctiveness; and opportunities to draw on the contribution made by the historic environment to the character of a place (NPPF, 185/192).
	In determining planning applications, great weight should be given to the

 Table 5. Heritage and Archaeology



		conservation of designated heritage assets - World Heritage Sites, Scheduled Monuments, Listed Buildings, Protected Wreck Sites, Registered Parks and Gardens, Registered Battlefields or Conservation Areas designated under the relevant legislation (NPPF, 193/194).
		In weighing applications that affect directly or indirectly the significance of a non-designated heritage asset, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset (NPPF, 197).
		LPAs should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their significance and the impact, and to make this evidence publicly accessible and any archives deposited with a local museum or other public depository (NPPF, 199).
Stafford Council	Borough	The Plan for Stafford Borough: the first part of the new Stafford Borough Local Plan 2014 requires that by 2031 Stafford Borough will have been protected, conserved and enhanced to provide an exceptionally high quality of environmental, historic and landscape character. It sets out policies on design quality and the historic environment.

## Table 6. Water Environment

Legislative Issues	Legislation Information
National Planning Policy Framework (NPPF) - Technical Guidance to the National Planning Policy Framework (2019)	This document provides additional guidance to local planning authorities to ensure the effective implementation of the planning policy set out in the National Planning Policy Framework on development in areas at risk of flooding and in relation to mineral extraction. This guidance retains key elements of Planning Policy Statement 25 and of the existing minerals policy statements and minerals planning guidance notes which are considered necessary and helpful in relation to these policy areas
Flood and Water Management Act (2010)	This Act requires the Environment Agency to "develop, maintain, apply and monitor a strategy for flood and coastal erosion risk management in England".
National Flood and Coastal Erosion Risk Management Strategy (NFCERM) (2018)	The NFCERM considers all forms of flooding, including rivers and smaller watercourses, the sea, surface runoff from land, groundwater, sewers (where this is caused by an increase in volume of rainwater), reservoirs, canals and other artificial sources.
River Trent: Catchment flood management plan (2010)	An overview of the flood risk across the river catchment and recommended ways of managing the risk now and over the next 50 to 100 years.
Staffordshire Local Flood Risk Management Strategy (2015)	Local Flood Risk Management Strategy sets out roles and responsibilities for flood risk management, assesses the risk of flooding in the County, where funding can be found to manage flood risk, what our policies are as a Lead Local Flood Authority and what our objectives and actions are to manage flood risk
Southern Staffordshire Councils Level 1	This document provides an understanding of the risk from all types of flooding across Southern Staffordshire and presents clear and robust evidence. It also provides useful information to inform future Infrastructure Planning and



Strategic Flo	od	Neighbourhood Plans.
Risk Assessme	ent	
(2019)		

#### Industry Best Practice

Further best-practice guidance and standards have been considered in developing the CEMP, where they are perceived to add value to the proposed approach to the development of IPGC. This includes:

- WRAP Guidance Using Construction Consolidation Centres to reduce construction waste and carbon emissions. This guidance was developed to provide an overview of CCCs and provide information on when they should be considered, in addition to an indication of some of the costs and benefits.
- Gov.uk Guidance: **Pollution prevention for businesses** (July 2016). Official guidance in England for how businesses and organisations can avoid causing pollution from oil and chemical storage, construction and other activities.
- Strategic Forum for Construction **Water Saving Guide**. Guide providing simple tips for saving water on construction sites.
- Greater London Authority The Control of Dust and Emissions during Construction and Demolition SPG. Resource for best practice measures.
- BS 5228-2:2009 'Code of practice for noise and vibration control on construction and open sites'
- CL:AIRE **Definition of Waste: Code of Practice.** Provides a clear, consistent and efficient process which enables the reuse of excavated materials on-site or their movement between sites. It can provide an alternative to Environmental Permits or Waste Exemptions.



## 5. Roles and Responsibility

### Overarching / general environmental responsibility

This section of the CEMP sets out the environmental roles and responsibilities on the Project. Responsibilities sit with a number of partners involved in delivery of the Project, including:

- IPGC as the organisation overseeing delivery of the Project;
- International Design Group as principal golf course designers;
- The main construction Contractor and sub-contractors involved in construction activities;
- Ecus working on behalf of IPGC and IDG as environmental advisors; and
- HS2.

Ultimately all persons working on the Project, including suppliers, have a responsibility for aspects of the environment over which they have control, including adherence to project-level environmental requirements, licence conditions, the minimum requirements set by HS2 and all relevant legislation and planning policies.

#### Environmental Roles and Responsibilities on the Project

IPGC

• Provide leadership through promoting a positive environmental culture on the project.

IDG

• Ensure the management and mitigation measures developed during the design process and clearly communicated to the main construction contractor and their sub-contractors

Main Contractor (TBC)

- Ensure the availability of resources to establish implement and maintain the CEMP and EAP.
- Provide leadership through promoting a positive environmental culture on the project.
- Oversee the implementation of the CEMP and EAP including actions, controls and mitigation. Ensure the documents remains current as the Project progresses, through to October 2022.
- Appoint Environmental Champion for the Project
- Appoint an Environmental Advisor for the Project
- Demonstrate proactive support for environmental requirements, including ensuring sufficient resourcing for the Environmental Actions
- Ensure relevant training is provided to all staff prior to commencing individual activities.
- Ensure environmental audits are carried on the Project including reporting.
- Ensure the Procedure for an Environmental Incident is implemented.
- Work with the Project Environmental Advisor to communicate and promote the environmental requirements and culture to all persons working on the Project.

Project Environmental Advisor [ECUS]



- Make applications for relevant protected species licences and work with IPGC and the main contractor to ensure work is undertaken according to the licence conditions.
- Develop method statements and toolbox talks and work with the contractor and IPGC to ensure they are delivered and managed appropriately.
- Provide an Environmental Advisor to fulfil the role of Ecological Clerk of Works throughout the construction period and to ensure compliance with all ecological and environmental management and mitigation measures, with the appointment of further technical advisors as necessary.

HS2

- Set out the minimum environmental requirements for the delivery of the scheme, including the Construction Code of Practice.
- Share information and results of remaining site surveys as relevant, including archaeology trenching and ecology surveys.



