Usk – Little Mill Traffic-Free Route

Ecological Appraisal

March 2018

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Ecological Appraisal: Usk to Little Mill Traffic-Free Route Copies of this document may not be current and you should check before further use.	Report Number:	1
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Executive Summary

Sustrans, with information supplied by David Clements Ecology (DCE) and Wildwood Ecology have undertaken a series of surveys to inform the creation of a new traffic-free path between Little Mill and Usk, South Wales.

The report provides a summary of the assessments completed to date. This includes an assessment of nature conservation sites, habitats and protected and notable species identified along the route and detail mitigation, where required to address the potential ecological impacts identified.

This appraisal and the studies which underpin it focus on two discrete off-road sections of the wider route.

An initial preliminary ecological appraisal of the route, was conducted by Wildwood Ecology in April 2014 (Ref: WWE140301). This identified a number of ecological features which may be impacted by the proposals for the entire route (including those sections which form the focus of this document) including badgers, bats, birds, hazel dormice, great crested newts and reptiles. The survey also identified areas of invasive weed along the route. Following completion of this assessment a subsequent statement was prepared in March 2015 outlining mitigation options to address these impacts (Ref: WWE140301WPP).

Following submission of these documents to the planning authority (Planning App: DC/2016/01002), a further request was made by MCC for further phase 2 surveys to be completed (MCC Biodiversity Comments received 20.12.16).

A great crested newt, dormouse and bat assessment were undertaken in spring, summer and autumn 2017 to address this. These surveys were carried out by DCE, with a badger survey completed in January 2018 by Sustrans own ecologist (James Whiteford MCIEEM MRSB).

No nature conservation sites with non-statutory of statutory designations will be directly impacted by the proposals. Indirect impacts on Berthin Brook, a major tributary to the River Usk / Afon Wysg SAC/SSSI are considered possible in the absence of mitigation. Provision for the implementation of suitable pollution controls have been detailed within this report to address this potential impact.

The scheme will result in direct loss of semi-natural habitat. The overall area of habitat loss is not considered to high (c.1.85ha/16% of the wider green corridor) as the majority of mature trees along the route have already been cleared as part of gas pipeline easement works, or to maintain farm access. However, given the nature consideration value of the wider corridor, the works could result in a reduction in structural and species diversity. As such an appropriate series of mitigation and enhancement measures have been set-out within a Wildlife Protection and Enhancement Plan (WPEP) presented within Section 7.0. The report also recommends the preparation of a Habitat Management Plan (HMP), following the granting of planning permission to ensure that these measures are sustained in the long-term.

Further studies have confirmed that great crested newts, hazel dormice and water vole are unlikely to be impacted by the proposals. The proposed scheme in the absence of mitigation could have adverse effects on badgers, bats, invertebrates, otters and reptiles. A series of mitigation measures as regard these species are presented within the WPEP. Further evaluation of badger activity along the Rhadyr to Usk route is required.

Subject to full implementation of the mitgiation and enhancement measures detailed within the WPEP and HMP the scheme is considered unlikely to give rise to an adverse ecological impact, with scope for the project as a whole to generate a net gain for biodiversity.

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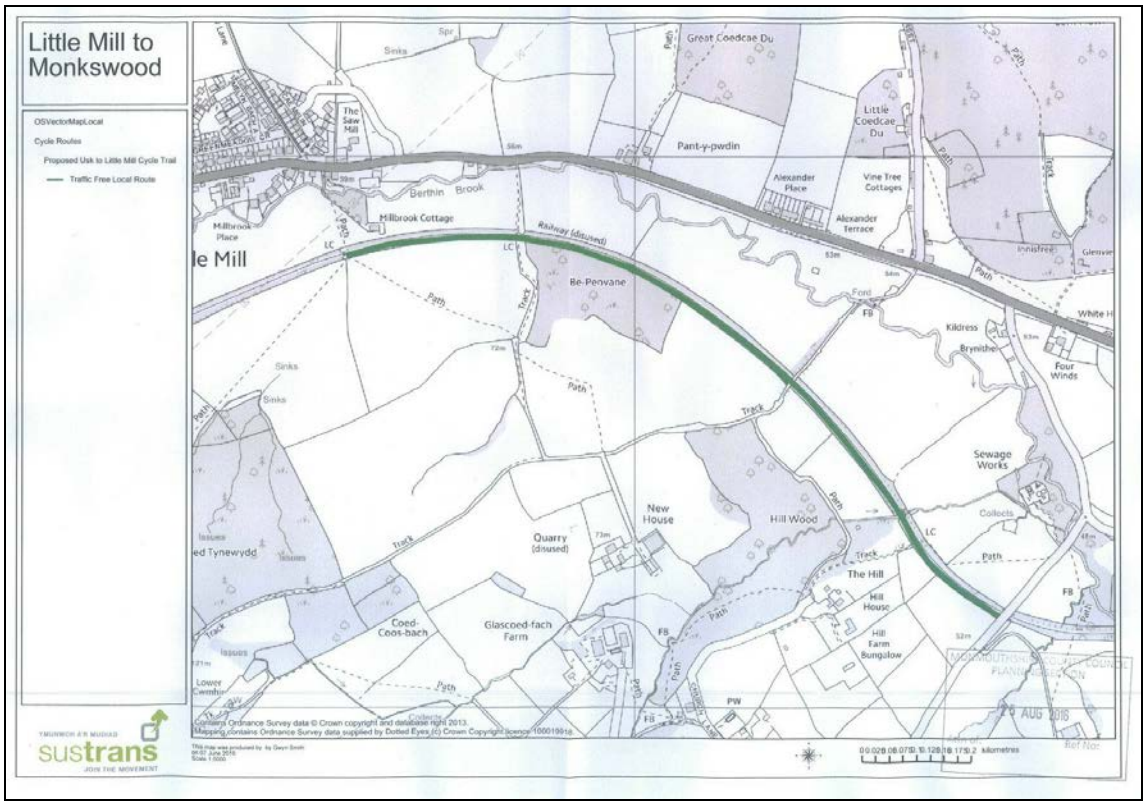
1 Project Introduction

Sustrans are involved in the survey, consultation and design process to inform the future creation of a new traffic-free path between Little Mill and Usk, South Wales.

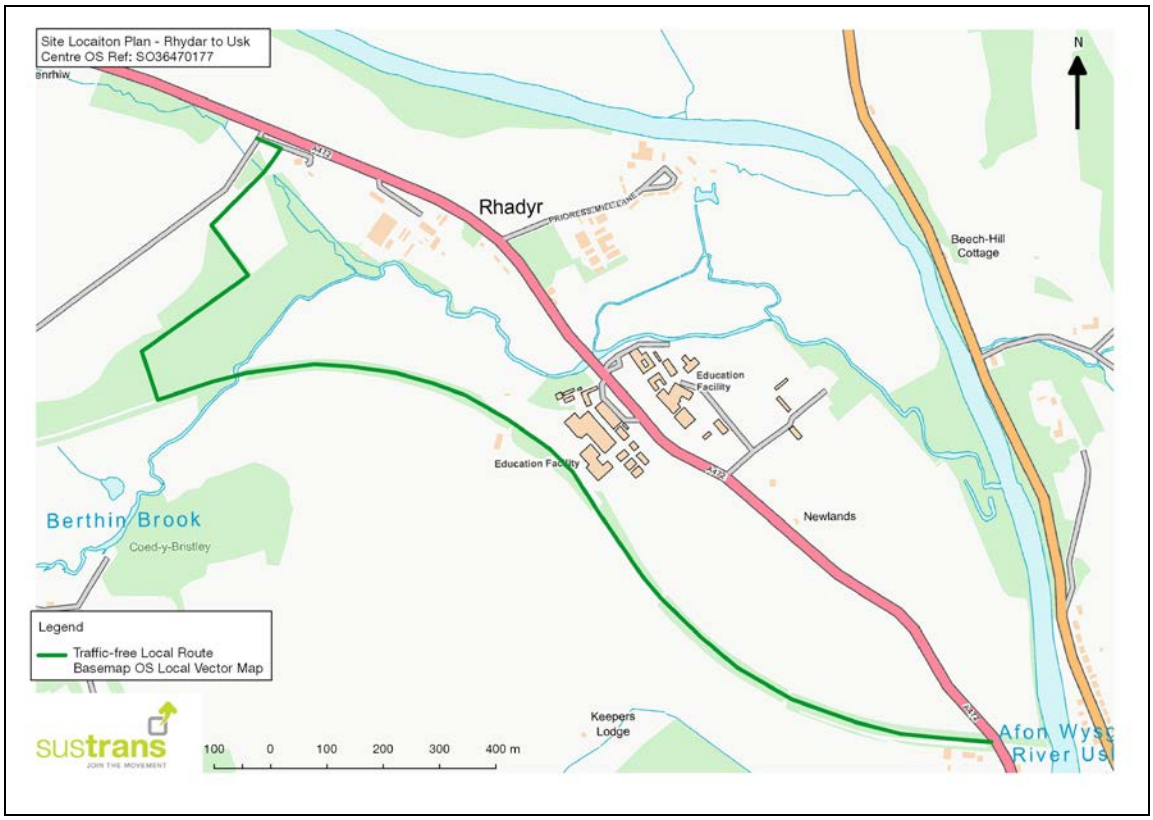
This ecological appraisal focuses on two discrete sections of off-road sections of the wider route:

- *Little Mill to Monkswood* - Starts to the south of Little Mill (OS Grid Reference: SO32460281) and extends to the east for approximately 1.4km and terminates where it meets Glascoed Road near to Monkswood (OS Grid Reference: SO33660217). See Figure 1.1 below.
- *Rhadyr to Usk* – Rhydar (OS Grid Reference: SO 35951 02274) and extends to the east for approximately 2.3km and terminates adjacent to the A472 at Usk (OS Grid Reference: SO37230127). See Figure 1.2 below.

This report provides information on features such as nature conservation sites, habitats and protected and notable species identified along the route and assesses what the potential impact upon these features could be. Where necessary this report also discusses whether these impacts are likely to form a constraint or barrier to the project and outlines possible avoidance or mitigation measures.



Drawing 1.1: Location of Proposed Traffic-Free Route – Little Mill to Monkswood
Centre OS Reference: SO331027



Drawing 1.2: Location of Proposed Traffic-Free Route – Rhadyr to Usk.
Centre OS Reference: SO36480177

2 Approach and Constraints

In order to provide an assessment of the potential ecological baseline of the route and evaluate the potential impacts of the proposal on ecological features, the following items have been completed:

- Preliminary Ecological Appraisal (field survey and desk study): Wildwood Ecology (*WWE140301*) – April-September 2014
- Wildlife Protection Plan: Wildwood Ecology (*WWE140301WPP*) – September 2015
- Great crested newt survey: David Clements Ecology (*DCE v1.0*) – June 2017
- Dormouse survey: David Clements Ecology (*DCE v1.0*) – October 2017
- Badger survey: Sustrans (Incorporated in to this report) – February 2018

This reports summarises the findings of these assessments and includes information on how any significant ecological impacts will be addressed.

2.1 Desk Study

As there has been no material change in habitats, or land management between the original desk studies compiled in 2014 and 2018, a fully updated desk study has not been compiled.

The desk study undertaken in April 2014 identified designated nature conservation sites and protected species recorded within 500m of the route. As part of the search the following statutory and non-statutory organisations holding ecological data relating to the route and accompanying 500m buffer were contacted:

- Natural Resources Wales (NRW) - *MAGIC* website for statutory conservation sites; and
- South East Wales Biological Records Centre (SEWBReC) - Protected and notable species and sites records

As part of this report a further check of statutory conservation sites and priority habitats held on MAGIC was also undertaken.

2.2 Habitat Survey

The initial habitat survey was conducted by representatives from Wildwood Ecology over three days; 1,2 and 4 April 2014. A further structured walkover of the route was conducted by James Whiteford MCIEEM MRSB (Sustrans Ecologist) 31.01.18. The purpose of this assessment was to confirm that the main habitat classifications identified by the 2014 assessment still applied.

All of the habitat surveys comprised a slow walkover survey was conducted and habitats were recorded in and adjacent to the proposed works area using the standard Phase 1 Habitat Survey technique. This is a nationally recognised means for classifying habitats and was undertaken in accordance with the methodology issued by the Joint Nature Conservation Committee (JNCC, 2010). In addition to this basic survey, supplementary information was collected such as the presence of invasive species and descriptions of habitat condition as well as management and other observations that would affect value of habitats as part of the 2014 survey. During the survey the presence of fauna or their field signs were noted and habitats assessed for their potential to support protected or notable species.

This survey was conducted within the footprint of the proposed traffic-free route and the wider habitat corridor (c.100m width). Given the limited scale of the work proposed, habitats beyond this point were considered unlikely to be affected.

A copy of the 2014 PEA completed by Wildwood Ecology is presented in **Appendix 1**.

2.3 Phase 2 surveys – Badgers, bats, dormice and great crested newts

A great crested newt presence/likely absence survey of three suitable ponds within 300-750m of the proposed route was completed by DCE during mid-April and June 2017. Surveys were led by at least one NRW great crested newt licence holder and included the application of at least three methods (where access allowed). A detailed breakdown of the methodology is presented within Section 2.0 of the Great Crested Newt report presented in **Appendix 2**.

A dormouse presence/likely absence survey within suitable areas of habitat along the route was conducted by DCE in August, September and October 2017. Checked were made by a NRW dormouse licence holder and included the use of nest tubes, as well as checks for dormouse feeding remains. A detailed breakdown of the methodology is presented within Section 3.2 of the Additional Survey Work Report presented in **Appendix 3**.

A ground based assessment of trees likely to be removed to accommodate the construction of new access ramps and regrading was undertaken by representatives from DEC 4th July 2017. The survey was completed in line with the Bat Conservation Trusts guidelines (BCT 2012, 2016) by an experienced surveyor. A detailed breakdown of the methodology is presented within Section 2.1.2 of the Additional Survey Work Report presented in **Appendix 3**.

A structured walkover for signs of badger activity, including the presence of active and disused setts along the route was completed by Sustrans' Ecologist, James Whiteford in late January 2018. The route, as well as a 30m buffer, where access could be obtained were assessed.

The survey method was based on a standard approach as in 'The history, distribution, status and habitat requirements of the Badger in Britain, (1990)'.

The appraisal involved a systematic search of the survey area for all signs of badger activity including badger setts, worn pathways in vegetation and/or across field boundaries, footprints, hairs, dung pits/latrines, bedding and evidence of foraging activity including snuffle holes.

Particular attention was paid to habitats of suitable topography or supporting suitable vegetation for sett-building as well as to those features particularly favoured by badgers including hedgerows, areas of dense scrub, woodland, ditches and banks.

All holes of an identified sett were examined closely and the number of active and inactive entrances and evidence of its usage were recorded. Where possible, setts identified during the survey were categorised using nationally recognised sett classification as described below:

- Main sett: These are large setts comprising a number of well-used, active holes with conspicuous spoil heaps. They are well established with worn paths to and from the sett and between entrances. Main setts area breeding setts and are normally in continuous use throughout the year, with only one main sett per social group of badgers;
- Annexe sett: Where present they occur in close association with the main sett (normally less than 150m away) and are linked to them by clear, well-worn paths. Annexe setts arise for the purposes of rear cubs should a second litter be born, and have several entrances (though not all in use at the same time);
- Subsidiary sett: These setts usually consist of three to five entrances which are no in continuous use. They are usually more than 50m away and may not have well-used paths connecting them to other setts; and
- Outlier sett: These typically comprise one to three holes with small spoil heaps indicating that they are not very extensive underground. They are used sporadically and are thought to serve multiple functions, including allowing efficient and safe travel to important parts of their home range.

As part of the assessment a trail camera (Bushnell Trophycam 5MP) was deployed to monitor three mammal entrances, which were of a suitable size and shape to be used by badger. The camera was deployed 31 January 2018, unfortunately the unit was stolen on or before the 22 February, 2018.

2.4 Assessment

This report includes an assessment of the potential impacts of the development on ecological features and habitats. Where impacts are anticipated, the value of the ecological feature and scale of the impact have been assessed. This has been undertaken in accordance with CIEEM Guidelines for Ecological Impact Assessment (CIEEM 2016). This is considered in light of current ecological legislation and planning policy and so considers impacts on designated nature conservation sites, protected and notable species and landscape scale impacts such as habitat fragmentation.

This report therefore makes recommendations regarding what implications ecology has on the feasibility of the proposed route creation, what further studies would be required and what measures to avoid, mitigate or compensate for ecological impacts are likely to be necessary.

2.5 Constraints

No significant survey constraints were observed as part of the 2014 PEA.

The great crested newt survey was constrained due to the steep sides and lack of safe access to the banks of Pond C. This waterbody was subject to torch light surveys only. Very low water levels within Pond A also precluded the use of more than three bottle traps. The waterbody was also found to have dried out when visited as part of the third survey. These constraints are not considered to have significantly affected by the results of the assessment and it is notable that both of these waterbodies were located some distance from the route, including beyond the typical dispersal distance of great crested newts (GCNMG, 2001).

The dormouse survey could not be completed over the entire active dormouse period (April-October inclusive) which is the recommended approach as detailed by NRW (NRW, 2006). However, the nest tubes were located in-advance of, and regularly checked during the autumn period (August-October) when dormouse occupancy of nest tubes has previously been recorded as being at its peak (Chanin and Woods, 2003).

Several of the trees assessed as part of the bat survey were located on a steep embankment, which checks of the trunks difficult. This constraint was addressed as far as possible by assessing each tree from a variety of viewpoints using binoculars.

The badger field survey was not subject to any major constraints, as the survey was timed to coincide with the late winter period when vegetation cover is low, but badgers are progressively becoming more active. The low vegetation levels allowed a clear view of the route and surrounding buffer. Several dense areas of scrub/invasive weed prevented a full inspection of a series of discrete patches (c. 20m x 20m), this was addressed through a careful search around the perimeter of these areas for evidence of mammal activity indicative of animals choosing to move in and out of these areas.

3 Desk Study Results

Inspection of aerial mapping shows that the landscape around the route is predominately rural and comprises a mixture of broadleaved and wet woodland, running water with open areas of grassland present in flatter, more open areas.

The route is situated within the Central Monmouthshire National Landscape Character Area (NLCA31). NCLA31 recognises the importance of the River Usk and its associated tributaries in defining the landscape around Usk, as well as the wide range of nationally and internationally protected species it supports including several declining fish species and otter.