## 6. Environmental Action Plan

The Environmental Action Plan (EAP) summarises the management and mitigation measures that will be required to ensure the reconfiguration of IPGC golf course will comply with the assumptions and environmental impact assessment contained within the HS2 Phase 2a Supplementary Environmental Statement 2 (SES2), the Additional Provision 2 Environmental Statement (AP2 ES) (February 2019), and all relevant legislation and planning requirements as they apply to the works. The EAP is a working document and should be reviewed and updated on a regular basis.

The EAP, which is set out in Table 7, identified the key environmental topics, the objectives to be achieved for each, the actions to be taken and responsibility for implementation.

Topic	Objectives	Action	
Cultural Heritage	Minimise disruption to the Conservation Area from construction traffic	<ul> <li>To minimise the disruption to the conservation area and heritage assets implement the actions detailed in the Traffic and Transport section of the EAP below.</li> <li>Maintain key views into and out of the Conservation Area by ensuring the implementation of the design and planting plan.</li> </ul>	Contractor
Archaeology	To protect significant archaeological assets	<ul> <li>In the event of significant heritage assets being identified during the trenching, the scope of mitigation (whether via excavation or preservation <i>in situ</i>) and mechanisms for delivering that mitigation will be identified and agreed between HS2 Ltd and IPGC following consultation with the archaeological advisor to the LPA, and, if necessary, Historic England. The scope of that mitigation will depend on the significance and location of the assets, should any be found.</li> <li>An archaeological management plan will be required based on the geophysical survey, which will need updating once the archaeological investigation is complete.</li> </ul>	IPGC Contractor IDG

#### Table 7 Environmental Action Plan for the Ingestre Park Golf Club redevelopment works



	Protect existing and	•	Where possible, key habitat areas will be retained and enhanced, such as existing trees,	Contractor
Ecology	restore lost habitats		tree lines and hedgerows. This will ensure wildlife corridors are retained, such as bat commuting routes and small mammal corridors, and will also help to prevent harm to any individual species during construction. These will be marked up by the Ecological Clerk of Works.	Ecus
			New habitats will be created as part of the reconfigured scheme, with 136,160 m <sup>2</sup> native rough grasses, long rough with wildflower mix, wetland, drainage ditches, waterbodies and lakes. The reconfigured golf course design includes planting of 150,000 (47,856 m <sup>2</sup> ) woodland whips / feathers and approximately 400 heavy standard trees with tree cover being 11%.	
			Existing trees and hedgerows will be protected as far as possible by routing the golf course away from these important aspects of the site.	
			Ecologically sensitive areas will be protected with appropriate fencing in accordance with relevant standards e.g. BS5837:1991. Appropriate measures will also be agreed and implemented to protect any identified wildlife in accordance with the main ES, AP and SES, the Wildlife and Countryside Acts and relevant local authority policies. The Ecological Clerk of Works (ECoW) will undertake a watching brief during works to ensure that these measures are adopted.	
Ecology	To protect roosting bats		While the reconfiguration of the golf course will seek to retain mature trees, the loss of some mature trees is likely. Working methods in areas where there are trees with high bat roost potential will need to be mindful of the possible presence of roosting bats, and precautionary measures will need to include keeping noise, vibrations and light disturbance to a minimum when working in this area.	Contractor Ecus
			Where suitability for these species has been previously determined by an ecologist, or where suitable roost features for these species have been observed i.e. cracks, dead wood, woodpecker holes, the ecologist should be contacted for advice prior to works taking place. Inspections of potential roost features may have to be undertaken by a suitably qualified ecologist.	
			Artificial Roosting provision, including a pole mounted maternity bat box near the pond on the northern part of the site (see the LEMP for location and specification), along with other tree mounted bat boxes, in areas of woodland creation is required to mitigate for any loss. These will be installed at least 50 metres from the new railway and located on	



		<ul> <li>mature trees in woodland or suitably mature trees along hedgerows. The boxes shall be located in the same habitat in which the bats were previously recorded roosting. The specific detail is provided in the LEMP.</li> <li>Habitat creation measures, including the creation of ponds, species-rich grasslands, hedgerows and broadleaved woodland to compensate for the loss of bat foraging habitats. This includes 400 heavy standard trees and a total of 4.8 ha of woodland creation. Once established, these will provide suitable bat foraging and commuting habitat.</li> <li>The measures which will be adhered to during construction to safeguard roosting bats in the event that they are present on Site at the time of works are detailed in the Reasonable Avoidance Measures in Appendix 1. These mitigation measures are based on legal requirements, best practice and the specific requirements for the works.</li> </ul>	
Ecology	To protect existing known populations of GCN and additional populations which might be in the vicinity of the works	<ul> <li>A European Protected Species Mitigation licence (EPSL) will be required for works in land parcel 5255 as a result of it being approximately 150m from a known medium population of GCN. The EPSL will look to exclude GCN from the development site. Works will proceed in compliance with the conditions set out in the licence. However, it is possible that some GCN will remain and so works will need to follow a precautionary method of working, including the use of Toolbox Talks, having an Ecological Clerk of Works present for the removal of hedgerows and areas of longer grassland, and best practice working methods including for the storage of materials (as detailed in Appendix 1).</li> </ul>	Contractor IPGC Ecus
		• An EPSL will be required for works in land parcel 6730. Ponds within and in proximity to land parcel 6730 are yet to be surveyed for the presence of great crested newts. Although the site itself, for the most part, contains sub-optimum GCN habitat in the form of arable fields, and the phase one habitat survey description of the single pond within the site is <i>"Eutrophic pond surrounded by mature willows, white and goat, with some eared willow shrub. The pond has had a large amount of grain dumped in it. There is some bramble and willow scrub surrounding the pond"</i> (HS2 survey notes, 2019), indicating it will also be sub-optimum for GCN. There are, however, off site ponds in close proximity which have not been surveyed and some areas of suitable habitat on site, and as such the presence of great crested newts cannot entirely be ruled out and works will need to be undertaken under licence and follow a Method Statement Reasonable Avoidance Measures and to ensure GCN are not harmed (Appendix 1).	
		Works will proceed in accordance with the conditions set out in the EPSL. The measures which will be adhered to during construction to safeguard GCN in the event	