3.1 Nature Conservation Sites

Please see section 4.0 of the 2014 PEA (**Appendix 1**). In summary, the searches confirmed that neither route sections are covered by any statutory or non-statutory designations.

The 2018 MAGIC search confirmed the following:

- The route sections are not covered by any statutory designations. The River Usk/Afon Wysg SSSI/SAC is located approximately 100m east of the eastern edge of the Rhadyr to Usk section. The end of route is divided from the SSSI/SAC by the A472 and a public car park.
- National Habitat Inventories indicate that the route does not include any Welsh priority habitat. Several blocks of mature and young broadleaved woodland listed on the National Forest Inventory (NFI) are designated along the two route sections.

3.2 Protected or Notable Species

Please see Section 4.0 of the 2014 PEA for a full breakdown.

In summary, the record search returned records for the following protected species within 1km of the route:

- Bats (52 records)
- Hazel Dormouse *Muscadinus avellariarius* (1 record)
- Great crested newt *Triturus cristatus* (1 record)
- Otter *Lutra lutra* (3 records)
- Water vole *Arvicola amphibius* (1 record)
- Reptiles (1 record)
- Birds (20 records)
- Fish (3 records)
- Invertebrates (2 records)
- Plants (2 records)
- Mammals (non-EPS) – 4

4 Survey Results

4.1 Introduction

Habitat surveys were conducted by Alexandra Pollard MCIEEM and Matthew Davies ACIEEM on the 1st, 2nd and 4th of April, 2014. A further walkover of the site to confirm that the broad habitats as mapped in 2014 were still representative was conducted by James Whiteford MCIEEM MRSB, 31 January, 2018.

4.2 Phase 1 Habitat Survey

The details of the habitats associated with the two route sections are described in Section 4.24-4.33 (Rhadyr to Usk) and Section 4.73-4.78 (Little Mill to Monkswood) of the PEA presented in Appendix **1**.

For ease of interpretation they are bulleted and summarised below;

- Bare ground – *Rhadyr to Usk*
- Broadleaved Woodland – *Rhadyr to Usk* / *Little Mill to Usk*
- Tall ruderal (including invasive weed) - *Rhadyr to Usk*
- Scattered trees - *Rhadyr to Usk*
- Wet ditches - *Rhadyr to Usk*
- Improved grassland – *Rhadyr to Usk*
- Plantation woodland – *Rhadyr to Usk*

Bare ground

This was principally associated with an area of ground to the west of the Equestrian Centre (SO364017) and existing sections of trackway. Several common early successional plant species were recorded growing between the sleepers and in other disturbed areas along the route. No significant variation in condition or management was noted between the 2014 survey and the 2018 assessment.

Broadleaved woodland

Rhadyr to Usk – The embankment and former railway line was populated by relatively young (c.40yr old) secondary woodland, supporting a mixture of native readily self-seeding tree and scrub species including ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, hawthorn *Crateagus monogyna* and blackthorn *Prunus spinose*.

The mature broadleaved woodland at the western end of the route (Rhadyr Orles) was found to be relatively low lying and wet in character. The principal canopy species in this area of woodland include alder *Alnus glutinosa*, willow *Salix sp.* and ash. Understorey species are similar to the areas of secondary woodland nearby. Several indicators of wet undisturbed woodland are known to present in the ground layer including marsh marigold (*Strong Wet Woodland indicator – NVC W3*[1]) and wood anemone (*Ancient woodland indicator (AWI*[2]*)*).

[1] National Vegetation Classification (NVC) - W3 *Salix pentandra - Carex rostrata* woodland, Section 7. Priority Habitat.
[2] The following species were found to be significantly associated with ancient Woodland rather than long-established woodland. Of the 63 species on the list, 41(indicated by *) also appear on other UK lists of ancient woodland species, determined by expert judgement.

Little Mill to Monkswood – The embankment and accompanying line of the disused railway was dominated by a self-set stand of maturing secondary woodland. Canopy species recorded included ash, willow and silver birch. The understorey was a mixture of shade tolerant, scrub and shrub species including common hawthorn, ground elder *Aegopodium podagraria*, common nettle *Urtica diocia* (dominant species) and common cleavers *Galoum aparine*. The 2014 assessment identified the presence of several neutral grassland indicators within open, less shaded areas including self-heal *Prunella vulgaris* and barren strawberry *Potentialla sterilis*.

No significant variation in condition or management was noted between the 2014 survey and the 2018 assessment.

Tall ruderal (Invasive Weed – Japanese knotweed \ Himalayan Balsam)

Several stands of Japanese knotweed *Fallopia japonica* were recorded as part of the 2014 and 2018 assessments. These were located at:

- SO3722 701275 – Small patch at base of embankment next to the A472
- SO3685 801370 – Two large clumps on top of embankment and to west of the bridge, adjacent to the pillbox
- SO3688 301351 - Large unbroken stand, approximately 50m long, covers top of bank to bottom

Stands of Himalayan balsam are scattered in discrete patches were reported along the entire route by DEC as part of the Phase 2 assessments conducted during 2017.

Scattered trees

Several scattered mature (40cm+ diameter at breast height) oak trees *Quercus robur* lined the edges of the embankment or where historic hedgerows intersected the disused railway line.

Wet ditches/Running water

Several wet ditches, run along the base of the embankment or cross the route. Berthin Brook crosses beneath a newly restored bridge along the southern edge of the wet woodland associated with Rhadyr Orles (SO3590 501928) and along the Little Mill to Monkswood section at SO334023.

Improved grassland

The route runs along a track and crosses an area of improved grassland to the west of the Equestrian centre (SO35860221 - SO35960228). The grassland was comparatively species poor and populated by a limited assortment of productive grass and forb species (e.g. creeping buttercup *Ranunculus ficaria*, broadleaved dock *Rumex obtusifolous* and thistle *Cirsium sp*).

Plantation Woodland

A section of actively managed, plantation woodland is located to the north of the broadleaved woodland (Rhadyr Orles), centred on SO3588 0210. The trees within this woodland were even aged and relatively immature (less than 40yrs old) . Principal canopy species including silver birch *Betula pendula*, pine *Pinus sp.* and willow *Salix sp.*. Evidence of thinning and coppicing was noted as part of the 2018 assessment, along with the creation of several habitat piles.

4.3 Fauna

The details of the species associated with the two route sections are described in Section 4.24-4.33 (Rhadyr to Usk) and Section 4.73-4.78 (Little Mill to Monkswood) of the PEA presented in Appendix **1.**

A summary of the 2014 findings, with relevant observations form the 2018 walkover are presented in Table 4.1, below

Species	2014 Notes and Location	2014 Recommendations	2018 walk-over observations
Amphibians	No amphibians found Rhadyr to Usk - Broadleaved woodland and ditches along route provide potential foraging and breeding opportunities. Little Mill to Monkswood – Ditches and ponds located along and within 250m of route.	Further surveys for protected species of amphibian	Ditches and ponds appeared to be in a similar condition to PEA assessment. See Amphibian Section 4.5 below.
Badger *Meles meles*	Foraging, commuting and territory marking activity recorded along both routes. Rhadyr to Usk - Active badger sett (single entrance hole, likely outlier)	Badger survey	Activity confirmed in similar locations. See Badger Section 4.4 below.
Bats	Rhadyr to Usk - Single bat dropping found within pillbox (SO3688 0134). Bridges found to support potential roost features for bats. Little Mill to Monkswood – Several older trees identified as having moderate bat potential	Further surveys if structures to be impacted / trees with bat roosting potential removed	Structures in a similar condition to PEA assessment, no further evidence of bat usage found within pillboxes. See Bat Section 4.7 below.
Birds	Historic nesting bird activity found along both routes	Sensitive timings of works/supervision	Habitats along both routes provide optimal nesting grounds for a range of urban and woodland edge species.
Dormouse	No dormouse, or signs of dormouse found Rhadyr to Usk - Areas of scrub along railway corridor. Offsite hedgerow along access road to BAE systems (SO3579 0218). Little Mill to Monkswood – Secondary woodland and understorey beneath provides suitable foraging and breeding habitat for dormouse	Further surveys for dormouse	Habitats along both routes remain suitable. See Dormouse Section 4.6 below
Otter	No holts found Rhadyr to Usk – Commuting and marking activity beneath bridge which crosses Berthin Brook (SO3590 501928) Little Mill to Monkswood – Route crosses tributary to Berthin Brook. No signs found.	Pre-works check for otter	Bridge crossing Berthin Bridge has been restored. New mitigation features added for bats. Fresh otter print noted beneath arch to east.
Reptiles	No reptiles found. Rhadyr to Usk – Rubble piles adjacent to college provide suitable basking, shelter and hibernation opportunities for reptiles. Little Mill to Monkswood – Potential egg laying habitat/shelter associated with single wood chip pile (SO328 00285).	Preparation and implementation of method statement.	Rhadyr to Usk - Rubble pile adjacent to the college had been disturbed prior to the survey. Material appeared to have been moved away from the path by machinery. Little Mill to Monkswood – No significant change.
Water vole	No confirmed evidence found.	Pre-works check	No signs found beneath bridge.

	Rhadyr to Usk –Single ambiguous footprint found beneath bridge crossing Berthin Brook. Little Mill to Monkswood – No suitable habitat identified	for water vole when working in close proximity to potential habitat.	Water was relatively fast flowing and banks devoid of vegetation typically palatable to water vole.

Table 4.1 – Summary of faunal species observations and recommendations – 2014 and 2018

4.4 Phased 2 Survey – Badger

The 2018 field survey confirmed that badgers remain active in the local area along with evidence of activity by otter and fox *Vulpes vulpes* also recorded.

A summary of the mammal activity recorded is presented in Figures 4.41 and 4.42 overleaf and tabulated in Table 4.2.

Rhadyr to Usk – Surveyed from east to west			
Plan Ref.	**Species**	**Location**	**Notes**
BS3	Badger	SO37120125	Commuting - Active badger trail along edge of embankment, running west.
BS2	Badger	SO37090127	Foraging – 3 fresh snuffle holes on top of embankment
R7	Rabbit	SO36970128	Foraging - Scratch marks along downslope of embankment to south
R6	Rabbit	SO36890131	Breeding - 3 entrance holes, 2 active, 1 in-active (all below 20cm diameter)
F1	Fox	SO36770142	Feeding – Cluster of discarded woodpigeon feathers
BH1	Badger	SO36760141	Commuting – Series of badger guard hairs trapped in lowest strand of barb wire. Wire located immediately to south of track.
BS1	Badger	SO36670147	Foraging – 5 snuffle holes located just off track
BP1	Badger	SO36590157	Commuting – Fresh badger prints, heading north along field tramline, approx. 20m from edge of railway embankment to west.
R5	Rabbit	SO36350183	Breeding - Single active rabbit hole
R4	Rabbit	SO36380185	Breeding - Two active rabbit holes (below 20cm diameter)
R3	Rabbit	SO36280189	Breeding -Several active rabbit holes
R2	Rabbit	SO36170192	Breeding - Single active hole south of track.
B3	Badger	SO36090194	Shelter - Suspected badger entrance hole. 5m south of track (remote camera installed). Entrance heading south.
B2	Badger	SO36070193	Shelter - Suspected badger entrance hole. 7m south of track. Entrance heading south.
B1	Badger	SO36040194	Shelter - Suspected badger entrance hole. 1.5m from track (entrance heading north-west)
BF1	Badger	SO35810202	Foraging – single snuffle hole and snowdrop bulb left.
L1	Badger	SO35770197	Territory marking – Old latrine, infilled with leaves.
R1	Rabbit	SO35840205	Breeding - Two holes (less than 20cm diameter). Fresh rabbit dropping around hole to north. Both straddle trackway.

Table 4.2.1 – Badger and mammal survey results – Rhadyr to Usk, 31.01.18.

Little Mill to Monkswood Surveyed from west to east			
Fig. 4.42 Ref.	**Species**	**Location**	**Notes**
R8	Rabbit	SO32610285	Foraging – soil scrapes to north of track
R9	Rabbit	SO32620284	Breeding – Single narrow entrance hole (c.8cm diameter). Located to south of track.
R11	Rabbit	SO33150269	Foraging – Cluster of five scrapes. Two with fresh droppings aside.
R12	Rabbit	SO33160270	Breeding and foraging – One scrape, two active holes (c.10cm diameter). Fresh rabbit droppings nearby.
BS4	Badger	SO33280258	Foraging/commuting – Scratching post associated with base of decaying tree stump
R13	Rabbit	SO33350250	Breeding – Active rabbit hole – 3m up bank. Numerous fresh droppings. gnawed stump at base of slope.
R14	Rabbit	SO33450240	Breeding – Fresh holes with rabbit droppings.
R15	Rabbit	SO33540227	Foraging – Series of rabbit scraping with fresh droppings.
R16	Rabbit	SO33540223	Breeding – Active rabbit hole (c.12cm diameter). Fresh droppings.

Table 4.2.2 – Badger and mammal survey results – Little Mill to Monkswood, 31.01.18.

Summary

Three active mammal holes of a suitable size and shape for use by badger were identified within 5-10m of the proposed route along the Rhadyr to Usk section between SO36070193 - SO36040194.

Foraging, commuting and territory marking by badger was confirmed along the Little Mill to Monkswood section. No setts (active, or disused setts) were found as part of the assessment, including along the proposed route, or corresponding 30m buffer on either side.

Figure 4.41

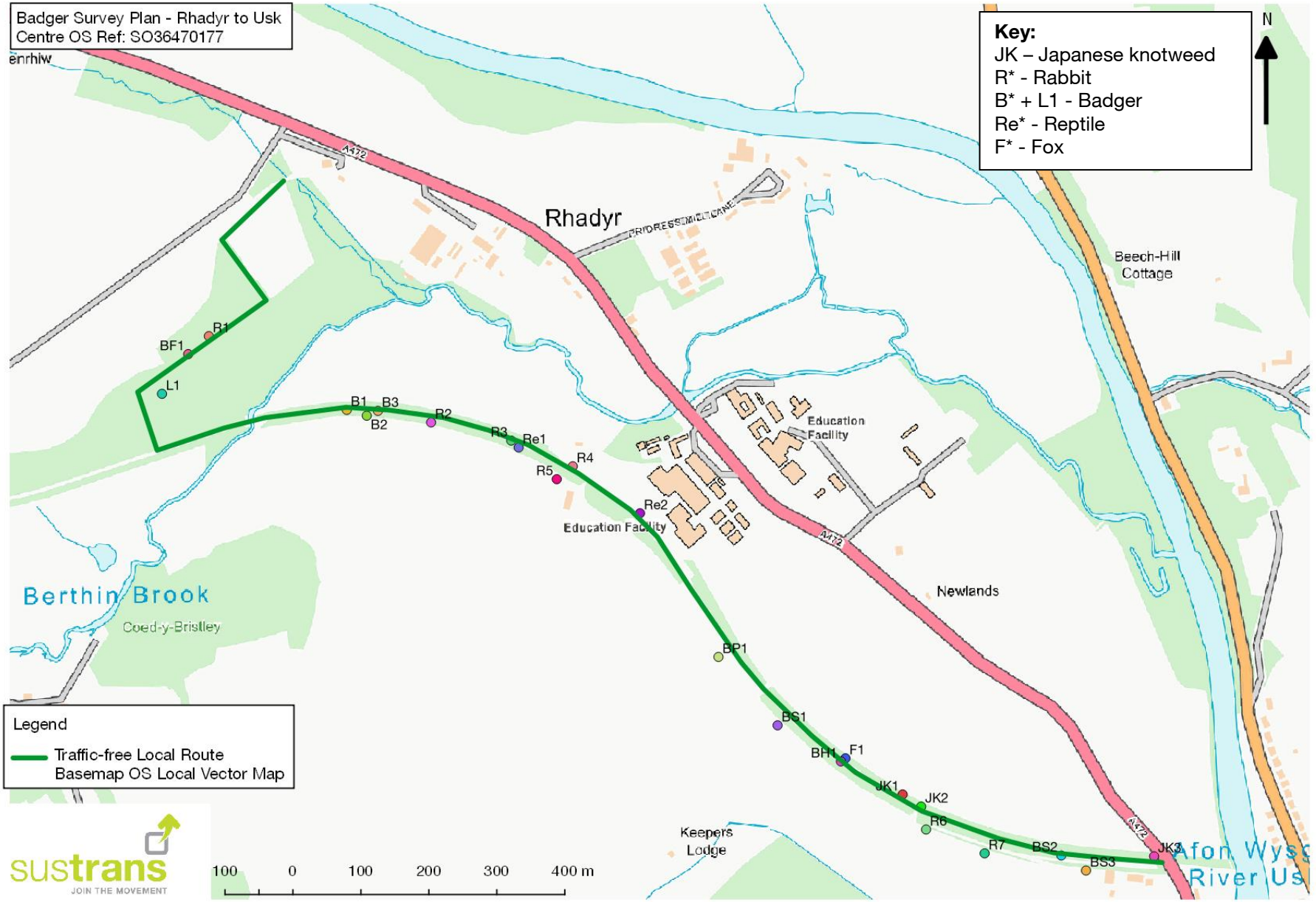
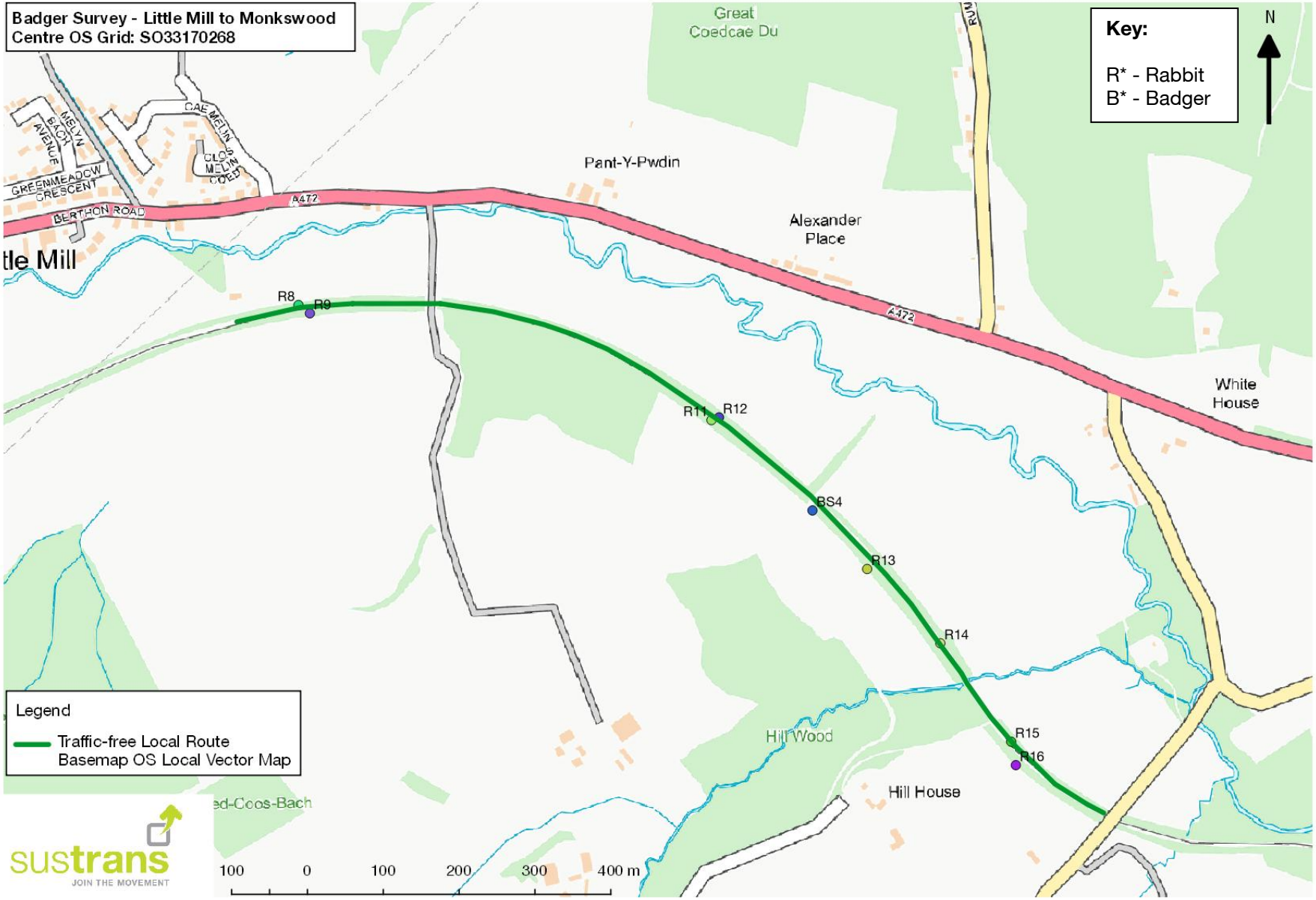

Badger Survey Plan - Rhadyr to Usk
Centre OS Ref: SO36470177
Key:
JK – Japanese knotweed
R* - Rabbit
B* + L1 - Badger
Re* - Reptile
F* - Fox
N
Rhadyr
A472
Beech-Hill Cottage
Education Facility
Newlands
Berthin Brook
Coed-y-Bristley
Keepers Lodge
Afon Wysg
River Us
BF1
R1
L1
B1
B3
B2
R2
R3
Re1
R4
R5
Re2
BP1
BS1
BH1
F1
JK1
JK2
R6
R7
BS2
BS3
JK3
Legend
Traffic-free Local Route
Basemap OS Local Vector Map
sustrans
JOIN THE MOVEMENT
100 0 100 200 300 400 m

Figure 4.42


Badger Survey - Little Mill to Monkswood
Centre OS Grid: SO33170268
Key:
R* - Rabbit
B* - Badger
N
Great Coedcae Du
Pant-Y-Pwdin
Alexander Place
White House
A472
BERTHON ROAD
GREENMEADOW CRESCENT
MELYN BACH AVENUE
CAE MELIN
CLOS MELIN COED
tle Mill
R8
R9
R11
R12
BS4
R13
R14
R15
R16
Hill Wood
Hill House
Legend
Traffic-free Local Route
Basemap OS Local Vector Map
sustrans
JOIN THE MOVEMENT
100 0 100 200 300 400 m

4.5 Phase 2 Surveys – Great Crested Newt

A full breakdown of the results are presented in Section 3 of the DCA 2017 report presented in **Appendix 2**.

The surveys confirmed that great crested newts were likely absent from waterbodies assessed as part of the survey.

The survey did identify the presence of a medium population of palmate newts *Lissotriton helveticus* within Pond B, based on the peak counts from the other survey visits – 2,1 and 14, this is considered likely to be representative of a population at the lower end of the medium population scale (≥11-100 individuals[3]).

The survey also confirmed that Pond A and Pond B are breeding sites for common frog *Rana temporia* with stickleback (likely 3 spined - *Gasterosteus aculeatus*) also recorded in the latter.

4.6 Phase 2 Surveys – Dormouse

A full breakdown of the results are presented in Section 3.2 of the DCA 2017 report presented in **Appendix 2**.

The nest tube survey confirmed that dormouse were likely absent from the areas assessed as part of the survey. A corresponding search for chewed hazelnuts as part of the nest tube survey also returned a negative result.

4.7 Phase 2 Surveys – Bats

A full breakdown of the results are presented in Section 3.1 of the DCA 2017 report presented in **Appendix 2**.

Four trees were identified by the assessment as having features potentially attractive as roost sites for bats.

The balance of the interest associated with the trees related to the presence of dense ivy cover. None of the trees possessed obvious features which are preferred by roosting bats (e.g. cracks, splits or lifted bark). No evidence of bats (e.g. actual bats, droppings or scratch marks) was found as part of the survey,

All the trees were identified as being of Category '2B' potential: Moderate potential for usage by bats:

'Trees with some features which are potentially suitable for use by bats, but such features usually low in number of only of marginal suitability. This would include dense ivy cover. Usually medium-mature trees of moderate age'.

[3] Natural England (2001) Great Crested Newt Mitigaiton Guidelines, 1st Edition.

5 Discussion

5.1 Introduction

The proposed work will involve the creation of a traffic-free path for walking and cycling between Usk and Little Mill. A proportion of this route will be 'on road' and use existing highways and tracks. This assessment focuses on the re-development of two existing sections of disused railway line between Rhadyr and Usk to the east and Little Mill and Monkswood to the west.

5.2 Proposals

The proposals relate to the construction of a 2.5m width tarmac/all-weather surfaced path with an allowance of a 0.5m verge on one side and a 2m verge on the other (wider verge for horse use), with head clearance of approximately 5m. It is anticipated that the minimum work footprint to create this path would be 5m. In the long term, the minimum level of vegetation management that would be required would be mowing 0.5m either side of the path to prevent long vegetation into and obstructing the path (the frequency of mowing would depend on the vigour of the growth of vegetation but is usually between 1 and 3 cuts per year) and occasional trimming of shrubs and trees to prevent branches impeding access along the path.

The route will not be lit. Additional signage added at the start and end of each section.

Small sections of existing ballast, sleepers and rails may also need to be removed where this conflicts with the proposed alignment. The majority of vegetation to be cleared back is secondary, self-sett broadleaved woodland, scrub and tall ruderal vegetation (principally Japanese knotweed, Himalayan balsam and common nettle).

Greater levels of vegetation clearance will be required to allow for the installation of a single, new access ramp close to the A472 (eastern end of Rhadyr to Usk route). The existing embankment will be regraded and associated vegetation including mature trees will be removed and permanently lost.

A small construction compound (5m x 30m) is also proposed at the western end of the Little Mill to Monkswood (where an existing access track extends south from A472 at SO32770285).

Figure 1 Location of construction compound for Little Mill to Monkswood section

A similar construction compound will be established at Usk College on existing hard standings for the construction phase of the Rhadyr to Usk section

No works to existing structures (including foot and overbridges, pill boxes) are proposed as part of the scheme. The bridge over the Berthin Brook on the Rhadyr to Usk section has recently restored as part of an upgrade to the gas pipeline which passes over this structure.

It is anticipated that works will be completed by a small team, utilising comparatively small machinery (max. 3.5-5 tonnes) this is because of the proximity of the high pressure gas main.

Based on the proposed dimensions and details above, the works relating to both sections will result in the loss of approximately 1.85ha of semi-natural habitat, principally secondary broadleaved woodland, tall ruderal vegetation and bare ground (land to the west of the Equestrian centre).

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5.3 Nature Conservation Sites

This section considers the potential impacts of the proposal on designated nature conservation sites, habitats and protected and notable species. It also discusses whether these considerations are likely to form a constraint, or a barrier to the project

Statutory Conservation Sites

No direct impacts are anticipated on nature conservation sites with statutory protection as a result of the new route. The River Usk SAC/SSSI, the closest statutory is located approximately 100m east of the Rhadyr to Usk section of the route and separated from it by substantial man-made barriers including the A472 and associated area of parking. All the other statutory sites are sufficiently distant for any direct impacts arising from the construction and usage of the route to be negligible.

Berthin Brook which crosses the Rhadyr to Usk (SO359019) and Little Mill to Monkswood (SO334023) sections is a tributary of the River Usk and therefore, negative ecological impacts upon this feature may have impacts on the designating features for the River Usk / Afon Wysg SAC.

A copy of the citation for the River Usk / Afon Wysg SAC is presented in **Appendix 4**.

In summary designating features for the River Usk / Afon Wysg SAC include:

- Annex 1 Habitats – Qualifying Feature – 3260 / Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation**.**
- Annex 2 Species – Primary Reason for Designation - Sea lamprey *Petromyzon marinus*, River Lamprey *Lampetra fluviatilis*, Twaite shad *Alosa fallax*, Atlantic salmon *Salmo salar*, bullhead and otter*.*
- Annex 2 Species – Qualifying Feature – *Allis shad*

For the purposes of clarity an abbreviated ecological impact assessment identifying the potential impacts of the scheme in the absence of mitigation for each of these qualifying, or designating species is presented in the Table 5.3.1 below.

River Usk / Afon Wysg SAC – Qualifying Features	**Potential impacts**	**Anticipated ecological impact in absence of mitigation**
3260 – Water courses of plain to montane levels	Construction phase - Pollution – eutrophication (increased soil deposition) / accidental release of petrochemicals when working within 50m of bridges crossing Berthin Brook.	Construction phase - Negative (non-significant) at International scale Operational phase – Neutral at International

		scale
Sea Lamprey / River Lamprey / Twaute Shad / Atlantic Salmon / Bullhead / Otter / Allis shad	Construction phase - Pollution – accidental release of petrochemicals, posing poisoning risk when working within 50m of bridges crossing Berthin Brook. Increased disturbance - lighting, sound and vibration when working within 50m of bridges crossing Berthin Brook.	Construction phase - Negative (non-significant) at International scale Operational phase – Neutral at International scale

Table 5.3.1 – Ecological Impact Assessment Table – New path scheme and interaction with River Usk / Afon Wysg SAC

Based on the evaluation presented in Table 5.3.1, mitigation measures will need to be applied when working within 50m of Berthin Brook as part of the construction phase to ensure that the scheme does not give rise to any significant adverse effects.

Non-statutory conservation sites

None of the non-statutory wildlife sites identified by the 2014 desk study will be directly impacted by the proposals. Three of the four sites are located more than 500m from the proposed route and are considered sufficiently distant not to be impacted by the proposals.

The remaining site, Berthin Brook Wet Meadow SINC is located within 50m of the proposed route. This grassland habitat is known to support a locally important community of neutral grassland plant species.

The proposed route will not pass through this SINC and therefore no direct impacts (e.g. habitat loss, or temporary damage) are anticipated.

Potential in-direct impacts on this habitat may include alterations in local hydrology including eutrophication of ground water, or an increase in grazing pressure/trampling due to the displacement of other species (e.g. rabbits/deer) or people in to this habitat. The proposed scheme, is not anticipated to give rise to any significant changes in local hydrology or lead to increased grazing pressure, or trampling of this site by uses. Therefore no significant adverse impacts upon Berthin Brook Wet Meadow SINC are anticipated.

5.4 Habitats

The broadleaved woodland and scrub along the two routes are an important feature in an otherwise relatively intensively agricultural landscape. They provide a continuous area of semi-natural habitat that links other semi-natural areas (e.g. River Usk to the east and complex of woodlands centred on Coed Bryntovey to the west).

Parts of the route have been subject to vegetation clearance in recent years, mostly in association with maintenance of a farm access track and as part of easement management for a gas pipeline on behalf of Wales and West Utilities.

As a result of these habitat management works, the balance of habitat clearance will result in the loss of comparatively small diameter broadleaved tree saplings (c.≤10cm), scrub (including native and non-native species), tall ruderal vegetation (common nettle, Japanese knotweed and Himalayan balsam) and areas of bare ground. The loss of these habitats individually, or in-combination are not considered to be significant, as the primary ecological value of each of the corridors (mature lines of trees and associated understorey and ground flora) will be retained.

Assuming the path is 2.5m, it will cover an area of approximately 0.93ha over the 3.7km length of the two route sections plus any access points. The immediate verges of the path would also need some management to keep vegetation from falling into and obstructing the path, and therefore will prevent

natural succession to woodland this would be in total 2.5m wide and would cover 0.93ha. In total, the scheme is likely to lead to the permeant loss of approximately 16% of the wider 'green corridor'[4].

A series of mitigation measures will be required to compensate for this anticipated impact. This will need to encompass a habitat creation scheme and long-term management plan that must maintain and improve the quality of the habitat mosaic.

The two route sections form part of a larger series of corridors which extent off to the east and west. As outlined above, at a landscape scale they link important ecological features and cross watercourses that increase the connectivity of the area. The proposal will not result in the fragmentation of these corridors, but would, without mitigation affect there composition and suitability for some fauna. Impacts on fauna are discussed in Section 5.5. To retain the quality of this habitat corridor a long-term management plan would need to be developed.

As detailed in Section 5.3 the route crosses Berthin Brook. Watercourses have high ecological value due to the large variety of species they support and because they too form a continuous strip of semi-natural habitat through the landscape. Aquatic ecosystems are also sensitive to impacts from construction such as siltation and pollution events. No works are proposed on the brook or its structures. It is anticipated that siltation or pollution events from path construction will need to be prevented through the application of suitable control and mitigation measures.

Invasive non-native species, including Japanese knotweed and Himalayan balsam were recorded along the route. Construction work can spread Japanese knotweed and Himalayan balsam in contravention of current legislation, as stands of these species are present along the proposed route mitigation measures will be required to prevent the spread and lead to their eventual eradication.

5.5 Fauna

This section discusses the likelihood of protected or notable fauna occurring at the site and assesses the potential for impacts to occur from the proposed works. This assessment takes into account species with statutory protection and species afforded protection through the Environment (Wales) Act, 2017, enforced through the planning process. Where appropriate other notable species are considered.

Amphibians

The field surveys, have confirmed that great crested newts (and other protected species of amphibian) are likely absent from the proposed route.

No breeding habitat will be lost as a result of the development and the path will not create a barrier to amphibian movements, however the permanent loss of a small area of semi-natural habitat will reduce foraging habitat for amphibians such as common frog and palmate newt. Mitigation and compensation measures to minimise short-term impacts and provide long term benefits for amphibians should be developed.

Birds

A variety of common and widespread bird species were recorded during the different site visits. Nesting habitat for a wide range of common bird species is present along the two route sections. Given the location, the surrounding environments and quality of the habitats along each route, the presence of Schedule 1 species[5] cannot be entirely ruled out.

The clearance of young trees, scrub and tall ruderal vegetation, as well as the removal of tipped materials (rubble piles to the west of the Equestrian Centre) have the potential to lead to the disturbance and destruction of birds' nests, if undertaken during the nesting season (March to September inclusive).

[4] For the purposes of this assessment the 'corridor' is defined as the total length and width of the embankment which can be determined as being semi-natural in character, i.e. supporting naturally regenerating tree and shrub species. Measured using Google Earth (10.33ha)
[5] Wildlife Countryside Act (1981) *Schedule 1*

The anticipated scale of habitat loss is not considered likely to have any significant residual impacts on local bird populations, owing to the extent of suitable alternative habitat to be retained, or present within the local area.

Fish

An evaluation of potential impacts on internationally important fish populations associated with the River Usk and its tributary Berthin Brook is outlined within Section 5.3. In addition to these species the desk study identified that European eel *Anguilla Anguilla* are active in water courses near the proposed route.

No direct impacts on watercourses along either route are anticipated, in-direct impacts are considered possible and so mitigation measures will be required.

Invertebrates

The desk study and subsequent field surveys have identified the potential for white-clawed crayfish *Austropotamobilus pallipes* (European Protected Species), speckled bush-cricket *Leptophyes punctatissima*, short-winged cone-head *Conocephalus dorsalis* and scarlet malachite beetle *Malachius aeneus* to be impacted by the proposals. Based on the 2018 assessment, the habitats along the proposed route are also considered likely to provide suitable conditions for other woodland species including those associated with standing and lying deadwood.

No direct impacts on suitable white-clawed crayfish or short-winged cone head (both aquatic species) are anticipated as the watercourses along the route will be undisturbed, although indirect impacts in the absence of appropriate pollution control measures is possible.

The loss of saplings and scrub along the two routes, may reduce the availability of habitat for speckled bush-cricket. This is considered unlikely to be significant as the majority of suitable adjoining habitat will be left undisturbed, including the most suitable habitats associated with the wooded embankments on existing slopes facing south and west.

The primary habitat for scarlet malachite beetle are roof thatch/timber structures during the winter and meadows during the summer months[6]. No direct impacts upon these habitats are anticipated as part of the scheme (including those associated with Berthin Brook Wet Meadow SINC).

Opportunities exist to enhance retained areas for these species, and other more common invertebrates as part of the scheme post-construction.

Mammals (Bats)

No alterations to structures identified as having potential for roosting bats are anticipated as part of the scheme, in addition no lighting is proposed which might lower the accessibility, or suitability of these features for bats.

With public access, the bridges would also need to be subject to greater levels of maintenance than currently required in the long-term. Any repair work that affects the structure of the structures along the routes would need to be preceded by an assessment for bats although it is anticipated that unless bat roosts are situated in significant structural faults that require repair, roosts could be retained.

Overall the site, is highly suitable for foraging and commuting bats and connects other habitats including the River Usk and complex of mature broadleaved woodland to the west. As the required extent of vegetation clearance is comparatively small (saplings/scrub/tall ruderal vegetation) and no significant habitat fragmentation is anticipated, the preparation and implementation of a long-term management plan is considered sufficient to compensate for these impacts.