		that they are present on Site at the time of works are detailed in the Reasonable Avoidance Measures in Appendix 1. These mitigation measures are based on legal requirements, best practice and the specific requirements for the works.	
Ecology	To protect badger populations which might be present on site	<ul> <li>Two outlier badger setts have been confirmed on land parcel 6730 and a licence will be required to interfere with these.</li> <li>It is also likely that badgers will forage and commute on the land, and so best practice measures during the construction phase must include a pre-commencement check for any new setts and the provision of an escape ramp within any open trenches/excavations that are left unattended overnight.</li> </ul>	Contractor Ecus
Ecology	Wintering birds	<ul> <li>Breeding and wintering bird surveys have been undertaken. Only one field (the large arable field - LP6730) is likely to provide habitat for golden plover and lapwing (target species). However, these species have not been identified during the surveys conducted so far. No other notable wintering bird species were identified. Off-site compensation is recommended in the form of appropriate management of nearby farmland to maintain local presence of suitable habitat.</li> </ul>	HS2 Contractor
		• Habitat creation on the reconfigured course will also be designed to provide some compensation for the loss of breeding and wintering bird habitat. In relation to the two target species (lapwing and plover) this will include planting extensive areas of dwarf or tall fescue to create a short tussocky sward. This will be mown twice a year to mimic heavy grazing from late summer onwards to provide a short sward for nesting lapwings the following spring. No mowing will take place during the breeding season (March to July). Areas of damp pasture on the course and in proximity to the site will provide damp soils for feeding once chicks have hatched.	
		• Management plans will be developed to ensure these habitats are managed and maintained appropriately to provide some compensation for this habitat loss.	
		• Works in proximity to existing trees and hedgerow should take account of wildlife legislation, most notably the potential presence of nesting birds. Any works should be timed to avoid the nesting bird season, which encompasses March to end of August. If this is not possible, trees/hedgerow to be impacted should first be subject to a nesting bird survey.	
Ecol	Reptiles	• The reptile surveys undertaken to date have found an absence of reptiles on the new sites. However, there is a very small area of suitable habitat along the western site	HS2 Contractor



		<ul> <li>boundary and works will therefore need to be sensitive to the possible presence of reptiles.</li> <li>As only very small areas of habitat have been identified for reptiles, and surveys undertaken to date have indicated they are absent from the site, the chance of encountering reptiles is considered to be low. Works will need to be undertaken in accordance with a method statement to avoid harming this species. The inclusion of the habitats described in this report and the provision of new hibernacula will also serve to enhance the site for reptiles.</li> <li>In the unlikely scenario that a large population of reptiles is encountered on this small area of the site, translocation to a receptor site under a method statement ahead of site works will be required (April – June or August – September).</li> <li>The measures which will be adhered to during construction to safeguard reptiles in the event that they are present on Site at the time of works are detailed in the</li> </ul>	
~	Riparian mammals	<ul> <li>Reasonable Avoidance Measures in Appendix 1. These mitigation measures are based on legal requirements, best practice and the specific requirements for the works.</li> <li>A pre-construction check of the habitats on site for signs of riparian mammals, namely</li> </ul>	Contractor
Ecology		water voles and otters will be undertaken by the ECoW or another Suitability Qualified	Ecus
		• All key site personnel will be briefed via a Toolbox Talk prior to the start of works covering relevant detail on otter ecology/identification, legislation and best working practices (Appendix 2). The Appointed Ecologist will be on-call throughout the duration of the works and is contactable should otters be discovered at any time during the works.	
		The measures which will be adhered to during construction to safeguard riparian mammals in the event that they are present on Site at the time of works are detailed in the Reasonable Avoidance Measures in Appendix 1. These mitigation measures are based on legal requirements, best practice and the specific requirements for the works.	



Ecology	Other key and notable species	<ul> <li>Best practise measures should be adopted for polecat, harvest mouse, European hedgehog and brown hare which are known to be present in the Colwich to Yarlet area.</li> <li>Any brash or rubble piles that require dismantling should be done so by hand. In the event that a hedgehog is found it can be moved to a place of safety via a gloved hand.</li> </ul>	Contractor
Ecology	Non-native Invasive Plant Species	<ul> <li>A very dense area of Himalayan balsam was recorded alongside the existing ditch on land parcel 6730 (HS2 survey data 2019). This will need to be eradicated from the site between April and September to prevent any spread.</li> <li>A specialist contractor will be appointed to undertake the eradication works using standard procedures. For example, Himalayan balsam can be controlled by spraying the foliage with glyphosate. The plants should be sprayed in the spring before flowering but late enough to ensure that germinating seedlings have grown up sufficiently to be adequately covered by the spray.</li> </ul>	Contractor
Trees	Protect trees retained close to the works. Observe Tree Preservation Orders (TPOs).	<ul> <li>The additional land to the north of the highway has been surveyed with a supporting arboricultural impact assessment and tree protection plan (report reference: ADAS 1050988 – Stage 1 HS2 Tree Survey Report and Arboricultural Implications Assessment. Land adjacent to Ingestre Park golf club, Ingestre, Stafford. Relocation of golf course). Based on this tree protection plan the following can be carried out: <ul> <li>Removal of indicated trees; and</li> <li>Installation of tree protective fencing.</li> </ul> </li> <li>A tree survey to BS5837:2012 should be carried out for the additional land to the south of the highway prior to construction to identify any trees or groups of high value. These trees can then be retained and protected as part of any future designs. Following a survey an arboricultural impact assessment can be completed alongside an arboricultural method statement that will include tree removal and tree protection plans that are required as part of good practice. As a minimum, the following should be identified: <ul> <li>The trees that are protected by an SBC TPO or are within a Conservation Area;</li> </ul> </li> </ul>	Contractor