[6] Buglife (2018) *Species Management sheet: Scarlet Malachite Beetle*

The further assessment conducted by DCE in 2017, confirmed four trees to be lost are of moderate bat roosting potential. Removal of these trees in the absence of mitigation, may have an adverse impact upon these features.

Mammals (Badger)

The 2014 assessment identified a single hole consistent with an active outlier sett, along the Rhadyr to Usk section of the route. The 2018 survey identified a further three active mammal holes (B1-B3, Figure 4.41) along this section of the route. The size and shape of these holes were consistent with badger, but no confirmed evidence of usage by these species was found[7].

All three of the mammal holes identified in 2018 were identified within 5-10m of the proposed access track. Based on the proximity and specification of the new path, type and weight of construction machinery to be used and direction of the tunnels associated with these entrance holes (which cross-beneath the path); the proposed works pose a risk of causing significant disturbance to any badgers using the sett as well as potential tunnel collapse.

Further monitoring is required to confirm whether these entrance holes are used by badger and to confirm the status of the sett (if used by badger).

Based on the information collected to date, the entrance holes are considered mostly likely to be an occasional used outlier sett. A badger development mitigation licence from NRW would be required, if badger usage is confirmed.

No confirmed, or suspected badger setts were identified along the Little Mill to Monkswood section.

As badgers continue to be active along the two routes, it will be necessary to closely badger monitor on the site prior to construction works commencing, especially if there is a pause between the January 2018 assessment and commencement of path construction, as there is scope for badgers to build new setts.

The development of a path along this route will cause an increase in human activity. Given the existing pattern of activity by the local farming community, the local badger population is considered likely to be used to human activity. As a precautionary measure, the habitat creation and long-term habitat management at the site should allow ensure that sheltered foraging and commuting areas for badgers, independent from the path are maintained and enhanced.

Mammal (Other)

Berthin Brook is known to be used by otter, with potential for water vole (although the latter has undergone drastic declines in recent years). No works are proposed to the brook or adjoining habitat within 8m of its banks and therefore no significant impacts on water vole are anticipated.

The 2014 and 2018 surveys have not identified any confirmed resting places for otter and no works to the watercourse of bank side vegetation are proposed. Vegetation clearance and construction within 50m of the Berthin Brook, has the potential to cause minor disturbance to otter, if resting in these areas. Mitigation measures to minimise impacts upon otter will be required.

The hazel dormouse survey would suggest that these species are likely absent from suitable habitats to be directly and indirectly impacted by the proposals. However, as these species are frequently difficult to detect, a precautionary approach in regard to these species will need to be applied, with long term habitat management focused on providing improved foraging and breeding opportunities for these species.

[7] 31.01.18 – Remote monitoring of these holes commended in Jan. 2018. Unfortunately the trail camera was stolen and has not been returned. Monitoring effort of these entrances will re-commence as soon as possible.

Other mammal species with no legal protection may occur in the area including species such as hedgehog that are Section 7 Species in the Environment (Wales) Act (2017). The path will not constitute a barrier to mammal movements. The project will result in changes to the habitats along the route and the landscaping and long-term management should aim to minimise negative impacts on mammal species and enhance the route for wildlife wherever possible.

Reptiles

No evidence of reptile species has been recorded. The 2014 and 2018 assessment identified a series of features (e.g. rubble piles and spoil heaps) along the two sections of route which may provide suitable overwintering (hibernacula), basking and breeding opportunities for these species. The majority of the route is within shaded areas of lower suitability for these species.

Construction works also have potential to result in reptiles being injured or killed in contravention of current legislation. Any construction involving the removal, or modification of these features would need to consider potential impacts upon these species.

As discussed above the construction of a traffic-free path has potential to result in the permanent loss of a relatively small area of semi-natural habitat. A compensation strategy would be required to maintain enough high quality reptile habitat, with features that can be used for shelter and hibernation, to maintain any existing population in the long-term.

6 Conclusions

No nature conservation sites with statutory or non-statutory designations will be directly affected by the proposal.

The route crosses Berthin Brook in two locations. The brook is a major tributary to the River Usk / Afon Wysg SSSI/SAC. No direct impacts on this feature have been identified, but indirect effects (in the absence of mitigation) have been anticipated. A series of mitigation and pollution avoidance measures will need to be implemented to protect this feature, and the designating species it may support.

Large parts of the two routes have been subject to management and vegetation clearance either as part of gas pipeline maintenance works, or through continued usage for farm access. These management works mean that the balance of habitat clearance required relates to the removal of relatively small tree saplings, scrub and tall ruderal vegetation, along with the lifting and removal of historic railway infrastructure (ballast, rail track).

The scheme overall, will result in a permanent loss of semi-natural habitat. The overall area of habitat loss is not considered to be high (c.3ha, c. 16% of the existing green corridor), but given the high value of the corridor in which it is situated it will reduce the existing structural and species diversity of the habitat. As such an appropriate wildlife protection and enhancement plan (WPEP) are essential to enable this scheme to progress. A WPEP is presented in Section 7.0.

Existing structures along the route will remain untouched and no change in lighting are proposed.

Invasive non-native species including Japanese knotweed and Himalayan balsam are present on the site. Japanese knotweed and Himalayan balsam must be taken into account during construction, and all invasive species should be controlled in the long-term.

Protected species of amphibian are considered likely to be absent, with potential for commoner species to be present. Construction methods and long term management will need to consider how these impacts can be avoided and compensated for.

Badgers actively forage and pass through the two route sections. The 2014 survey identified a single outlier sett along the Rhadyr to Usk route, with the 2018 survey identifying a further three holes consistent with a badger sett in a similar location.

Further monitoring of these holes is ongoing. If badger usage is confirmed a disturbance/temporary exclusion licence from Natural Resources Wales would need to be sorted out to allow construction of the path in this location. The scheme as a whole is considered unlikely to cause significant impacts upon badger activity.

The scheme is anticipated to have a minor negative impact upon bats, principally due to minor habitat loss. No confirmed roosts will be impacted, with the removal of four trees requiring the application of reasonable avoidance measures. If in the event, any structures need to be repaired or restored as part of on-going management these will need to be subject to further assessment at an appropriate time of year. The proposals provide an opportunity for additional roosting sites for bats to be provided.

The 2017 dormouse survey confirmed the likely absence of this species from suitable habitats bounding and located along the route. As dormouse are known to be active in the local area, precautionary methods as regards these species when carrying out vegetation clearance will need to be followed.

Other protected and notable species have potential to occur on site including reptiles and otter. Suitable precautionary measures will need to apply when working within, or near habitats suitable for these species.

7 Recommendations

A series of mitigation and enhancement measures are required to offset and compensate the potential ecological impacts of the scheme. These have been presented in the form of a Wildlife Protection and Enhancement Plan (WPEP).

7.1 Wildlife Protection and Enhancement Plan (WPEP)

Background

A preliminary Wildlife Protection Plan (WPP) was prepared by Wildwood Ecology in 2015. A copy of this report is presented in **Appendix 5**. The purpose of the 2015 WPP and the recommendations which follow below is to ensure that the ecological impacts identified within Section 6 of this Ecological Appraisal are been addressed satisfactorily.

The Ecological Features, the anticipated impacts and recommended mitigation is summarised in **Table 8.1** below.

It is anticipated that a Habitat Management Plan (HMP) for the route will be produced following the grant of planning consent. This HMP will provide a 10yr programme of works to ensure that the enhancement measures presented in the WPEP are sustained in the long-term.

Table 8.1 – Summary of Ecological Features and mitigation measures construction of Little Mill to Usk traffic free route.

Ecological Feature	Impact	Mitigation	Enhancement
Bare ground	Permanent loss within route corridor (c.5m width)	No mitigation proposed. Habitat of negligible ecological value.	None proposed.
Berthin Brook	No direct impacts anticipated, minor adverse in-direct impact (worst case scenario)	Implementation of suitable pollution control measures (as per GPP[8]) including the safe storage of petrochemicals more than 50m from the Brook. Channel and banks of Berthin Brook are to be left undisturbed. Construction lighting directed away from this feature.	None proposed.
Broadleaved semi-natural woodland	Permanent loss (c. 1.6Ha) / potential compaction and damage of roots belonging to retained trees, damage to overhanging branches	Construction works to follow best practice guidance (BS5387:2012) – Trees in relation to development	Additional native under planting along the length of the corridor to diversify existing structural and floristic composition. Species to be planted to include hazel and honeysuckle. 70-90cm bare-rooted stock planted, either side of route at a rate of 5 plants per 100m. To be supported by suitable canes and protected with guards. Development and implementation of Habitat Management Plan (HMP) along the route. To include reinstatement of coppicing and H&S checks of retained trees.
Improved grassland	Permanent loss (minor)	Reinstatement of verge	None proposed.
Plantation woodland	Permanent loss (no significant trees to be removed)	Replacement of any trees to be removed on a like-like basis. New stock to be native and of local provenance where-ever possible.	Development and implementation of HMP. To include reinstatement of coppicing and H&S checks of retained trees.

[8] https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg

Ecological Feature	Impact	Mitigation	Enhancement
Scattered tree	None anticipated	Construction works to follow best practice guidance (BS5387:2012) – Trees in relation to development Storage area cited outside of the Root Protection Area (RPA) of any mature trees to be retained, or suitable ground protection used.	None proposed
Structures (pillbox / bridges)	None anticipated	Structures are to be left undisturbed as part of the works. No artificial lighting to be directed toward these structures during or post-construction If any repair/remediation works are required post-construction these are to be proceeded by the assessment of the structures by a Suitably Qualified Ecologist (SQE).	None proposed.
Tall ruderal vegetation (including Japanese knotweed and Himalayan balsam)	Permanent loss within route corridor (c.5m width)	Preparation and implementation of Construction Method Statement to prevent Japanese knotweed and Himalayan balsam spread. To include details on the handling, storage and treatment of contaminated soils disturbed as part of construction works. JK CMS to follow best practice.	Implementation of Japanese knotweed and Himalayan balsam treatment programme along the length of the route.
Wet ditches	No direct impacts anticipated, minor adverse impacts	Implementation of suitable pollution control measures (as per GPP[9]) including the safe storage of petrochemicals away from ditches.	Removal of any rubbish, or other debris from ditches within 10m of the route.
Amphibians	No direct impacts upon protected	Wet ditches, standing water and Berthin Brook are to be left undisturbed as part of the works.	Creation of 10 log piles (1m height x 1m length) evenly spread along each route, preferably located in a mixture of shade

[9] https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg

Ecological Feature	Impact	Mitigation	Enhancement
	species, potential risk of harm to common species	Vegetation clearance (including removal of potential hibernacula (e.g. log piles/rubble heaps)) completed ahead of hibernation period (taking in to account bats, birds, hazel dormice and reptiles.) Any common amphibians relocated by hand in to suitable adjoining habitat outside of the proposed route	conditions Creation of one hibernacula per route (1.5m tall x 3m length). Comprising of a shallow soil scrape (0.3m depth) infilled with logs and loose stone and covered-over with soil.
Badger	Disturbance/temporary exclusion (worst case scenario)	Confirm presence/likely absence of badgers (using suitable methods) of three entrance holes identified along Rhadyr to Usk route during Jan. 2018. Badger activity confirmed – seek and implement disturbance and temporary exclusion licence from NRW (July to November inclusive). The path design in this area will need to allow for potential heave caused by badger tunnels beneath. E.g. use of metal plating extending 5m either side of each tunnel. Installation of suitable ground mesh (e.g. galvanised weld/chain link mesh) either side of existing badger sett entrance holes. Mesh fixed down along the edge of the new path to discourage future badger excavation. Mesh to extend 3m down from edge of path and 10m either side of entrance holes. Post-construction monitoring as per requirements of NRW licence. Repeat of badger survey if works delayed more than 6 months (Aug/Sept. 2018). Contractor to be made aware of the potential presence of badgers. Best practice to be followed (e.g. deep excavations to be covered or to have at least one ramped side).	Planting of a discrete block of fruiting shrub and scrub species within 50m of sett (c.75m2) Bare-rooted shrub and scrub species planted in clusters of 5-7 plants per 15m2. Planting established away from proposed route and to comprise a mixture of native species (e.g. blackthorn, hawthorn, hazel and crab apple). Shrub and scrub fitted with canes and protective guards. Long term management of these areas detailed within HMP.

Ecological Feature	Impact	Mitigation	Enhancement
Bats	Minor loss of foraging habitat	Four trees identified as having features suitable for bats to be felled in accordance with reasonable avoidance measures (e.g. use of brash matts, pre-start check by suitably qualified arborist). Works to proceed with caution, with contact details for local bat worker supplied to contractor undertaking tree felling work. Works best completed Sept-Nov. inclusive. Night working is to be avoided with construction lighting directed away from structures along the route and focused as close as possible to ground level (avoid lighting of tree canopy). Structures to be left undisturbed or subject to suitable further assessment by SQE.	Management prescriptions within HMP to include measures to benefit bats (e.g. identification and retention of natural reserve trees with associated linkages for bats[10]). Installation of 12 kent-style timber bat boxes along each route. To be erected in suitable trees at min. 4m height, with south and west facing aspect.
Otter	No direct impacts anticipated, minor disturbance (worst case scenario)	Implementation of suitable pollution control measures (as per GPP[11]) including the safe storage of petrochemicals more than 50m from the Brook. Channel and banks of Berthin Brook are to be left undisturbed. Construction lighting directed away from this feature. Check for active holts within 50m of crossing at Berthin Bridge – 6 weeks before works are due to commence.	Management prescriptions within HMP to include measures to benefit otter (e.g. maintenance of a shrub layer, continuous tree cover)
Water vole / Fish	None anticipated	Wet ditches, standing water and Berthin Brook are to be left undisturbed as part of the works. Implementation of suitable pollution control measures (as per GPP[11]) including the safe storage of petrochemicals.	Management prescriptions within HMP to include measures to benefit water vole (e.g. small reduction in canopy shading of southern bank of Berthin Brook to encourage marginal plant growth)

[10] Forestry Commission (FC) *Woodland Management for Bats* https://www.forestry.gov.uk/pdf/woodland-management-for-bats.pdf/$FILE/woodland-management-for-bats.pdf
[11] https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg

Ecological Feature	Impact	Mitigation	Enhancement
		Construction lighting directed away from any wet ditches, standing water and Berthin Brook.	
Hazel dormouse	None anticipated	Precautionary approach to be followed. Sensitive timing of works (taking in to account amphibians, reptiles, bats and nesting birds). Vegetation clearance completed – Sept-Oct. inclusive, or November-December. Vegetation clearance completed using hand tools. Toolbox talk given to contractors responsible for any vegetation clearance indicating signs and measures to take should dormouse be encountered.	Proposed shrub and scrub under planting will be directly beneficial (see broadleaved semi-natural woodland). HMP to include management prescriptions to benefit Hazel dormouse Installation of five dormouse nest boxes in-suitable trees along each route (set-back minimum of 5m from edge of path)
Invertebrates	Minor habitat loss	Vegetation clearance kept to minimum possible Existing fallen and standing deadwood outside of working area to be left undisturbed	HMP to include management prescriptions to favour invertebrates, including targeted coppicing/creating of scalloped edges to provide continuum of full sunshine and shade Log pile creation will provide additional hibernacula for inverts
Nesting birds	Habitat loss / potential disturbance or destruction of nests	Vegetation clearance completed outside of bird nesting period (Sept-February inclusive) – taking in to account other species (e.g. bats, dormice, reptiles and amphibians) If works required during nesting bird season, preceded by check by SQE – Please note this can only be applicable to small areas (10m x 10m area).	HMP to include management prescriptions to benefit nesting birds (e.g. coppicing / maintenance of tree canopy) Installation of 10 timber bird boxes along each route, supporting range of entry hole sizes.
Reptiles	Minor habitat loss / potential disturbance or injury	Vegetation clearance timed during active period (February to early November (inclusive). Dismantling rubble and spoil heaps by hand. Toolbox talk given to contractors responsible for any	Log pile and hibernacula (amphibians / reptiles / invertebrates) would be directly beneficial to these species HMP to include management prescriptions to benefit reptiles

[12] https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg

Ecological Feature	Impact	Mitigation	Enhancement
		vegetation clearance indicating signs and measures to take should reptiles be encountered.	

Timings

As potential impacts upon protected species have been identified, works will need to be timed to coincide with the period least likely to cause significant disturbance to these species.

A detailed breakdown of the timings for the various protected and notable species are presented in **Table 1** below, which is extracted from Section 3.0 of Wildwood Ecology's WWP.

Table 1. Optimal timing of works to minimise impacts on protected species – Red: High risk of impacts; Pale yellow: Medium risk of impact without working method statement in place; Green: Low risk of impact. The bright yellow (September and October) columns indicate the best time to undertake the works with minimal risk to protected species as long as this Wildlife Protection Plan is followed at all times.

Protected species	J	F	M	A	M	J	J	A	S	O	N	D
Bats												
Nesting Birds												
Badger												
Otter												
Reptiles												
Amphibians												
Common Dormouse												
Water Vole												

Source: WWP (Ref: WWE140301WPP)

Based on these timings – vegetation clearance would be best times to be completed between **September and October**.

If this is not possible, works will need to be phased:

- Vegetation above 300mm height is removed November to February inclusive
- Vegetation below 300mm removed February – April, or August-October.