<ul> <li>High value trees and groups that should be retained;</li> <li>Trees and hedgerows that can be translocated and incorporated within any new design;</li> <li>An assessment of trees that will require removal or pruning based on an up to dat</li> </ul>	v
design;	v
• An according to the trace that will require removal or pruning based on an up to dat	
design layout;	e
Tree works, including removals and pruning, and the impact this will have on the tre population within the new design;	e
The potential impact to any trees that are retained within the new design;	
Tree protection required including tree protective fencing and the location of have roads to ensure that accidental collisions are avoided and effects of compaction with not impact the Root Protection Areas (RPAs);	
Implementation of Arboricultural Clerk of Works to oversee the works relating to tree and their protection; and	s
Requirements for compensatory planting to mitigate the loss of trees.	
<ul> <li>Avoid excessive soil compaction when preparing areas of ground that are to be planted with trees in the new design.</li> </ul>	
ی Ensure EAP is Monitor EAP and CEMP	IPGC
<ul> <li>Coordinate monthly calls with Project Environmental Champion to monitor progress on</li> </ul>	Contractor
<ul> <li>Coordinate monthly calls with Project Environmental Champion to monitor progress on environmental actions</li> </ul>	IDG
Coordinate quarterly meetings with Project Director and Operations Manager to review progress and key issues.	Ecus
<ul> <li>Poster / white-board in Site office presenting key indicators / performance measures, updated with latest performance.</li> </ul>	



Storage & logistics	Minimise environmental risk from materials storage and site management	Materials Storage	Contractor
		Materials to be stored correctly to avoid physical or weather damage	
		• To protect the Pasturefields SAC/SSSI, which is in close proximity to the site, materials should be stored in a way that minimises risk of contamination or run-off to ground and water	
		• Investigate use of a Consolidation Centre, to improve delivery, storage and reuse of unwanted materials.	
		[also see Fuel Storage and Use]	
ics	Minimise environmental	Fuel Storage and Refuelling	Contractor
& logistics	risk from storage and use of fuel and oils on	Designated refuelling stations;	
& lo	Site	<ul> <li>Away from drainage inlets;</li> </ul>	
Storage		<ul> <li>Fuel storage in double-bunded containers with 110% capacity;</li> </ul>	
tora		<ul> <li>Refuelling stations on impermeable surface, where possible;</li> </ul>	
S		$\circ$ All gauges, valves, vents and nozzles kept within the bund when not in use; and	
		<ul> <li>Valves locked when not in use and only made available to authorised and competent persons.</li> </ul>	
		Drip trays or Plant Nappy in use in use under plant/machinery	
		<u>Appropriate spill kits available;</u>	
		<ul> <li>Clearly signed spill kits at each refuelling station.</li> </ul>	
		<ul> <li>Relevant staff trained in the use of spill kits.</li> </ul>	
ics		Chemical storage	Contractor
and logistics		• Utilise system of bulk paint containers, if possible. Paint delivered in large plastic bags for transfer to reusable containers on Site.	
and		• Paints and chemical to be stored securely in bunded containers, away from drains.	
		Spill kits available, with signage and employees trained in its use.	
Storage		Paint and chemical cleaning to be carried out over impermeable surfaces.	



		Used paint cans left to dry out in a secure bunded container.	
ce use & Carbon	Construction – minimise use of fuel, electricity and water	Construction Resource and Energy Efficiency:	Contractor
		Undertake energy review of plant and equipment on site:	
		<ul> <li>Identify measures to reduce significant sources of construction energy use and carbon emissions.</li> </ul>	
		<ul> <li>Ensure generator output is appropriately specified where mains is not an option.</li> </ul>	
Resource		<ul> <li>Use tools with high energy efficiency rating.</li> </ul>	
Res		Ensure all plant and equipment is switched off when not in use	
		All lights and heaters turned off when not in use	
		<ul> <li>Mains electricity used over generators (wherever possible) –.</li> </ul>	
		Plant fuel consumption monitored with targets and incentives	
		Plant and machinery correctly maintained	
		Use LED lighting	
		• Monitor energy use and carbon dioxide (CO <sub>2</sub> ) emissions from relevant site activities.	
		• Consider carbon impacts and energy efficiency in procurement, maintenance and use of energy and carbon efficient construction plant.	
nou		Construction Water Use	Contractor
Carbon		Measure water use on site including mains and bowser use.	
ంర		• Fix leaks.	
Resource use		Fit trigger guns to hoses.	
		Use high pressure low volume spray to wash out concrete wagons, re-use washout water in concrete batching where possible.	
		Use hydraulic spinning systems on dust suppression vehicles where possible.	



and	<u>Site office – minimise</u>	Site-office Resource and Energy Efficiency:	Contractor
use a	use of power, water and paper	Energy efficient lighting and equipment (such as lighting sensors).	
l ec	papor	Equipment turned off when not in use and at the end of the working day.	
Resource		Thermostats set to 20°C or lower.	
Res		Printing only when required.	
		Boiling only the water required.	
lity	Control dust and emissions during demolition and construction	Construction Dust:	Contractor
Air Quality		• A system of air quality dust monitors will be installed at Ingestre Park Road as close as reasonably possible to residential properties during construction works. The results from the monitors will be reviewed monthly	
Dust &		<ul> <li>Schedule Env Audits for times of high dust risk activities, or during prolonged dry and windy conditions.</li> </ul>	
		Very dry periods monitored by Ops Manager (for special dust measures).	
Vibration,		<u>Vehicles and dust</u> :	
		<ul> <li>Metal or dampen down vehicle access routes.</li> </ul>	
se &		<ul> <li>Speed limits enforced on access route.</li> </ul>	
Noise		<ul> <li>Wheel washing to avoid trackout</li> </ul>	
		<ul> <li>Road sweeping.</li> </ul>	
		<u>Spoil and dust sources:</u>	
		<ul> <li>Spoil removed promptly where practicable.</li> </ul>	
		<ul> <li>Damping down, covering or seeding.</li> </ul>	
		<u>Operations:</u>	
		<ul> <li>Use of screens or barriers around particularly dusty activities</li> </ul>	
		<ul> <li>Use wet cutting and dust suppression kits, where appropriate</li> </ul>	
		<ul> <li>Minimise drop heights from loading or handling equipment.</li> </ul>	