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Appendix 1 -2014 PEA – Wildwood Ecology

Wildwood Ecology Ltd

SUSTRANS

LITTLE MILL TO USK – ROUTE

FEASIBILITY PRELIMINARY

ECOLOGICAL APPRAISAL

01 SEPTEMBER 2014

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Client:	Sustrans
Site/Job:	Little Mill to Usk – Route Feasibility
Report title:	Preliminary Ecological Appraisal
Report reference:	WWE140301

Grid Reference:	SO30
Date(s) of survey(s):	1st, 2nd, and 4th April 2014
Surveyed by:	Dr Alexandra Pollard BSc (Hons), PhD, MCIEEM Dr Matthew Davies BSc (Hons), PhD, ACIEEM
Architect/Agent:	Gwyn Smith
Planning reference:	n/a

VERSIONING

V	Status	Changes	Author	Position	Date
1	Draft	-	A Pollard	Ecologist	16/05/2014
	Final	Incorporation of route scenarios	A Pollard	Ecologist	01/09/2014

	Name	Position	Date
Reviewed by:	Bob Firmin	Senior Ecologist	03/06/2014
Approved for issue:	Richard Dodd	Principal Ecologist	03/06/2014
Issued to client:	Alex Pollard	Ecologist	04/06/2014

DISCLAIMER

This document has been prepared by Wildwood Ecology Limited for Sustrans solely as a Preliminary Ecological Appraisal. Wildwood Ecology Limited accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

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

EXECUTIVE SUMMARY

- Wildwood Ecology Limited was contracted to undertake a Preliminary Ecological Appraisal by Sustrans (the Client) on sections of disused railway between Little Mill and Usk (the Site), in order to inform the feasibility of the route for conversion into a path for use by walkers, cyclists and/or horse riders.
- The proposed route mainly follows the course of a disused railway line.
- The wider landscape is mainly agricultural fields (pasture and arable) with some well-connected pockets of woodland. The towns of Usk and Little Mill can be found to the east and west (respectively), and a large munitions base is situated between the eastern and western portions of the route. Waterbodies including the River Usk and Llandegfedd Reservoir are nearby.
- We surveyed the proposed multi-user route and found use and potential for use by bats, otter, water vole, reptiles and dormouse, and confirmed the presence of badger and breeding birds. As such we recommend that further surveys are carried out prior to works commencing.
- The three proposed route scenarios all propose some level of habitat displacement, with the wider scenario likely to cause the most impact on nesting birds, badgers, common dormouse and bats through the removal of scrub and activity along the banks.
- Bats - if any bridges are to be altered or to have any crevices filled, further surveys to establish if bats are roosting within them should be carried out. If any tree with hole extending into the tree/branch (e.g woodpecker hole or rot pocket) is to be felled, further survey to determine if bats are present will be required. Continuous habitat should be maintained to ensure that commuting and foraging routes are not lost.
- Dormouse - a nest tube survey for dormice will be required in the areas around where hedges are to be bisected, and where any scrub is to be cleared.
- Badger - further survey effort will be required to determine the number of badgers, setts and type of sett likely to be affected by the Development.
- Reptiles – presence/absence surveys for reptiles will be required at the Target Noted locations, if these habitats are to be removed.
- Water vole and otter - no further surveys for these species are required, but pre-works checks around the area of work (i.e. where the proposed route is directly adjacent to and crosses water) should be carried out, and a mitigation/protection plan produced.
- Breeding birds - works should not be carried out during the breeding season (March to August) in order to prevent disturbing breeding birds or destroying nests.
- A lighting plan should be produced if any site lighting is planned for both the construction phase and for the finished Development in order to demonstrate minimal disturbance to wildlife. If no site lighting is planned then confirmation of this must be provided.
- The presence of invasive species (Himalayan balsam, Japanese knotweed and giant hogweed) at several locations along the site will require management to prevent their spread.

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1.0 INTRODUCTION

1.1 Wildwood Ecology Limited was contracted to undertake a Preliminary Ecological Appraisal by Sustrans (the *Client*) on sections of disused railway between Little Mill and Usk (the *Site*), in order to inform the feasibility of the route for conversion into a path for use by walkers, cyclists and/or horse riders.

Site description

1.2 The proposed route mainly follows the course of a disused railway line.

1.3 The wider landscape is mainly agricultural fields (pasture and arable) with some well-connected pockets of woodland. The towns of Usk and Little Mill can be found to the east and west (respectively), and a large munitions base is situated between the eastern and western portions of the route. Waterbodies including the River Usk and Llandegfedd Reservoir are nearby.

Figure 1. The *Site* (defined by the red lines) running from Little Mill (in the west) to Usk (in the east). Image used under licence (© Google 2014).

Proposed works

1.4 The proposed works to the *Site* include some vegetation clearance, railway track and sleeper removal, tarmac installation, and landscaping of on and off ramps at Usk Island (eastern end), to enable multi-user access along the proposed route.

2.0 PLANNING POLICY AND LEGISLATION

2.1 The following local and national planning policy and both primary and European legislation relating to nature conservation and biodiversity status are considered of relevance to the current proposal.

Planning and biodiversity

2.2 Local Authorities have a requirement to consider biodiversity and geological conservation issues when determining planning applications under the following planning policies.

Planning Policy Wales (2012) and Technical Advice Note 5 (2009)

2.3 Planning Policy Wales (Edition 5, November 2012) sets out the land use planning policies of the Welsh Government, with Chapter 5 dealing with Conserving and Improving Natural Heritage and the Coast. The advice contained within Planning Policy Wales (PPW) is supplemented for some subjects by Technical Advice Notes (TAN's).

2.4 TAN 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

2.5 Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should':

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been

fully considered;

Legislation and biodiversity

2.6 Certain species of animals and plants found in the wild in the UK are legally protected from being harmed or disturbed. These species are listed in the Wildlife and Countryside Act 1981 (as amended) or are named as European Protected Species (EPS) in the Conservation of Habitats and Species Regulations 2010 (as amended). These two main pieces of legislation have been consulted when writing this report and are therefore described in detail within this section.

2.7 Other relevant legislation and policy documents that have been consulted include - The Countryside and Rights of Way Act 2000; The Countryside and Rights of Way Act 2000; Natural Environment and Rural Communities Act 2006; The Hedgerow Regulations 1997; and UK Post 2010 Biodiversity Framework.

2.8 There is also legislation that legally protects certain animals - for example, the Protection of Badgers Act (1992) protects badgers and their setts, and the Deer Act (1991) places restrictions on actions that can be taken against deer species.

Wildlife & Countryside Act 1981 (as amended)

2.9 The Wildlife & Countryside Act 1981 (as amended) [WCA] is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part I within the Act deals with the protection of wildlife.

2.10 Most European Protected Species offences are now covered under the Conservation of Habitats and Species Regulations (see below), but some 'intentional' acts are still covered under the WCA, such as obstructing access to a bat roost.

2.11 The WCA prohibits the release to the wild of non-native animal species listed on Schedule 9 (e.g. Signal Crayfish and American Mink). It also prohibits planting in the wild of plants listed in Schedule 9 (e.g. Japanese Knotweed and Rhododendron ponticum) or otherwise deliberately causing them to grow in the wild. This is to prevent the release of invasive non-native species that could threaten our native wildlife.

2.12 The provisions relating to animals in the Act only apply to 'wild animals'; these are defined as those that are living wild or were living wild before being captured or killed. It does not apply to captive bred animals being held in captivity.

2.13 There are 'defences' provided by the WCA. These are cases where acts that would otherwise be prohibited by the legislation are permitted, such as the incidental result of a lawful operation which could not be reasonable avoided, or actions within the living areas of a dwelling house.

2.14 Licensing: certain prohibited actions under the Wildlife and Countryside Act may be undertaken under licence by the proper authority. For example scientific study that requires capturing or disturbing protected animals can be allowed by obtaining a licence – e.g. bat surveys.

Conservation of Habitats and Species Regulations 2010 (as amended)

2.15 The Conservation of Habitats and Species Regulations 2010 (as amended) (which are the principal means by which the EC Habitats Directive is transposed in England and Wales) update the legislation and consolidate all the many amendments which have been made to the Regulations since they were first made in 1994.

2.16 These regulations provide for the:

- protection of European Protected Species [EPS] (animals and plants listed in Annex IV Habitats Directive which are resident in the wild in Great Britain) including bats, dormice, great crested newts, and otters;
- designation and protection of domestic and European Sites - e.g. Site of Special Scientific Interest [SSSI] and Special Area of Conservation [SAC]; and
- adaptation of planning controls for the protection of such sites and species.

2.17 Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in exercising their function – i.e. when determining a planning application.

2.18 There is no defence that an act was the incidental and unavoidable result of a lawful activity.

2.19 Licensing: it is possible for actions which would otherwise be an offence under the Regulations to be undertaken under licence issued by the proper authority. For example, where a European Protected Species has been identified and the development risks deliberately affecting an EPS, then a 'development licence' may be required.

<u>Species protection</u>

2.20 The following protected species information is relevant to this report. Legislation is only discussed in relation to planning and development; other offences may exist.

Amphibians

2.21 The common frog, common toad, common newt, and palmate newt receive limited protection under the Wildlife and Countryside Act 1981 (as amended), making it illegal to sell or trade them.

2.22 The Great Crested Newt and Natterjack Toad are fully protected under the Conservation of Habitats and Species Regulations 2010 (as amended) as European Protected Species. It is illegal to:

- Deliberately capture, injure, kill, or disturb either species,
- Intentionally or recklessly obstruct access to any structure/place used for shelter or protection, or
- Damage or destroy a breeding site or resting place.

Badger

2.23 Badgers are protected in the UK under the Protection of Badgers Act 1992. Under the act it is an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat[1] a Badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett[2] (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

[1] The intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting "cruel ill treatment" of a Badger

[2] A sett is defined as "any structure or place which displays signs indicating current use by a Badger". Advice issued by Natural England (June 2009) is that a sett is protected as long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger.

2.24 The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain; it is not intended to prevent properly authorised development.

Bats

2.25 All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence inter alia to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place of a bat.

In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

2.26 If proposed development work is likely to destroy or disturb bats or their roosts, then a licence will need to be obtained from Natural Resources Wales, which would be subject to appropriate measures to safeguard bats.

2.27

Birds

2.28

2.29

2.30

the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2010 (as amended). All wild birds, their nests and eggs are protected it an offence to:

In the UK,

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any such bird whilst it is in use or being built; or
- take or destroying an egg of any such wild bird.

The law covers all species of wild birds including common, pest or opportunistic species.

Special protection against disturbance during the breeding season is also afforded to those species listed on Schedule 1 of the Act.

Dormice

2.31 The common dormouse is classed as an European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence inter alia to:

- Deliberately capture, injure, or kill a dormouse;
- Deliberately disturb dormice;
- Damage or destroy a breeding site or resting place of a dormouse.

2.32 In addition, the dormouse is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which a dormouse uses for shelter or protection; or

- Disturb a dormouse while occupying a structure or place which it uses for that shelter or protection.

Otters

2.33 The European Otter, *Lutra lutra* is an European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence inter alia to:

- deliberately capture, injure or kill any wild otter;
- deliberately disturb wild otters;
- damage or destroy a breeding site or resting place of an otter.

In addition, the otter is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- disturbs an otter while it is occupying a structure or place which it uses for shelter or protection; or
- obstructs access to such a place.

2.34 If proposed development work is likely to destroy or disturb otters or their resting places, then a licence will need to be obtained from Natural Resources Wales, which would be subject to appropriate measures to safeguard otters.

2.35

Reptiles

2.36 Adders, slow worms, grass snakes and common lizards are protected against killing and injuring under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it illegal to intentionally kill or injure a common reptile. As a result, reptiles must be removed from areas of development and relocated onto suitable release sites before any site works can commence.

2.37 Smooth snakes and sand lizards are European Protected Species under schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). This makes it illegal to carry out the following activities:

- Deliberately or recklessly disturb, capture or kill these animals;
- Deliberately or recklessly take or destroy eggs of these animals;
- Damage or destroy a breeding site or resting place of such a wild animal; or
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead

animal, or any part of, or anything derived from such a wild animal.

Water voles

2.38 The water vole is listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), for which the following are offences:

- Deliberately or recklessly disturb, capture or kill these animals;
- Deliberately or recklessly take or destroy eggs of these animals;
- Damage or destroy a breeding site or resting place of such a wild animal; or
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead animal, or any part of, or anything derived from such a wild animal.

3.0 METHODOLOGY

3.1 The methodology used for this survey consisted of a desktop study, habitat survey and faunal survey.

Desktop study

3.2 Information on wildlife habitats and ecological statutory designations has been obtained from the Natural Resources Wales (*NRW*) online Protected Sites Map and South East Wales Biodiversity Records Centre (*SEWBReC*). This includes:

- statutory designations - Sites of Special Scientific Interest (*SSSI*s) or Special Areas of Conservation (*SAC*s); and
- non-statutory designations - Sites of Importance for Nature Conservation (*SINC*s) and Wildlife Trust Sites (*WTS)*.

3.3 In order to compile background information on the *Site* and its immediate surroundings, the South East Wales Biodiversity Records Centre (SEWBReC) was consulted and biodiversity data obtained within a 500m radius of the *Site*.

Habitat survey

3.4 This was carried out by Dr Alexandra Pollard, MCIEEM, and Dr Matthew Davies, ACIEEM on the 1st, 2nd and 4th April 2014, following the Chartered Institute of Ecology and Environmental Management (*CIEEM*) Preliminary Ecological Appraisal (2012) guidelines and standard Phase 1 Habitat Survey protocol (*JNCC*, 2010).

3.5 A map was drawn up incorporating target notes used to highlight features of particular ecological interest.

3.6 Plant species included in Schedule 9 of the Wildlife and Countryside Act (1981), as amended, were searched for during the Survey. Examples of plants that appear in the schedule include invasive species such as Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*). It is an offence under the Act to spread or cause the spread of these species. The presence of other highly invasive plant species, such as Himalayan balsam (*Impatiens glandulifera*), was also investigated during the survey.

Faunal survey

3.7 Habitats and features with potential to support protected and/or notable conservation priority species of fauna, plus any associated field signs, were recorded.

3.8 In the context of this report, protected or notable conservation priority fauna species were those considered to meet any of the following criteria:

- Species protected by UK or European legislation;
- UK Post 2010 UK Biodiversity Framework priority species or Local Biodiversity Action Plan (*LBAP*) species;
- Nationally rare or nationally scarce species;

- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber Lists).

Survey Limitations

3.9 The data enquiries and ecological survey will not produce a comprehensive list of plants and animals as this will be limited by factors that influence their presence (e.g. activity and dormancy periods). An assessment can however be made of the habitats within the survey area as to their nature conservation value and potential to support protected or priority species.

3.10 No other limitations were encountered during the course of either the desk study or the daytime field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the *Site*'s ecological value could be made.

4.0 RESULTS

Desk Study

Statutory designations

4.1 No land subject to non-statutory or statutory designations of nature conservation interest was present on *Site.*

4.2 There are seven statutory designations of nature conservation within a 5km diameter. These include five SSSIs, one SAC and one National Park. Please see Table 1 below for further information.

Non-statutory designations

4.3 There are four SINCs within 500m of the *Site*. A further eight non-statutory protected sites are designated for ASNW/PAWS (Ancient Semi-natural Woodlands/ Plantation on Ancient Woodlands). Please see Table 1 below for further information.

Table 1 – Statutory protected sites found within 5 km and non-statutory protected sites within 500m of the *Site*

Site Name	Designation	Features	Proximity to Site (at nearest point)	Affected by Development?
River Usk	SAC/SSSI	River, with migratory and resident fish species, otter and water crowfoot beds	<10m East	No
Berthin Brook Wet Meadow	SINC	H7 Marshy Grassland (Note: Contributory Species *Carex disticha*)	~ 20m South	No
Beech Hill Farm	SINC	H4 Neutral Grasslands	~ 430m Northeast	No
St Michael's Church, Glascoed	SINC	H4 Neutral Grasslands	~ 445m Southwest	No
Little Castle (LDP Candidate Site CS/0033)	SINC	H4 Neutral Grasslands	~ 500m East	No
Cwm-Ton, Glascoed	SSSI	Exposures of Silurian rocks	0.52km South	No
Llandegfedd Reservoir	SSSI	Inland water, important for wildfowl	1.14km South	No
Brecon Beacons	National Park	Category Five Protected Landscape Area (managed for recreation and landscape conservation)	1.4km Northwest	No
Priory Wood	SSSI	Semi-natural broadleaved woodland	3.1km North	No
Cilwrgi Quarry	SSSI	Exposures of Silurian rocks	3.8km South	No

Biodiversity records

4.4 The SEWBReC search returned 61 species recorded within 500m of the *Site* within the last ten years. Table 2 outlines these findings, breaking the results into "Protected & priority species," "Other species of conservation concern," and "Species of local conservation concern."

4.5 Some additional records provided were for species found further than 500m from the *Site*. This included mobile species which, due to the possibility of them using land within the

search area as part of their territory, or for part of their life cycle, should be taken into account in an ecological assessment.

Table 2 - Summary of species records from local record centre biodiversity search within a 500m buffer (records from the last 10 years).

		# of species (# of records)		
Protected & priority species		**Totals**	**< 500m**	**> 500m**
Species	Bats	10 (52)	9 (48)	2 (4)
	Dormouse	1 (1)	-	1(1)
	Great crested newt	1 (3)	-	1 (3)
	Otter	1 (3)	1 (3)	-
	Water vole	1 (1)	1 (1)	-
Groups	Birds	11 (20)	6 (8)	7 (12)
	Fish	2 (3)	2 (3)	-
	Invertebrates	2 (2)	2 (2)	-
	Other amphibians (non-EPS)	2 (2)	2 (2)	-
	Other mammals (non-EPS)	3 (4)	3 (4)	-
	Plants	1 (2)	1 (2)	-
	Reptiles	1 (1)	-	1 (1)
	Fungi	-	-	-
Other species of conservation concern		19 (35)		
Species of local conservation concern		15 (18)		

Habitat survey

4.6 The *Site* is broken into three sections (see Appendix I), labelled as 1 (Eastern), 2 (Central) and 3 (Western) for ease of description and mapping. The following notes should be used in conjunction with the map and target notes in Appendix I, and relate to locations where the development of the proposed route affects habitats or species. The majority of the route follows the course of a disused railway line and gas line.

Eastern section (Plan 1)

4.7 This section of path includes the prospective route's on/off access ramps to/from the level of the disused railway and follows two tracks: one running west-east along the current disused railway line, turning towards the north-east through woodland and following field edges, emerging west of the entrance to the Equestrian Centre of the Usk Campus of Coleg Gwent on the A472; and one north- south along the river and woodland, emerging at a car park of the Usk Campus of Coleg Gwent.

Track running north-south along the river - Faunal observations

Otter

4.8 Likely otter slides and route-ways were found immediately after the bridge, heading north (target note 1), leading down to the river, from the farmland, cutting across the path. Slightly further north, more tracks were found, suggestive of otter using the bank to access the river.

Bats

4.9 Several of the larger and older trees (pedunculate oak *Quercus robur* and willow sp *Salix sp*) on the edge of the woodland to the left of the proposed route have high potential to support roosting bats. This includes old woodpecker holes and gaps and crevices on the trees (target note 4).

Badger

4.10 Badger tracks were found within the woodland around the Berthin Brook, adjacent to the proposed route (within 20m).

Birds

4.11 Birds are likely to be nesting within a large proportion of the habitat adjacent to the proposed routes and a nest of a song thrush *Turdus philomelos* was found within Scrub habitat near to the college. Other birds seen include: goosander *Mergus merganser*, goldcrest *Regulus regulus*, dunnock *Prunella modularis*, dipper *Cinclus cinclus*, blackbird *Turdus merula*, robin *Erithacus rubecula* and chiffchaff *Phylloscopus collybita*.

Track running north-south along the river – Floral/habitat observations

The proposed route was predominantly Bare Ground (existing footpath), with some vegetation growing along the edges including butterbur *Petasites hybridus*, cuckoo flower *Cardamine pratensis* and cranesbill sp *Geranium sp* following the existing footpath. At the start of this section of route (next to the Usk Island car park), immediately adjacent to the east was an area of Scrub with some trees (including ash *Fraxinus excelsior*, bramble *Rubus fruticosa*, willow sp *Salix sp* and sycamore *Acer pseudoplatanus*). Further to the east was the River Usk (Running Water). To the west was Arable farmland with a fence-line demarking the boundary.

4.13 The invasive plants giant hogweed *Heracleum mantegazzianum* and Japanese knotweed *Fallopia japonica* were found adjacent to the Berthin Brook, to the east of the proposed route (target notes 5 and 6).

4.14 Further north, the route turned slightly to the west following the outer edge of some Broadleaved Semi-natural Woodland (including pedunculate oak *Quercus robur*, sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, Holly *Ilex aquifolium* and blackthorn *Prunus spinosa*), Scrub (including bramble *Rubus fruticosa*, *Umbelliferae sp*, and willowherb *Epilobium sp*) and the course of the Berthin Brook (Running Water). To the west, after the Arable field, were Coniferous Plantation (*Coniferae sp*), Scrub (species as before) and some Buildings, Improved Grassland and Amenity Grassland associated with the College.

4.15 The route then turned west following the road through the College car parks and the course of the Berthin Brook.

Track running east-west – Faunal observations

Birds

4.16 The Scrub and Broadleaved Woodland habitat provided many opportunities for birds to nest within the length of this section. A magpie *Pica pica* nest was observed adjacent to the snack bar on the Usk Island car park. Further west, within the Scrub, European robin *Erithacus rubecula* and song thrush *Turdus philomelos* were observed to be nesting within bramble *Rubus fruticosa.* Nest boxes were seen on several of the larger trees near to the College farm buildings. Wren *Troglodytes troglodytes* and robin *Erithacus rubecula* were observed showing nesting behaviours at the wood pile adjacent to the College farm buildings. An observation hide (Target Note 9) was noted overlooking the marshy grassland to the south of the proposed route (near Rhadyr Orles), with a mute swan *Cygnus olor* showing on the pond to the south.

Other birds heard or seen include: blackbird *Turdus merula,* blackcap *Sylvia atricapilla,* blue tit *Cyanistes caeruleus,* chaffinch *Fringella coelobs*, chiffchaff *Phylloscopus collybita*, great tit *Parus major* and nuthatch *Sitta europaea.*

Badger

4.17 Badger *Meles meles* tracks were found running throughout the Scrub at the eastern part of this section, with a recently used latrine found within the pill box (Target Note 3) facing north-east. Further to the west, a small recently used sett (Target Note 20) was found to the south of the proposed route, within the bank. Further tracks were found along the proposed route around this area.

Bats

4.18 A single bat dropping was found within the pill box (Target Note 4). No other signs of bats or actual bats were found within the pill box or the other pill box further to the west. Several of the older trees along the sides of the existing track-way have medium potential to support roosting bats as there were several crevices and gaps suitable for crevice dwelling species.

Reptiles

4.19 Piles of roofing tiles and debris close to the college (eastern track) were found, which may provide insolation and refugia opportunities for a range of reptile species. Adjacent to the route on the

eastern track, approaching the College farm buildings, a mosaic of differing sward height grasses, tall ruderal vegetation, bare earth plus several piles of wood and debris were observed, providing suitable habitat for foraging, insolation and refugia for reptiles. There was also nearby standing water (ditch). No reptiles were seen.

Amphibians

4.20 Habitat suitable for amphibians was found at Target Note 10, near to the College farm buildings and to the west of the residential houses at the northern end of the proposed route, in the form of ditches with water. Additionally, the Rhadyr Orles woodland and the woodland to the south of these houses was found to be very damp with high levels of humidity and standing water (in Rhadyr Orles). These areas would also be suitable to support non-breeding amphibians. No amphibians were found.

Otter

4.21 Potential otter *Lutra lutra* usage of Berthin Brook (Target Note 1) was found (slide and trackway) where the proposed route crosses the bridge to the east of Rhadyr Orles.

Water vole

4.22 Similarly, this location provided opportunities (such as suitable bank features and water quality) for water vole *Arvicola amphibius*, although no signs were found.

Dormouse

4.23 The hedgerow at the northern boundary (adjacent to the road leading to the BAE Systems Works) was found to be suitable for dormouse *Muscardinus avellanarius* due to the abundance of vegetation providing year round food supply (bramble, hazel, hawthorn) and cover. However, no signs or actual dormouse were found. Target Note 12 refers to the entire hedgerow.

<u>Track running east-west – Floral/ habitat observations</u>

4.24 The proposed route followed an existing track-way (Bare Ground) along much of the way. The starting point at Usk Island (both the east and west sides of the A472) was predominantly Scrub (including bramble *Rubus fruticosa*) and young Broadleaved Woodland, comprised sycamore *Acer pseudoplatanus*, ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*.

4.25 A stand of Japanese knotweed *Fallopia japonica* was found adjacent to the pill box (with badger latrine and bat dropping). A further stand adjacent to the western pill box was also found. Target notes 3 and 4.

4.26 Mature trees were found along the banks of the disused railway and edges of the fields including pedunculate oak *Quercus robur.*

4.27 Post and wire fences were observed along the track, along with some well-connected hedgerows.

4.28 Ditches with slow-moving and standing water were found adjacent to the track, with some dry ditches present formed by the banking of the disused railway.

4.29 The Broadleaved Woodland (Rhadyr Orles) at the western end of this section, was found to be very wet with areas of standing water. Species present include alder *Alnus glutinosa*, ash *Fraxinus excelsior,* blackthorn *Prunus spinosa*, willow *Salix sp* and hawthorn *Crataeus monogyna*. The understorey included marsh marigold *Caltha palustris*, wood anemone *Anemone nemorosa*, lesser

celandine *Ranunculus ficaria,* dock *Rumex sp*, nettle *Urtica dioica*, cleavers *Galium aparine* and ivy *Hedera helix*.

4.30 The proposed route then followed the edge of the woodland, within a horse-grazed Improved Grassland field. Species found within this field include creeping buttercup, dock *Rumex sp*, lesser celandine *Ranunculus ficaria,* (near woodland edge), thistle *Circium sp*, rosebay willowherb *Chamerion angustifolium* and yarrow *Achillea millefolium*. A small amount of rush *Juncus* was found adjacent to the plantation woodland.

4.31 Adjacent to this field (to the south-east) was an area of Mixed Plantation Woodland, with silver birch *Betula pendula*, pine *Pinus sp*, pedunculate oak *Quercus robur* and willow sp *Salix sp*.

4.32 The route diverges along the north-westerly field edge and along the north-easterly edge. The former route joins an existing track way at the field gate (heading towards the north-east) with an established garden and hedgerows to the north. A partially shaded ditch (with water) follows the southern edge of this track for several metres. This track crossed a small fast flowing stream (tributary of the Berthin Brook) before running between two residential properties.

4.33 The latter route ran along the Plantation Woodland before it entered wet Broadleaved Woodland. It then crossed the stream over a small bridge (in a state of disrepair), before crossing the horse grazed Improved Grassland of the Equestrian College to reach the A472. The woodland comprised alder *Alnus glutinosa*, birch *Betula sp*, poplar *Populus nigra*, ash *Fraxinus excelsior* and willow sp *Salix sp* with an understorey of ivy *Hedera helix*, lords and ladies *Arum maculatum*, yellow flag *Iris pseudacorus*, *Sphagnum spp* and primrose *Primula vulgaris*.

Central section (Plan 2)

4.34 This section is described starting from Monkswood, heading west towards Little Mill.

4.35 This route follows the A472 diverging south along a track for approximately 200m before turning west to meet West Road, and then heading towards the BAE Systems Glascoed Works. The route then cuts through to meet Wern Lane (towards the nurseries) and then continues west. The other diverged route follows the A472 (around the southern boundary of the workshops), south onto West Road to meet the other route at the nurseries on Wern Lane.

4.36 Westwards, the route follows a straight line along the road until the road bends north. The route continues across the field, over the Berthin Brook, following the road again until the disused railway, where it turns to the east and west (under the bridge).

Faunal observations

Bats

4.37 Crevices suitable to be used as bat roosts were observed within an elder *Sambucus nigra,* adjacent to the lane leading from the A472 to Coed Cox.

4.38 Similarly, crevices were seen in the pedunculate oaks *Quercus robur* adjacent to Wern Lane leading to where the proposed route joins the disused railway.

4.39 The bridge over the disused railway (route passing underneath) also provided some roosting opportunities for bats, in the form of gaps between the stones.

Reptiles

4.40 There were areas with habitat suitable for reptiles along the route at Target Note 7: within wood and debris piles at the corner of the route as it turned from the A472 onto the lane leading to Coed Cox, and across from the nurseries on Wern Lane.

Badger

4.41 Badger trails were found on the lane leading to Coed Cox, cutting into and through hedgerows on both sides of the lane.

4.42 Well-used badger trails and hairs were found running through the hedge and across Wern Lane, and crossing the path leading towards the compound (Target Note 3).

4.43 Badger trails were also found along the length of the disused railway.

Birds

4.44 A songthrush *Turdus philomelos* nest was found (3 chicks newly hatched, 1 egg remaining) within the hedgerow leading towards Coed Cox. A blackbird *Turdus merula* was seen showing nesting behaviour, entering the garage at the western end of West Road (northern part of this road).

Suitable nesting habitat was found throughout the Scrub on the disused railway.

4.45 Other birds heard and seen include: great tit *Parus major,* robin *Erithacus rubecula,* goldfinch *Carduelis carduelis,* starling *Sturnus vulgaris,* dunnock *Prunella modularis,*
4.46 chaffinch *Fringella coelobs,* mallard *Anas platyrhynchos,* buzzard *Buteo buteo* and chiffchaff *Phylloscopus collybita,*

Water vole

4.47 Habitat suitable for water vole was observed along sections of the Berthin Brook (Target Note 13), with some ambiguous footprints found under the bridge (these may have been rat prints).

Otter

4.48 Otter spraint and footprints were found under the same bridge, along with mink *Neovison vison* footprints.

Amphibians

4.49 Habitat suitable for use by non-breeding amphibians could be found within the Marshy Grassland at Target Note 18.

4.50 Ditches and areas of standing water along the disused railway were also observed, which may provide breeding habitat for several amphibian species. No amphibians were seen.

Dormouse

4.51 Suitable dormouse habitat (Target Notes 12) was found in particular within the Scrub along the disused railway, and within the hedges along the track running towards Coed Cox, with

a smaller possibility of them using the less well-connected and flailed hedges along the south of Wern Lane. No dormice, or signs of dormice were seen.

Other fauna

4.52 A juvenile fox was seen close to the eastern end of the disused railway.

Floral/habitat observations

4.53 The route initially followed an existing pathway along the A472 (Hardstanding) with a fence and verge (including chives *Allium schoenoprasum*, cleavers *Galium aparine*, willowherb sp *Epilobium sp*, herb robert *Geranium robertianum*, cranesbill *Geranium sp* and dock *Rumex sp*), then a hedge (sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, ivy *Hedera helix* and ash *Fraxinus excelsior*). The route then lead south along a track-way (Bare Earth) bounded by hedgerows (with ivy *Hedera helix* and hazel *Corylus avellana*) and a stand of Japanese knotweed *Fallopia japonica*.

4.54 One proposed route cut through the hedgerow to the west, following the edge of the workshops (a hedgerow) within an Improved Grassland field. It then rejoined the Hardstanding alongside the A472 before it turned south along West Road adjacent to residential properties (including car parking areas and Amenity Grassland), and joined the other proposed route on Wern Lane at the nurseries (via a well-pruned blackthorn *Prunus spinosa* and ivy *Hedera helix* hedge).

4.55 The other route cut through the hedge and Improved Grassland in a westerly direction to meet West Road (Hardstanding). It passed several beech *Fagus sylvatica* trees. At the end of the residential properties, a north turn towards Wern Lane was made across Amenity Grassland, adjacent to some bracken *Pteridium aquilinum* and Tall Ruderal vegetation (including bramble *Rubus fruticosa,* nettle *Urtica dioica* and rosebay willowherb *Chamerion angustifolium*) along a fence. *Note – piece of Asbestos within this hedgerow – Target Note 17*.

4.56 The route then crossed into Improved Grassland, with a heavily flailed hedgerow to its north (following Wern Lane). Species found within this included hawthorn *Crataegus monogyna,* ivy *Hedera helix,* sessile oak *Quercus petraea,* blackthorn *Prunus spinosa* and hazel *Corylus avellana,* with some greater stitchwort *Stellaria holostea.*

4.57 The route continued west where the Improved Grassland became Marshy Grassland, with alder *Alnus glutinosa*, soft rush *Juncus effusus,* marsh marigold *Caltha palustris* and hemlock water- dropwort *Oenanthe crocat.*

4.58 After crossing the Berthin Brook into further Marshy/Improved Grassland, the route headed towards the disused railway adjacent to a hawthorn *Crataegus monogyna*, elder *Sambucus nigra,* blackthorn *Prunus spinosa* and hazel *Corylus avellana* hedge. Mature sessile oak *Quercus petraea* trees were also found.

4.59 At the bridge, the habitat became Scrub and young Broadleaved Woodland leading both north-west (Western Section of the route – see below) and eastwards. Species found here include scarlet elfcap *Sarcoscypha coccinea*, elder *Sambucus nigra*, harts tongue *Asplenium scolopendrium*, ash *Fraxinus excelsior*, bramble *Rubus fruitcosa*, enchanter's nightshade *Circaea lutetiana*, silver birch *Betula pendula*, alder *Alnus glutinosus* and nettle *Urtica dioica*. This habitat was situated on the banked disused railway line, with ditches occurring sporadically on both sides, and extending into larger woodland pockets. Railway sleepers, gravel and line were present.

4.60 Within this Scrub/Broadleaf Woodland, derelict railway buildings were found.

4.61 Himalayan balsam *Impatiens glandulifera* was observed adjacent to the bridge (southern side) within the field.

Western section (Plan 3)

4.62 This section is described starting from Wern Lane, heading west along the disused railway towards Little Mill.

Faunal observations

Amphibians

4.63 There were several wetter areas including ditches and ponds along this section which provided potential habitat for both breeding and non-breeding amphibians. No amphibians were seen during the survey.

Otter

4.64 The route crosses over a tributary of the Berthin Brook (which heads through Hill Wood to the west). Whilst no otters were seen, the habitat running under the proposed route was suitable to support them.

Dormouse

4.65 The well-connected habitat (Broadleaved Woodland and Scrub) and presence of bramble *Rubus fruticosa* and hazel *Corylus avellana* along this section of proposed route was found to be suitable for dormouse.

Birds

4.66 The dense Scrub and Broadleaved Woodland found along this section provided ample opportunities for nesting birds. Birds showing nesting behaviour included robin *Erithacus rubecula,* dunnock *Prunella modularis* and blackbird *Turdus merula.*

4.67 Other birds noted along this section include redwing *Turdus iliacus*, heron *Ardea cinera*, blackcap *Sylvia atricapilla*, chiffchaff *Phylloscopus collybita*, blue tit *Cyanistes caeruleus*, great tit *Parus major*, song thrush *Turdus philomelos* and wren *Troglodytes troglodytes*.

Badger

4.68 Several well-trodden badger trails were found running along and across the disused railway line, along with several recently used latrines.

4.69 No setts were found, but could exist within adjacent woodland (e.g. Be-Penvane).

Reptiles

4.70 A woodpile of garden cuttings (Target Note 7) was found, which may provide suitable habitat for reptiles.

4.71 Whilst the proposed route had many areas of exposed gravel, few places were found which would provide insolation opportunities due to shading. Suitably exposed gravel was found at the western end of the proposed.

Bats 4.72

derate potential for bats. These included an overhanging willow sp *Salix sp* branch with a rot hole extending into it.

Several older trees were identified as having mo

Floral/habitat observations

4.73 This section of the route exclusively followed the path of the disused railway with the tracks present and obvious for much of the route.

4.74 Young Broadleaved Woodland including ash *Fraxinus excelsior,* willow spp *Salix spp* and silver birch *Betula pendula* were predominant, growing from the banks and tracks. Some butterfly bush *Buddleja davidii* was also apparent.

4.75 An understorey included bramble *Rubus fruticosa,* ground elder *Aegopodium podagraria*, nettle *Urtica dioica*, cleavers *Galium aparine* and lesser celandine *Ranunculus ficaria* in shaded areas.

4.76 In more open areas, self-heal *Prunella vulgaris*, dandelion *Taraxacum spp* and barren strawberry *Potentilla sterilis* were found.

4.77 The banks of this section varied in height and steepness to adjacent habitats (including Broadleaved Woodland, Arable, Running Water and Improved Grassland).

4.78 Some areas of standing water, wet woodland and ditches were present formed along the edges of the banking of the track/pipeline.

5.0 INTERPRETATION AND ASSESSMENT

5.1 The *Development* will require some displacement of many of the habitats present and disturbance to their associated features. This section concerns the assessment of ecological effects resulting from the *Development.*

5.2 The ecological value of the *Site* is variable from medium to high. The recommendations below are provided to ensure full compliance with both legislation and policy as described within this report and relate specifically to bats, common dormouse, nesting birds, water vole, amphibians, otters and reptiles.

5.3 Table 3 describes the potential impacts of the proposed development on the species which are present on the *site.*

Ecological designations

5.4 There are no statutory designations of nature conservation interest on the *Site* itself. There are seven statutory designations of nature conservation within a 5km diameter. These include five SSSIs, one SACs and one National Park (see Table 1 for further details).