		No bonfires.	
		Effective stakeholder communications (including contact details displayed on Site boundary)	
		Maintain Complaints and Issues Log. Implement neighbour dust check if require.	
lity	Control noise and vibration during demolition and construction	Construction Noise:	Contractor
&Air Quality		• Noise monitoring requirements will be specified in a Noise Trigger Action Plan, which is being prepared at the time of writing. These will include the installation of noise monitoring equipment and reporting.	
Dust		• All method statements will be checked to ensure that they contain appropriate measures for controlling noise.	
Vibration, Dust		Develop plan of noise sensitive residents and businesses around the Site – displayed on Site notice board	
ంర		Subcontractors to ensure main contractor is notified well in advance of any noisy activities.	
Noise		All plant, vehicles and equipment is switched off when not in use	
z		• All machinery will be fitted with effective silencers where possible, battery power during sensitive hours	
		Locate noisy plant away from public and neighbours, where possible	
		Hours of work	
		Speed limits and wheel washing to reduce vehicle noise.	
		Remove the need for reversing – to avoid audible alarms – (one-way system)	
		Minimise drop heights from loading or handling equipment.	
		• As part of the registration with the Considerate Constructors Scheme we will target a gold award that promotes excellence with being a 'good neighbour', which will include communicating programme and works information with our neighbours and affected parties.	
		• A suggestion box will be located near the Sites for residents to provide feedback and suggestions of how things could be improved.	



		No radios or music will be played on Site	
Waste	All materials to be treated in line with the Waste Hierarchy	<ul> <li>Waste Duty of Care</li> <li>Only use approved waste contractors.</li> <li>Check waste carrier and facility licences regularly.</li> <li>Document all waste transfer notes or internal waste movements sheet.</li> <li>Check waste transfer or consignment notes and stop transfer where incorrect.</li> <li>Exemption for re-use of waste onsite.</li> <li>Provide designated secure and covered storage area.</li> <li>Exemption or permit to allow receipt of waste soil from another location.</li> <li>CL:AIRE Definition of Waste Code of Practice to facilitate re-use of excess soil and not</li> </ul>	Contractor
Waste		<ul> <li>being classified as a "waste".</li> <li>Waste Strategy</li> <li>The contractor will develop a waste strategy in line with the HS2 waste strategy, which is a part of the Code of Construction Practice</li> </ul>	Contractor
Water and Drainage	No discharges or abstractions to or from the external water environment, other than as permitted by relevant licenses and permits. No increase to flood risk through delivery of works, including through alteration of the existing landform. All controls to be provided in accordance with best practise	<ul> <li>Surface water and drainage</li> <li>The contractor will development a Construction Surface Water Management Plan (CSWMP), the key objective of which will be to ensure that the construction works are undertaken in compliance with environmental legislation and that no contaminants are released from the site to any waters, sewerage network or the bed or banks of any watercourses, unless permitted and approved.</li> <li>The CSWMP plans and drainage drawings should ensure any potential points of discharge are present and up to date for the stage of construction works and level of disturbance. It must be available for inspection by the administering authority on request.</li> <li>Surface Water Management Plans should be updated as necessary so as to ensure that any changes to retention, management controls or discharge locations are included as necessary.</li> <li>Relevant construction water discharge or abstraction permits are to be retained on site, so as to be available for inspection by the administering authority on request.</li> </ul>	IDG Contractor


managan	nont	There should be no uppermitted release of ourface waters from site. All ourface water
managen requirem		There should be no unpermitted release of surface waters from site. All surface water releases or discharges are recommend to be tested and provide a field test permit for discharge, in accordance with this CSWMP and any specific conditions of EA permitting.
	•	Storm water runoff will be directed towards appropriate retention areas and controls so as to control the potential for uncontrolled emissions of water and associated contaminants (such as soil, hydrocarbons and other surfactant contaminants) from the site, wherever practicable.
	•	Access and egress points to or from the site will be designated access points. Where there is the potential for sediment is tracked onto external sealed roads, it must be removed promptly to reduce spreading and nuisance mud tracking.
	•	All surface waters should be discharged from site in accordance with any extenuating permit and as defined or conditioned by permitting agents. Any waters removed from the site must also then be removed in accordance with wastewater permitting requirements.
	•	Applicable surface water and flood risk management controls should be enacted and implemented as soon as possible within the development of the golf course so as to mitigate against potential uncontrolled emissions to receiving environment.
	•	Surface, foul or combined water quality emission should be monitored and recorded as required under any extant permitting requirements.



# 7. Training, Competency and Communication

## Introduction

The implementation of the CEMP will be supported through a structured training programme for site staff and sub-contractors alongside a communications plan. This will ensure the specific objectives, targets and procedures set out in the CEMP are communicated effectively across the project supply chain and that individuals have the basic competencies to ensure their delivery.

This should be developed by the appointed construction contractor prior to commencing on site.



# 8. Project Environmental Audits and Monitoring

The appointed construction contractor should develop a programme of environmental audits for the construction period (completion September 2022) to ensure the effective implementation of the CEMP and to measure progress against the objectives and targets.

The programme should identify the roles and responsibilities for carrying out the audits. The purpose of the audits will be to identify noncompliance with the actions identified in the EAP and note areas for improvement. The Project Environmental Advisor will recommend suitable mitigation measures, if needed, as part of the audit process.



# 9. Environmental Incidents

# Background

An Environmental Incident is an event that may potentially cause harm to an environmental receptor e.g. water, air, land, wildlife or habitat. Environmental incidents include:

- Chemical or oil spillages and other pollution events;
- Emissions to air of gas, dust or fumes;
- Pollution of watercourses;
- Flooding;
- Noise or nuisance incident;
- Fly tipping or other waste issues;
- Damage to trees;
- Damage to listed building (Freemen's Cottages) and
- Encountering an animal on Site which may be a protected species.

## Procedure

The appointed construction contractor should develop a site-specific Environmental Incident Response Procedure for managing and reporting of incidents and emergencies on Site, including Environmental Incidents.

This Site-specific Procedure should be incorporated into the CEMP.