5.5 There are four non-statutory designations (SINCs) of nature conservation interest within 500m of the *Site*.

5.6 The statutory 'off-site' designations mentioned above (and in Table 1.) are sufficiently well separated from the *Site* that no direct or indirect impacts on its designated features are anticipated as a result of the *Development*.

Potential impacts

5.7 The proposed route follows an existing line of railway and was relatively recently disturbed through works on a gas pipeline (which also follows the line of the disused railway). This has resulted in mainly young trees and scrub growth being present at this time.

5.8 The route is likely to impact upon several species found according to Table 3 below, and described as follows.

Table 3. Summary of impacts of development

Species	Impacted by *Development*?	How	Further survey required?	Opportunities for enhancement
Bats	Yes	Removal of potential roosts within trees, in-filling of crevices on bridges	Yes	Pill Box - restoration/ integration of bat-friendly crevices/ceiling, installation of bat boxes
Dormouse	Yes	Scrub clearance, removal of hedgerows	Yes	Supplementary diverse planting to enhance connectivity and food availability
Great crested newt	No	Disturbance, removal of habitat	No	Pond creation and suitable planting in non-shaded areas

Otter	Yes	Lighting, disturbance	Yes - Pre-works check around crossing points	Areas near to water crossing points left to Scrub to provide screening to disturbance
Water vole	Yes	Lighting,	Yes - Pre-works	Areas near to water crossing

Species	Impacted by *Development*?	How	Further survey required?	Opportunities for enhancement
		disturbance	check around crossing points	points left to Scrub to provide screening to disturbance
Birds	Yes	Nest destruction	Possibly (dependent on time of year of works)	Retain scrub areas and install nest boxes for a variety of species
Fish	Yes	Lighting	No	No lighting of route near to running water
Invertebrates	No	-	No	Planting of native species to encourage diverse invert species presence
Common amphibians – frog, toad, common and smooth newt	Yes	Disturbance, removal of habitat	No	Retain ditches and standing water
Badger	Yes	Disturbance, removal of habitat	Yes	Plant buffer zone around setts and maintain scrub and woodland areas for shelter
Plants	Yes	Removal	No	Replacement or planting scheme of native species
Reptiles	Yes	Disturbance, removal of habitat	Yes - in locations around Target Notes	Increase insolation opportunities and install "habitat piles" for refugia
Fungi	No	-	No	Retain some dead wood for fungi to grow on

Nesting birds

5.9 The on-site trees and scrub provide habitat for breeding birds, with several birds showing nesting behaviours including some confirmed nests.

5.10 The clearance of vegetation will result in the disturbance of a number of birds' nests, if undertaken during the nesting season. Vegetation clearance work should not be undertaken during the nesting season (March-August). If any clearance must be carried out at this time, a breeding bird survey would be required to confirm absence of breeding and must be carried out by a suitably qualified person. As a general rule, it should be assumed that birds will be nesting on/in trees and scrub habitats during the core nesting period, unless a survey had shown this not to be the case. Any active nests identified should be protected until the young have fledged. Where a Schedule 1 species (as defined in the Wildlife and Countryside Act - http://www.jncc.gov.uk/page-3614) is involved, mitigation for impacts, e.g., loss of nesting sites, should be devised and implemented.

Reptiles

5.11 Whilst the majority of the site is shaded and does not provide optimal reptile habitat, the areas at Target Notes (7 and 19) do provide potential habitat for reptiles to bask and shelter.

5.12 With suitable habitat present and the record of adder *Vipera berus* found within 1km of the proposed route, the area is considered able to support reptiles.

5.13 There is the potential that common reptile species (adders, slow worms, grass snakes and common lizards) could be killed or injured during habitat clearance works. The areas target noted have

moderate potential for reptiles and therefore, a presence or likely absence survey for reptiles will be required at these locations if these habitats are to be removed. If reptiles are confirmed to be present then they must be removed from areas of development and relocated onto suitable release sites before any site works can commence.

Bats

5.14 The scrub and trees along the route provide well-connected links to the wider environment and foraging opportunities for a variety of bat species. Biodiversity records of nine bat species were returned in proximity to the proposed route, including brown long-eared *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe *Rhinolophus hipposideros*, natterer's *Myotis natteri*, noctule *Nyctalus noctula*, serotine *Eptesicus serotinus* and soprano pipistrelle *Pipistrellus pygmaeus*.

5.15 The two pill boxes present on the proposed route (within the central section), could provide roosting opportunities for bats. Although a single bat dropping was found on the sill of the most easterly box the structures have a low roosting potential, with few crevices for bats to use, and the corrugated tin roof would not be optimal to hang from. Enhancement of these structures for bats would be beneficial and could be achieved by creating crevices or installing bat boxes within them.

5.16 There is a risk that potential bat roosts could be damaged or destroyed within the bridges (crevices between stones) and trees (cavities and voids within trunks and branches) along the route. If any works to bridges such as strengthening or filling of crevices are required, or if any trees require felling, pruning or other maintenance, then further surveys to establish if bats are roosting within them should be carried out.

5.17 There is a risk that bats could be disturbed following completion of the route. Continuous habitat (e.g. tree canopy cover and intern-linking hedgerows) should be maintained to ensure that commuting and foraging routes are not lost. Several of the bat species known to roost locally will not forage or use an area that is artificially lit. It will be necessary to produce a lighting plan if any site lighting is proposed for both the construction phase and for the finished *Development* in order to demonstrate minimal disturbance to bats. If no site lighting is planned then confirmation of this must be provided.

European otter

5.18 There was evidence of otter (spraint and footprints) under a bridge (Wern Lane crossing Berthin Brook) and a number of biodiversity records for this species using the waterways around the proposed route, with several records of otter deaths on the nearby A472.

5.19 The only point at which the proposed route will directly impact upon optimal otter habitat is adjacent to the Wern Lane road bridge and where Scrub is to be removed near to running water. There are no other locations at which the proposed route will cross waterways other than by existing bridges.

5.20 There is a risk that otters will be disturbed by the works, and that potential protected habitat may be damaged or destroyed. Wherever possible scrub and cover should be maintained

around these existing structures to reduce the likelihood of any disturbance to otter. No works should be undertaken at night, and there must be no illumination of waterways either during or following construction.

5.21 If works are required around the new bridge near Wern Lane, then a pre-commencement survey for European otter (in particular for holts) will be required, to inform the site works to minimise any disturbance to otters. If required an otter mitigation/protection plan should be produced in order to demonstrate minimal disturbance to the normal behaviour and movements of otter.

Common dormouse

5.22 The scrub habitat and trees along the proposed are suitable for the common dormouse with a range of species present in turn providing a range of food sources. It also links well with the wider environment. Areas of dense scrub and bramble provide good summer nesting habitat, a good food resource, and may provide hibernation sites.

5.23 There is a risk that the works will result in the damage or destruction of dormouse habitat. A presence/absence survey for dormice will be required in the areas around where hedges are to be bisected, and where any scrub is to be cleared. This must be carried out between April and October.

Amphibians

5.24 There is suitable habitat for breeding amphibians (i.e. standing water with some vegetation cover) and non-breeding amphibians (e.g. damp woodland, shaded areas) along the proposed route. This, along with records of amphibians (great crested newt *Triturus cristatus* – 507m away; common toad *Bufo bufo* – 119m away; common frog *Rana temporalis* -169m away) in the vicinity, suggest that at least some sections of the proposed route are able to support several species of amphibian throughout their lifecycles.

5.25 There is a risk that the works will result in the damage or destruction of protected amphibian habitat. If any of the ditches or bodies of standing water are to be filled in, then a great crested newt presence/absence survey will be required at these places. This must be undertaken between mid- March and mid-June with at least two surveys between mid-April and mid-May and follow current survey guidelines. Should any great crested newts be present then a European Protected Species licence may be required.

Badger

5.26 There is considerable evidence of badger use of the *Site* on or within the bank of the proposed route.

5.27 Whilst some trails found along the route may have been used by other mammals (i.e. fox), there are considerable numbers of trails which have evidence of badger usage along them (snuffle holes, hairs, setts, latrines).

5.28 Works around the badger sett at target note 20 may result in the damage or destruction of the sett, or other interference with it. The presence of a badger sett at Target Note 20 may require a development licence to be obtained prior to works commencing, given that works are likely to require heavy machinery to be operational within 30m of the sett.

5.29 Further survey effort will be required to determine the number of badgers, setts, and type of

sett likely to be affected by the *Development* and either a Natural Resources Wales development licence applied for exclusion/disturbance, or a mitigation strategy document written that will ensure the protection of badger during the *Development*.

Water vole

5.30 Running water with suitable vegetation adjacent to the proposed route (at several places where Berthin Brook crosses/is crossed or approaches the route) may support populations of European water vole. Biodiversity records showed a recent record of European water vole at 308m from the proposed route in 2009, crossing a road near the Berthin Brook.

5.31 There is a risk that water vole could be disturbed during the construction phase, and that suitable habitat may be damaged or destroyed.

5.32 In common with otter protection, no works should be undertaken at night, and no lighting should illuminate waterways either during construction or afterwards.

5.33 A survey for water vole will be required prior to works commencing around the new bridge near Wern Lane (if this is the preferred option). This would be to minimise any disturbance to water vole.

5.34 A water vole mitigation/protection plan should be produced in order to demonstrate minimal disturbance to the normal behaviour and movements of water voles.

Fis
h

5.35 Records of priority and protected fish species were returned in the vicinity of the proposed route. These are European eel *Anguilla anguilla* and Shad sp *Alosa sp* which were found recently within 300m of the proposed route.

No alterations of water courses are to be carried out as part of the *Development*.

As with water vole and otter, there should be no lighting of water courses during the course of the

5.36 *Development* and afterwards.

No further fish surveys are required.

5.37

5.38

Invertebrates

5.39 Priority and protected invertebrate records found include freshwater crayfish *Austropotamobius pallipes*, speckled bush-cricket *Leptophyes punctatissima*, short-winged cone-head *Conocephalus dorsalis* and scarlet malachite beetle *Malachius aeneus*. The latter three were on and within 20m of the proposed route, and the crayfish within 156m.

5.40 The freshwater crayfish requires clean, slow-running water; the speckled bush cricket requires open woodland and scrub; the short-winged cone-head requires reedbeds and river floodplains; and the scarlet malachite beetle requires overgrown hedgerows and meadows.

5.41 The *Development* of the proposed route will not alter the flow or quality of the water, or any reedbeds or floodplains, and so there are likely to be negligible impacts upon freshwater crayfish and short-winged cone-head.

5.42 Removal of woodland and scrub may impact upon the speckled bush-cricket and similarly the scarlet malachite beetle with hedge removal. These would be low risk however, as retained and adjacent habitats will provide adequate refuge and resources for these species.

5.43 No further invertebrate surveys are necessary.

Invasive species

5.44 The presence of invasive species (Himalayan balsam, Japanese knotweed and giant hogweed) at several locations along the site will require management to prevent their spread.

5.45 Measures should be undertaken during the routes construction in order to prevent the spread of any invasive species, and specialist advice sought on the removal and destruction of Japanese knotweed (as hazardous waste). The Knotweed Code of Practice (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296930/LIT_2695

_df1209.pdf) suggests several methods for removal and management.

Assessment of impact by alternative development scenario

5.46 Table 4 below outlines the three different proposed types of route.

Table 4. Development scenarios for the proposed route

Scenario	Users	Route width
1	Able bodied people	1m tarmac
2	Walkers and cyclists	4.5m (2.5m tarmac with 1m verges either side)
3	Walkers, cyclists and horse riders	7m (2.5m tarmac with 1m and 3.5m verges)

5.47 All the above scenarios will cause the displacement of some of the habitats present, with likely disturbance of a proportion of the species listed in Table 3.

5.48 The narrower band of tarmac in Scenario 1 will cause the most minimal impact, however during construction, there is likely to be impacts on a wider area than the 1m width. Scenario 2 will require the displacement of 4.5m habitat and Scenario 3 will require 7m displacement of habitat.

5.49 All three scenarios are likely to cause impact to reptiles and amphibians due to the removal of gravel and railway sleepers, and the routes proximity to ditches, suitable refugia and insolation opportunities.

5.50 All three scenarios are likely to cause impact to common dormouse and nesting birds due to the removal of scrub and young woodland along the route.

5.51 In some areas of the route, it may not be feasible to maintain a 7m width route without widening the available level area, given the presence of bridges and steep banks, therefore potentially impacting upon otter, water vole, and other species utilising the river and brook.

5.52 Scenario 2 and 3 will require the removal of a larger area of scrub and trees to accommodate the verges. This is likely to have a larger impact upon any common dormouse, bats and nesting birds than the un-verged scenario 1.

5.53 Bats are likely to be impacted upon if the pill boxes are made more accessible to people.

5.54 The routes may also impact upon badgers whilst in use and during construction, due to the increased level of activity along and near to the bank/ path edges. Therefore the wider routes (or where any route passes close to a sett) are likely to impact on badgers the most.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 We surveyed the proposed multi-user route and found use and potential for use by bats, badger, otter, breeding birds, water vole, reptiles and dormouse. As such we recommend that further surveys are carried out prior to works commencing.

6.2 The following refers to the locations highlighted in the previous sections and in Appendix I.

- **Bats** - if any bridges are to be altered or to have any crevices filled, further surveys to establish if bats are roosting within them should be carried out. If any tree with hole extending into the tree/branch (e.g woodpecker hole or rot pocket) is to be felled, further survey to determine if bats are present will be required. Continuous habitat should be maintained to ensure that commuting and foraging routes are not lost.
- **Dormouse** - a nest tube survey for dormice will be required in the areas around where hedges are to be bisected, and where any scrub is to be cleared. This must be carried out between April to October
- **Badger** - further survey effort will be required to determine the number of badgers, setts and type of sett likely to be affected by the *Development*.
- **Reptiles** – presence/absence surveys for reptiles will be required at the Target Noted locations, if these habitats are to be removed.
- **Water vole and otter** - no further surveys for these species are required, but pre-works checks around the area of work (i.e. where the proposed route is directly adjacent to and crosses water) should be carried out, and a mitigation/protection plan produced.
- **Breeding birds** - works should not be carried out during the breeding season (March to August) in order to prevent disturbing breeding birds or destroying nests. If clearance is required during the breeding season then a breeding bird survey must be carried out.

6.3 A lighting plan should be produced if any site lighting is planned for both the construction phase and for the finished *Development* in order to demonstrate minimal disturbance to bats, otter, water vole and fish. If no site lighting is planned then confirmation of this must be provided.

6.4 The presence of invasive species (Himalayan balsam, Japanese knotweed and giant hogweed) at several locations along the site will require management to prevent their spread. It is recommended that measures are undertaken during the routes construction in order to prevent the spread of any invasive species, and specialist advice sought on the removal and destruction of Japanese knotweed (as hazardous waste). The Knotweed Code of Practice (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296930/LIT_2695

_df1209.pdf) suggests several methods for removal and management.

6.5 The three proposed route scenarios all propose some level of habitat displacement, with the wider scenario likely to cause the most impact on nesting birds, badgers, common dormouse and bats through the removal of scrub and activity along the banks.

7.0 REFERENCES

Institute for Environmental Assessment. (1995). Guidelines for Baseline Ecological Assessment. E & FN Spon, Hong Kong.

Institute of Ecology and Environmental Management (2012) Guidelines for Preliminary Ecological Appraisal.

IEEM, Winchester.

Joint Nature Conservation Committee (2010). Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit. Reprinted by JNCC, Peterborough.

APPENDIX I: SITE PLAN

Site plans appended as GIS layer.

APPENDIX II: TARGET NOTES

Number	Note
1	Signs of otter noted (e.g. spraint, footprints, slides)
2	Birds' nests
3	Signs of badger (trails)
4	Potential bat feature (pill box with dropping, crevices in mortar, holes in trees)
5	Japanese Knotweed
6	Giant Hogweed
7	Potential reptile habitat (refugia and insolation points)
8	Nest boxes
9	Bird hide
10	Ditch suitable for amphibian use
11	Running water
12	Habitat suitable for dormouse
13	Habitat suitable for water vole
14	Fox
15	Badger latrine
16	Himalayan Balsam
17	Asbestos
18	Marshy area suitable for amphibians
19	Exposed stone gravel suitable for reptiles
20	Badger sett

APPENDIX III: SURVEY IMAGES

Section 1

Figure 2. Pill box on the southern aspect of the proposed route (western trackway)

Figure 3. Typical bird box found in the larger trees near to the college farm buildings

Figure 4. Pile of debris which may provide opportunities for nesting birds and reptiles

Figure 5. Woodpile adjacent to the farm buildings providing nesting opportunities and refugia for reptiles and amphibians

Figure 6. Ditch near to the farm buildings

Figure 7. Bridge north of the college farm buildings, note some bat roost potential

Figure 8. Badger sett entrance, facing south

Figure 9. Bridge over Berthin Brook, with some bat features and likely use by otters

Figure 10. View along northern edge of plantation, within improved horse grazed field

Figure 11. View into wet woodland from the equestrian centre side

Figure 12. At Usk Island, at the top of the ramp, looking into scrub and broadleafed woodland. Some saplings in the foreground had been planted by a local Guiding group.

Figure 13. View under the bridge (crossing the River Usk), showing some crevices with bat potential

Figure 14. View looking back towards Usk Island, along the river, with the arable field on the right

Figure 15. Roofing tiles near the college may provide reptiles with insolation opportunities and refugia

Figure 16. West of Usk Island, scrub and broadleafed woodland. Note gas pipeline notice.

Figure 17. Pill box facing northwards, which contained a single bat dropping and badger latrine (see figure 18)

Figure 18. Badger latrine within pill box - diet likely to be mainly earthworms

Section 2

Figure 19. Japanese knotweed within hedgerow near entrance to the lane leading to Coed Cox

Figure 20. Hedge opposite the knotweed (Fig. 19)

Figure 21. Amenity grassland infront of residential properties north of the BAE Systems Glascoed Works

Figure 22. Scrub and habitat suitable for reptiles in front of gate leading onto Wern Lane

Figure 23. Badger track through hedgerow (hairs found)

Figure 24. Pathway running from Wern Lane southwards. Crossed by badger tracks.