Appendix 1 Reasonable Avoidance Measures



Mitigation	Reason	Timing				
Toolbox Talk						
<ul> <li>All key site personal will be briefed via a Toolbox Talk prior to the start of works. The Toolbox Talk will include relevant detail on otter ecology/identification, legislation and best working practices.</li> <li>A toolbox talk Site guide (Appendix 2) including an identification guide will be incorporated into the site induction process and a copy shown to all staff and made available for reference on Site at all times.</li> <li>The Appointed Ecologist will be on-call throughout the duration of the works and is contactable should otters be discovered at any time during the works.</li> </ul>	To ensure all staff are aware of the potential presence of otters on Site, identify areas with an increased risk of presence, and explain the relevant legislation and the proposed methods of working as detailed below. To ensure that all contractors are aware of appropriate precautionary measures to minimise the risk of committing an offence during the works and what to do if otters are encountered.	Prior to works commencing.				
Best Practice Working Methods           Construction lighting will be kept to a minimum and illumination of the	To minimise the risk of disturbance to otters if	Throughout				
surrounding habitats will be avoided.	present in habitats adjacent the Site.	works.				
Safeguards must be put in place to <u>prevent pollution or run-off events</u> <u>arising from the works.</u> Contained designated areas will be used for the <u>washing of vehicles</u> . <u>Designated areas will also be used for refuelling</u> (ideally on an impermeable surface).	Good general housekeeping of the site will be employed to ensure there is no pollution or run-off into the river and nearby ditches.	Throughout works.				
Storage areas for chemicals, fuels, materials / equipment as well as the Site compound will be <u>located well away from the surrounding</u> <u>river/ditches</u> . <u>Bunded tanks should be used for the storage of any fuel,</u> <u>oil or other potential pollutants.</u>						
Encountering Otters						
Should signs of otter be encountered on site or within close proximity, work will cease in the immediate area and the on-call Appointed Ecologist to be contacted for advice.	To protect otters in the event that they are present at the time of works.	At all times.				
	Toolbox Talk         All key site personal will be briefed via a Toolbox Talk prior to the start of works. The Toolbox Talk will include relevant detail on otter ecology/identification, legislation and best working practices.         A toolbox talk Site guide (Appendix 2) including an identification guide will be incorporated into the site induction process and a copy shown to all staff and made available for reference on Site at all times.         The Appointed Ecologist will be on-call throughout the duration of the works and is contactable should otters be discovered at any time during the works.         Best Practice Working Methods         Construction lighting will be kept to a minimum and illumination of the surrounding habitats will be avoided.         Safeguards must be put in place to prevent pollution or run-off events arising from the works. Contained designated areas will also be used for refuelling (ideally on an impermeable surface).         Storage areas for chemicals, fuels, materials / equipment as well as the Site compound will be located well away from the surrounding river/ditches. Bunded tanks should be used for the storage of any fuel, oil or other potential pollutants.         Encountering Otters         Should signs of otter be encountered on site or within close proximity, work will cease in the immediate area and the on-call Appointed	Toolbox Talk         All key site personal will be briefed via a Toolbox Talk prior to the start of works. The Toolbox Talk will include relevant detail on otter ecology/identification, legislation and best working practices.       To ensure all staff are aware of the potential presence of otters on Site, identify areas with an increased risk of presence, and explain the relevant legislation and the proposed methods of working as detailed below.         A toolbox talk Site guide (Appendix 2) including an identification guide will be incorporated into the site induction process and a copy shown to all staff and made available for reference on Site at all times.       To ensure that all contractors are aware of appropriate precautionary measures to minimise the risk of committing an offence during the works and is contactable should otters be discovered at any time during the works.         Best Practice Working Methods       To minimise the risk of disturbance to otters if present in habitats adjacent the Site.         Safeguards must be put in place to prevent pollution or run-off events arising from the works. Contained designated areas will also be used for refuelling (ideally on an impermeable surface).       To protect otters in the event that they are present at the Site compound will be located well away from the surrounding river/ditches. Bunded tanks should be used for the storage of any fuel, oil or other potential pollutants.         Encountering Otters       Should signs of otter be encountered on site or within close proximity, work will cease in the immediate area and the on-call Appointed				



Amphibia ns	Toolbox Talk						
	<ul> <li>All key site personal will be briefed via a Toolbox Talk prior to the start of the works. The Toolbox Talk will include relevant detail on <u>GCN</u> <u>ecology/identification, legislation and best working practices.</u></li> <li>A toolbox talk Site guide (<b>Appendix 2</b>) including an identification guide will be incorporated into the site induction process and a copy shown to all staff and made available for reference on Site at all times.</li> </ul>	To ensure all staff are aware of the potential presence of amphibians on Site, identify areas with an increased risk of presence, and explain the relevant legislation and the proposed methods of working as detailed below. To ensure that all contractors are aware of appropriate precautionary measures to minimise the risk of committing an offence during the works and what to do if amphibians (including GCN) are encountered.	Prior to works commencing.				
	Best Practice Working Methods						
	Prior to works commencing, a site operative will conduct a undertake a hand search for GCN <u>which may be harmed by the works</u> ahead of works in areas of high suitability habitat, such as hedgerows, rough grassland, and works in close proximity to ponds .	To minimise the risk of harming amphibians during Site works in the unlikely event that they are present at the time of works.	Throughout works.				
	All Site personnel to keep a high level of vigilance for amphibians (including GCN) <u>at all times during works.</u> High vigilance should be employed in particular <u>during vegetation clearance and excavations as amphibians may be found sheltering in these areas.</u>						
	Careful storage of materials and waste on Site should be observed at all times to avoid colonisation by amphibians.	Good general housekeeping of the Site will be employed to ensure there is no build-up of debris or other waste which may create suitable habitats for	Throughout works.				
	All materials/kit on Site to be stored in a designated area located away from any on Site suitable habitats (i.e. grassland, scrub, long vegetation). All materials will need to be raised off the ground (e.g. on pallets) and/or stored on areas of hardstanding or bare ground away from long vegetation.	protected species.					
	Rubble/spoil and any other materials arising from the works <u>should be</u> removed from the Site as quickly as possible for the same reasons, or placed in a skip or other sealed container immediately if stored on Site.						



<b></b>		ITAL CONSULTANTS	
	Encountering GCN or Common Amphibians.		
	Where amphibians are encountered the animals should be allowed to move away from the working area of their own volition (where possible) and should not be handled (unless they are in immediate risk of harm). If the animals are in immediate <u>risk of being harmed</u> by the activity, they should be placed into <u>a secure container and moved to a suitable</u>	To protect amphibians (including GCN) in the event that they are present at the time of works.	At all times.
	area of cover away from the area of works. If GCN is found at any moment during the works, work must stop and		
_	the Appointed Ecologist should be consulted for further advice.		
Bats	Best Practice Working Methods		
	Light should be kept to a <u>minimum throughout the works to at, or near</u> <u>horizontal and ensure that only the task area is lit</u> . Hooded lights or flat cut-off lanterns or accessories should be used to <u>shield or direct light to</u> <u>where it is required</u> .	To minimise the risk of disturbance of bats if present in habitats adjacent on structure on the Site.	Throughout works.
	No artificial light should fall directly on the adjacent vegetation or structures at any time during the works.		
	The features should be protected from dust through using dust protection measures such as watering down surfaces when moving the ballast.		
	Noise levels should be kept to <u>a minimum while in close proximity to</u> <u>trees with potential roost features through 'quiet running techniques'</u> including turning off all machinery when not in use.		
	Encountering Bats		I
	Should the presence of roosting bats be suspected, works should cease in the immediate area and the Appointed Ecologist to be contacted for advice.	To protect bats in the event that they are present at the time of works.	At all times.



Reptiles	Best Practice Working Methods					
	Prior to works commencing, all operatives must be briefed by a tool box talk to ensure they understand the risks associated with working in habitat potentially suitable for reptiles.	To minimise the risks of harming reptiles which might be present on site	Throughout			
	Works should be undertaken with care and by hand.					
	If debris on the ground is removed or if de-vegetation is necessary in the small area of site where reptiles might be present, the ground beneath should be checked for the presence of reptiles. The removal of debris or vegetation should preferably be undertaken during the reptile active season (April to October) to avoid potential disturbance of hibernacula. Work should proceed from the centre of the site outwards, to allow any reptiles present to escape into surrounding habitat. If heavy machinery is used, it should be placed on areas of ground least likely to support reptiles (for example, on short vegetation. The works area should be kept free of debris/rubble/cut vegetation to discourage reptiles from occupying the site during works.					
	Encountering Reptiles					
	If reptiles are found, work in the immediate area should stop and the Appointed Ecologist_should be contacted for advice.					



# Appendix 2. Otter Toolbox Talk



What to look for:





Habitat





Anal Jelly



# **Toolbox Talk**

# Otters

#### How are they protected?

Otters are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017, making them a European Protected Species.

#### What is it illegal to do?

IT IS AN OFFENCE TO: KILL, INJURE, CAPTURE HANDLE OR DISTURB AN OTTER

PLACES THEY USE FOR BREEDING, RESTING, SHELTER AND PROTECTION ARE PROTECTED FROM BEING DAMAGED OR DISTURBED

#### Why are they protected?

Numbers are declining across Europe due to: Use of cyclodiene pesticides in the 1950's Habitat loss Development Road traffic collisions

#### **Otter Ecology**

Otters reside around rivers and waterways. Otters are well adapted to as they have webbed feet, dense fur and can close their eyes and nose underwater. They feed on a diet mainly consisting of fish but will take waterbirds, amphibians and crustaceans.

The live in dens called 'holts'. This is also were the female will reproduce. Otters often have litters of 2 or 3 and these can be born at any time of the year.

#### Where am I likely to find them?

Rivers Streams Lakes Canals Woodland Reed-beds Scrub

#### Field signs to look for

Dead or alive otters Footprints Droppings – known as spraint Feeding remains Holts Slides Pathways/trails





A holt is a hole in the ground which an otter using for sleeping and resting

Often a cavity under a root system within bankside trees, rocks or caves.

Generally on the river bank but can be up to 100m away

Footprint







**Toolbox Talk** 

Five toes with webbed feet

Large and round prints – 5-7cm in width and 6-9cm in length

#### Spraint

Characteristic sweet smell

Fish bone often visible

Often found on objects such as rocks, logs and ledges that protrude above the water line.

Used to mark territory





## What to do if I think I found evidence of otters

## STOP WORK

Call Ecus

#### Who to call

Ecus Manchester office - 0161 302 0280





## What you need to know

A risk of encountering otters has been identified at the Site. Otters are known to range over large areas and it is possible that they may be present within the habitat. It should be noted that any otters or signs of otters on site will likely be well concealed.

To safeguard otters in the event that they are present at the time of works, the following Method Statement will be followed:

- All key site personal will be briefed via a Toolbox Talk prior to the start the works. The Toolbox Talk will include relevant detail on otter ecology/identification, legislation and best working practices.
- All Site staff will have been shown a copy of this guide which will be made available for reference on Site at all times.
- A pre-commencement check of the site habitats for otter signs or features within 30 m of the River Trent will be conducted;
- Access outside of the footprint of the site will be avoided;
- All Site personnel to keep a high level of vigilance for otters during works, in particular when working in close proximity to any watercourses;
- Always maintain good housekeeping and implement pollution prevention measures across the Site, including the storage of all materials on hard stand/bare ground well away from vegetation or storage areas for chemicals, fuels, materials / equipment away from watercourses;
- If you or anyone working near you finds an otter or signs of otter activity, works should stop immediately, if safe to do so, and the Appointed Ecologist should be contacted for further advice.
- ECUS Project Appointed Ecologist Natasha Seaward may also be contacted during day time hours, <u>Natasha Seaward (Associate Director of Ecology) m.07487</u> <u>354410.</u>



# **Appendix 3. Great Crested Newt Toolbox Talk**



Terrestrial habitat





**Hibernating sites** 



**Toolbox Talk** Great Crested Newts How are they protected?

Great crested newts protected under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations) and the Wildlife and Countryside Act 1981 (as amended)

#### What is it illegal to do?

IT IS AN OFFENCE TO KILL, INJURE, CAPTURE, HANDLE OR DISTURB GREAT CRESTED NEWTS.

BREEDING, RESTING, AND SHELTERING PLACES ARE PROTECTED FROM BEING DAMAGED OR DISTURBED

#### Why are they protected?

Numbers are declining across Europe due to:

- Pond loss
- Habitat loss
- Agricultural practises
- Habitat fragmentation
  - Construction

#### Where do they live?

March-July In ponds (and surrounding terrestrial habitat) July-November On land - typically within 250m of a pond. November - March Hibernating in damp places above the water table

#### Where am I likely to find them?

On land terrestrial habitat: Rough grassland Scrub Woodland Under logs, rocks and leaf litter Rail ballast

On land terrestrial habitat: Rough grassland Scrub Woodland Under logs, rocks and leaf litter

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Size: up to 18cm Colour: dark brown/black. Orange underside with black spots Skin texture: Warty

Similar species: Smooth newt

Size: up to 11cm Colour: light/dark brown. Yellow with black spots (spots on throat). Skin texture: smooth

Similar Species: Palmate newt

Size: up to 10cm Colour: olive/brown, pink throat (no spots). Skin texture: smooth

# Toolbox Talk Great Crested Newts







## What to do if I find one

## STOP WORK

Leave it where it is Call Ecus

## Who to call

Ecus Manchester office - 0161 302 0280

Amphibians should always be handed with powder and latex free gloves rather than bare hands as good practice.



# A



## What you need to know

A risk of encountering amphibians (including GCN) has been identified at the site. Suitable habitat includes rough grassland, hedgerows, woodland and areas in proximity to the pond. These habitats have some potential to support amphibians in the active season with some low potential to support hibernating animals. It should be noted that any amphibians on Site will likely be well concealed.

To safeguard amphibians (including GCN) in the unlikely event that they are present at the time of works, the following Method Statement will be followed:

- All key site personal will be briefed via a Toolbox Talk prior to the start the works. The Toolbox Talk will include relevant detail on GCN ecology/identification, legislation and best working practices.
- All site staff will have been shown a copy of this guide which will be made available for reference on Site at all times.
- Access outside of the footprint of works will be avoided;
- All Site personnel to keep a high level of vigilance for amphibians (including GCN) during works, in particular when working in close proximity to the pond.
- Always check where you are walking and maintain good housekeeping across the Site, including the storage of all materials on hard stand/bare ground well away from vegetation or ideally on pallets raised from the ground;
- Any arisings from works will be removed off Site ideally on the shift and will not be stockpiled on Site to prevent colonisation by amphibians. If some stockpiling is necessary, waste will be stored on hardstanding/bare ground well away from vegetation or ideally on pallets raised from the ground, in a skip or sealed container;
- Where common amphibians are encountered (i.e. common frog, common toad, smooth newt, palmate newt) these will be moved to safety into long vegetation in the rail embankment outside the works area.
- If you or anyone working near you finds a GCN, works should stop immediately, and an ecologist should be contacted for further advice.
- Please do not handle any animals yourself (unless they are in immediate danger of harm). If in immediate danger, place the animal in a secure container and move them to suitable habitat away from the Site.
- ECUS Project Appointed Ecologist Natasha Seaward may also be contacted during day time hours, <u>Natasha Seaward (Associate Director of Ecology) m.07487</u> <u>354410.</u>



# **Record of Toolbox Talk:**

By signing this record you are confirming that you understand and agreed to work in accordance with the requirements set out in the Reasonable Avoidance Method Statement and Tool Box Talk.

Signature	Name	Organisation



# Reptiles

## What to look for: Habitats



# How are they protected?

All UK native reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) Sand lizards and smooth snakes are further protected under the Conservation of Habitats and Species Regulations 2017, making them European Protected Species.

# What is it illegal to do?

Under the Wildlife and Countryside Act it is illegal to intentional kill or injure a reptile.

Sand lizards and smooth snakes have further protection, it is illegal to:

- Kill, injure, capture, handle or disturb
- Damage or destroy a breeding, resting or sheltering place

# Why are they protected?

Numbers are declining in the UK due to:

- Development
- Habitat loss
- Habitat degradation
- Habitat fragmentation
- Agricultural practices
- Poor management

# **Reptile Ecology**

November – March reptiles hibernate April/ May reptiles come out of hibernation and mate Summer females lay eggs and 'incubate' them with live young hatching mid to late summer Autumn reptiles prepare themselves for hibernation but feeding on invertebrates, slugs, worms, small mammals, amphibians



# Where am I likely to find them?

- Rough grassland
- Open woodland
- Scrub
- Brownfield sites
- Rail embankments
- Road embankments
- Hedgerows
- Heathland
- Moorland

# **Hibernation Sites:**

- Sand dunes
- Wood piles
- Log piles
- Brash piles
- Rubble piles
- Compost heaps
- Disused small mammal burrows

# What do they look like?

# **Common Lizard**

Size: up to 15cm

Colour: usually brown but colour variants include yellow, green and black; spots and/or stripes down back

Skin texture: scaly





# Sand Lizard

Size: up to 20cm Males: bright green flanks in breeding season, two stripes along back Females: grey to brown, two stripes along back Skin texture: smooth



Slow Worm Size: up to 50cm Males: grey or brown occasional bright blue spots Females: golden brown with dark sides and belly Juveniles: dark belly, copper sides, dark stripe along back Skin texture: shiny, smooth



Grass Snake Size: up to 150cm Colour: grey-green with cream/yellow belly Key feature: yellow and blank collar behind head, dark markings on side and belly





# Adder

Size: 60-80cm

Males: grey with black markings Females: light brown with dark brown markings Key features: zigzag pattern down centre of back, V or X marking on head Quirky fact: Britain's only venomous snake!







Smooth snake Size: 60-70cm

Colour: grey or brown with paler belly

Key features: two rows of dark spots down back, dark line on side of head, heart shape crown on head



What to do if I find one STOP WORK Leave it where it is Call Ecus Who to call Ecus Manchester office – 0161 302 0280

Scale Bar					North Arrow
-50m   0m	50m	100m	150m	200m	-

 $(\bigcirc)$ 

# Note: TPO on retained land. Order number 593 of 2015

Conservation Area

Ingestre Hall

Utility Corridor

> Brancote -South Cutting

> > Ingestre Green -Overbridge

Utility Corridor

> Existing Irrigation Borehole



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