Figure 25. Wet woodland/ meadow near to Berthin Brook at Wern Lane

Figure 26. Otter footprint with possible water vole/rat under the Wern Lane bridge over Berthin Brook

Figure 27. Otter spraint found close to footprints in Fig. 26

Figure 28. Derelict building on the proposed route running east-west, near the BAE Systems Works

Figure 29. Berthin Brook running north of the proposed route, just west of the BAE Systems Works

Figure 30. Banks along this section of Berthin brook may provide suitable water vole habitat

Section 3

Figure 31. Bridge at start of Section 3, looking east

Figure 32. Well-used trail through scrub

Figure 33. Wetter areas with standing water are frequently encountered along this section, particularly to the western side of the proposed route

Figure 34. Bridge with arched brick roof - some bat potential within stonework

Figure 35. Fallen tree with some bat potential and surrounding habitat suitable for nesting birds and dormice

Figure 36. Woodpile of burnt garden cuttings, possible use by reptiles and non-breeding amphibians

Figure 37. Open area of proposed route, with old railway tracks clearly visible to the right, with birch growing through

Figure 38. Debris at the western end of the route, providing suitable habitat for reptile refuge

APPENDIX IV: SPECIES LIST

To be submitted to the appropriate Local Records Centre

Site Name:	Little Mill to Usk – Route Feasibility	Provided by:	Wildwood Ecology
Grid ref:	SO30	Verified by:	Alex Pollard

Common Name	Scientific Name	Section found
	Flora	
Hawthorn	*Crataegus monogyna*	1, 2, 3
Alder	*Alnus glutinosa*	Associated with wet woodland in 1 and 2
Apple	*Malus sp.*	2
Ash	*Fraxinus excelsior*	1, 2, 3
Barren Strawberry	*Potentilla sterilis*	1, 2, 3
Beech	*Fagus sylvatica*	1, 2, 3
Blackthorn	*Prunus spinosa*	1, 2, 3
Bluebell	*Hyacinthoides non-scripta*	1, 2, 3
Box	*Buxus sempervirens*	2
Bracken	*Pteridium aquilinum*	1, 2
Bramble	*Rubus fruticosus*	1, 2, 3
Butterbur	*Petasites hybridus*	1
Butterfly Bush	*Buddleja sp.*	1, 2, 3
Chives	*Allium schoenoprasum*	2
Cinquefoil	*Potentilla reptans*	1, 2, 3
Cleavers	*Galium aparine*	1, 2, 3
Clover	*Trifolium sp*	1, 2, 3
Conifer	*Coniferae sp*	1, 2
Cow Parsley	*Anthriscus sylvestris*	1, 2, 3
Cranesbill	*Geranium sp.*	1, 2, 3
Creeping Buttercup	*Ranunculus repens*	1, 2, 3
Cuckoo-flower	*Cardamine pratensis*	1, 2, 3
Daffodil	*Narcissus pseudonarcissus*	1, 2, 3
Daisy	*Bellis perennis*	1, 2, 3
Dock	*Rumex sp.*	1, 2, 3
Dog Rose	*Rosa canina*	2, 3
Elder	*Sambucus nigra*	1, 2, 3
Enchanter's Nightshade	*Circaea lutetiana*	1, 2, 3
Forget-me-not	*Myosotis sp*	1, 2, 3
Forsythia sp	*Forsythia sp*	2
Foxglove	*Digitalis purpurea*	1, 2
Garlic Mustard	*Alliaria petiolata*	1, 2, 3
Goat Willow	*Salix caprea*	1, 2, 3
Greater Stitchwort	*Stellaria holostea*	2
Ground Elder	*Aegopodium podagraria*	1, 2, 3
Ground Ivy	*Glechoma hederacea*	1, 2, 3
Groundsel	*Senecio vulgaris*	1, 2, 3
Hart's Tongue	*Phyllitis scolopendrium*	2, 3
Hazel	*Corylus avellana*	1, 2, 3
Hemlock Water-dropwort	*Oenanthe crocata*	2
Herb Robert	*Geranium robertianum*	1, 2, 3
Himalayan Balsam	*Impatiens glandulifera*	2
Hogweed	*Heracleum sphondylium*	1, 2, 3
Holly	*Ilex aquifolium*	1, 2
Honeysuckle	*Lonicera periclymenum*	1, 2
Iris	*Iris sp.*	1
Ivy	*Hedera helix*	1, 2, 3
Japanese Knotweed	*Fallopia japonica*	1, 2
Jelly-ear Fungus	*Auricularia auricula-judae*	3
King Alfred's Cake	*Daldinia concentrica*	3
Lesser celandine	*Ranunculus ficaria*	1, 2, 3

Lords and Ladies	*Arum maculatum*	1, 2, 3
Marsh Marigold	*Caltha palustris*	1, 2
Meadow Buttercup	*Ranunculus acris*	1, 2, 3
Meadowsweet	*Filipendula ulmaria*	2
Mole	*Talpa europaeus*	1, 3
Narrow leaved Bittercress	*Cardamine impatiens*	1
Pedunculate Oak	*Quercus robur*	1, 2, 3
Perennial Rye Grass	*Lolium perenne*	1, 2, 3
Primrose	*Primula vulgaris*	1, 2, 3
Prunus	*Prunus sp*	1, 2, 3
Red Dead-nettle	*Lamium purpureum*	2
Ribwort Plantain	*Plantago lanceolata*	1, 2, 3
Rush	*Juncus sp.*	1
Scarlet Elf Cup	*Sarcoscypha coccinea*	2, 3
Selfheal	*Prunella vulgaris*	1, 2
Sessile Oak	*Quercus petraea*	2
Sheep's Sorrel	*Rumex acetosella*	1, 2, 3
Silver Birch	*Betula pendula*	1, 2, 3
Silverweed	*Potentilla anserina*	1, 2, 3
Soft rush	*Juncus effusus*	2
Speedwell	*Veronica sp.*	1
Sphagnum sp	*Sphagnum spp*	1, 2, 3
Spurge	*Euphorbia spp.*	3
Stinging Nettle	*Urtica dioica*	1, 2, 3
Sycamore	*Acer pseudoplatanus*	1, 2, 3
Teasel	*Dipsacus sp.*	1, 2, 3
Thistle	*Cirsium sp.*	1, 2, 3
Umbellifer sp	*Umbelliferae spp*	1, 2, 3
Vetch	*Vicia sp.*	1, 2, 3
Violet	*Viola sp.*	1, 2, 3
Weeping Willow	*Salix alba x babylonica*	1
White Willow	*Salix alba*	1
Willow sp	*Salix spp*	1, 2, 3
Willowherb sp	*Epilobium sp*	1, 2, 3
Wood Avens	*Geum urbanum*	1, 2, 3
Yarrow	*Achillea millefolium*	3
Yellow Archangel	*Lamiastrum galeobdolon*	2, 3
Yew	*Taxus baccata*	2
Yorkshire Fog	*Holcus lanatus*	1, 2, 3
	Fauna	
7-spot	*Coccinella septempunctata*	2
American Mink	*Neovison vison*	2
Badger	*Meles meles*	1, 2, 3
Bat	*Chiroptera*	1
Blackbird	*Turdus merula*	1, 2, 3
Blackcap	*Sylvia atricapilla*	1, 2, 3
Blue Tit	*Cyanistes caeruleus*	1, 2, 3
Bullfinch	*Pyrrhula pyrrhula*	1
Bumblebee sp	*Bombus spp*	1, 2, 3
Buzzard	*Buteo buteo*	1, 2, 3
Carrion Crow	*Corvus corone*	1, 2, 3
Chaffinch	*Fringilla coelebs*	1, 2, 3
Chiffchaff	*Phylloscopus collybita*	1, 2, 3
Common shrew	*Sorex araneus*	1
Dipper	*Cinclus cinclus*	1
Dunnock	*Prunella modularis*	1, 2, 3
Fox	*Vulpes vulpes*	2
Goldcrest	*Regulus regulus*	1
Goldfinch	*Carduelis carduelis*	1, 2, 3
Goosander	*Mergus merganser*	1
Great Spotted Woodpecker	*Dendrocopos major*	1

Great Tit	*Parus major*	1, 2, 3
Grey Heron	*Ardea cinerea*	3
Grey Squirrel	*Sciurus carolinensis*	1, 2, 3
House Sparrow	*Passer domesticus*	1
Hoverfly	*Syrphidae sp*	1
Long-tailed Tit	*Aegithalos caudatus*	1, 2, 3
Magpie	*Pica pica*	1, 2, 3
Mallard	*Anas platyrhynchos*	1, 3
Meadow Pipit	*Anthus pratensis*	1
Mute Swan	*Cygnus olor*	1
Otter	*Lutra lutra*	1, 2, 3
Pheasant	*Phasianus colchicus*	1, 2, 3
Pied Wagtail	*Motacilla alba*	1
Pond Skater	*Gerridae sp*	2
Rabbit	*Oryctolagus cuniculus*	3
Redwing	*Turdus iliacus*	3
Robin	*Erithacus rubecula*	1, 2, 3
Song Thrush	*Turdus philomelos*	1, 2, 3
Sparrowhawk	*Accipiter nisus*	3
Starling	*Sturnus vulgaris*	1
White-tailed Bumblebee	*Bombus lucorum*	3
Woodpigeon	*Columba palumbus*	1, 2, 3
Wren	*Troglodytes troglodytes*	1, 2, 3

Appendix 2 – Great Crested Newt Report – DCE 2017

See separate report

Appendix 3 – Additional Survey Work Report – DCE 2017

See separate report

Appendix 4 – River Usk / Afon Wysg SAC Citation -

Appendix 5- Wildlife Protection Plan – Wildwood Ecology

Wildwood Ecology Ltd

SUSTRANS

LITTLE MILL TO USK PROPOSED CYCLE

ROUTE WILDLIFE PROTECTION PLAN

GUIDANCE DOCUMENT

30 MARCH 2015

ISSUING OFFICE
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Client:	Sustrans
Site/Job:	Little Mill to Usk Proposed Cycle Route
Report title:	Wildlife Protection Plan Guidance Document
Report reference:	WWE140301WPP

Grid Reference:	SO30
Date(s) of survey(s):	1st, 2nd, and 4th April 2014
Surveyed by:	Dr Alexandra Pollard BSc (Hons), PhD, MCIEEM Dr Matthew Davies BSc (Hons), PhD, ACIEEM
Architect/Agent:	Gwyn Smith
Planning reference:	n/a

VERSIONING

V	Status	Changes	Author	Position	Date
1	Draft	-	A Pollard	Ecologist	24/03/2015
2	Draft	Minor edits	M Davies	Ecologist	30/03/2015

	Name	Position	Date
Reviewed by:	Richard Dodd	Principal Ecologist	30/03/2015
Approved for issue:			
Issued to client:			

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This document has been prepared by Wildwood Ecology Limited for Sustrans solely as a Wildlife Protection Plan Guidance Document. Wildwood Ecology Limited accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

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

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1.0 INTRODUCTION

1.1 In 2014 Wildwood Ecology Ltd undertook a Preliminary Ecological Appraisal along the proposed cycle route between Little Mill and Usk in order to inform the feasibility of the route for conversion into a permissive multi-user path (the *Development*). The proposed route follows a disused railway line and gas pipeline.

1.2 The surveys found potential use by bats, otter, water vole, reptiles and dormouse and confirmed the presence of badger and breeding birds, recommending further surveys for these species. At the time of making recommendations, substantial vegetation clearance works were proposed.

1.3 Subsequent maintenance work along the gas pipeline has resulted in vegetation clearance, sufficient to allow the construction of the new path with no further vegetation clearance necessary.

1.4 Wildwood Ecology Ltd have been commissioned by the *Client* (Sustrans) to produce a Wildlife Protection Plan for the *Development*, outlining how the works on *Site* will be undertaken with due regard to bats, badger, otter, nesting birds, reptiles, amphibians, dormouse, water vole and invasive species.

1.5 This document is for guidance/advisory purposes only to be used to inform (not support) a potential future planning application for the *Development.*

Site description

1.1 The surrounding landscape is mainly agricultural fields (pasture and arable) with some well-connected pockets of woodland. The towns of Usk and Little Mill can be found to the east and west (respectively) and a large munitions base is situated between the eastern and western portions of the route. Waterbodies, including the River Usk and Llandegfedd Reservoir, are nearby.

1.2 For full site information please refer to existing report “Little Mill to Usk – Route Feasibility – Preliminary Ecological Appraisal – Wildwood Ecology 2014”.

Figure 1. The *Site* (defined by the red lines) running from Little Mill (in the west) to Usk (in the east). Image used under licence (© Google 2014).

2.0 WILDLIFE PROTECTION PLAN

2.1 For locations of species discussed in this section, please refer to Appendix 1, the accompanying target notes and the PEA survey report.

Bats

2.2 The scrub and trees along the route provide well-connected links to the wider environment and foraging opportunities for a variety of bat species. Biodiversity records of nine bat species were returned in proximity to the proposed route. During the PEA undertaken in 2014, a single bat dropping was found within the easternmost pill box.

2.3 As part of maintenance works along the gas pipeline, undertaken by T&M Landscaping on behalf of Wales and West Utilities, trees proposed to be felled with potential to contain a bat roost were subject to further survey (climbed with videoscope under licenced bat ecologist supervision) prior to felling. No roosts were found during these surveys. A single bat box (Schwegler 2F) was installed on a tree.

2.4 No further tree, scrub or vegetation clearance works are to be undertaken by the *Client* and there will be continued habitat connectivity along the route allowing commuting and foraging routes to be retained.

2.5 Lighting of the route and night working will not be permitted. This will minimise any risk of barrier creation whilst bats are foraging or commuting.

Badgers

2.6 There was considerable evidence of badger use of the *Site* on or within the bank of the proposed route during the PEA. This includes latrines, paths, hairs, snuffle holes and a sett.

2.7 All scrub and vegetation will be retained around the sett.

2.8 No obstruction to the sett entrance(s) may be made during the works.

2.9 At the site of the sett, the route will not deviate from the existing pathway. All machinery and equipment will be kept on the path and all contractors will be briefed on the location of the sett. A barrier (permeable to wildlife) will put in place to prevent workers causing any disturbance to badgers and their setts.

Otters

2.10 There was evidence of otter (spraint and footprints) under a bridge (Wern Lane crossing Berthin Brook) and a number of biodiversity records for this species using the waterways around the proposed route, with several records of otter deaths on the nearby A472.

2.11 No vegetation clearance will occur near to running water. This will reduce the risk of disturbance to otter and prevent loss of habitat.

2.12 No works are to be undertaken in the flow of the water or to the banks of the water bodies adjacent to the proposed route.

2.13 No works are to take place at night and, similarly to point 2.6; no artificial illumination of waterways will occur during or post construction.

Nesting birds

2.14 The on-site trees and scrub provide habitat for breeding birds, with several birds showing nesting behaviours including some confirmed nests along the proposed route and nest boxes in some trees near to the college.

2.15 The clearance of scrub, trees and other vegetation is likely to result in the disturbance/destruction of a number of birds' nests, if undertaken during the nesting season and loss of foraging and nesting habitat.

2.16 No vegetation clearance will occur, therefore maintaining existing habitat.

2.17 Works will be timed to take place outside of the breeding season to ensure that any birds nesting directly adjacent to the proposed route are not disturbed. This is because it is not possible to establish sufficient buffer zones to prevent disturbance.

Reptiles

2.18 Whilst the majority of the site is shaded and does not provide optimal reptile habitat, there are some areas where the habitat is more open with some insolation opportunities.

2.19 No habitat is to be cleared removing the risk of injury or death to reptiles.

2.20 Works will be undertaken whilst reptiles are active, to minimise the risk of construction works killing or injuring hibernating animals.

Amphibians

2.21 There is suitable habitat for breeding amphibians (i.e. standing water with some vegetation cover) and non-breeding amphibians (e.g. damp woodland, shaded areas) along the proposed route. There is a risk that the works will result in the damage or destruction of protected amphibian habitat.

2.22 All ditches and standing water bodies are to be retained and left undisturbed.

2.23 No habitat is to be cleared removing the risk of injury or death to amphibians.

2.24 Works will be undertaken whilst amphibians are active, to minimise the risk of construction works killing or injuring hibernating animals.

Common Dormouse

2.25 The scrub habitat and trees along the proposed are suitable for the common dormouse with a range of species present in turn providing a range of food sources. It also links well with the wider environment. Areas of dense scrub and bramble provide good summer nesting habitat, a good food resource, and may provide hibernation sites.

2.26 No clearance of any scrub or vegetation will be undertaken minimising the risk of the works affecting common dormouse.

2.27 Works will be undertaken whilst common dormouse are active, to minimise the risk of construction works killing or injuring hibernating animals.

Water vole

2.28 Running water with suitable vegetation adjacent to the proposed route (at several places where Berthin Brook crosses/is crossed or approaches the route) may support populations of European water vole. Biodiversity records showed a recent record of European water vole at 308m from the proposed route in 2009, crossing a road near the Berthin Brook. As such, there is a risk that water vole could be disturbed during the construction phase, and that suitable habitat may be damaged or destroyed.

2.29 In common with otter protection outlined in 2.12-2.14, no works will be undertaken at night, in the flow of water and no lighting will illuminate waterways either during construction or afterwards.

Invasive species

2.30 The presence of invasive species (Himalayan balsam, Japanese knotweed and giant hogweed) at several locations along the proposed route will require management to prevent their spread in the longer term.

2.31 Measures will be undertaken during the routes construction in order to prevent the spread of any invasive species.

2.32 Contractors will be made aware of these species and their management, and no cut or treatment of these will occur without seeking advice from the retained ecologist in order to prevent any impacts on protected species.

General

2.33 All machinery and equipment will be stowed safely to prevent injury of any animal.

2.34 No trenches, pits or holes will be left either uncovered or without the means of escape of any animal that may fall into them.

3.0 TIMING OF WORKS

3.1 Works will be timed to minimise the risk of impact on protected species. Table 1 outlines the optimal and sub-optimal times for work to proceed.

3.2 NB as previously mentioned, this report is to be used for guidance purposes only and not for use in support of a planning application (a more detailed and definitive plan – including an Ecological Constraints and Opportunities Plan – will be necessary for this purpose).

3.3 The optimal time to carry out the works will be in September and October – after the bird breeding season and before temperatures drop sufficiently for animals (namely amphibians, reptiles and common dormouse) to begin hibernation.

3.4 If there is a frost at any time during works, the advice of the retained ecologist will be sought.

3.5 It is possible that some species are present in location other than in those identified during the surveys in 2014. If any protected species or evidence of protected species is found during the works, then works will cease and the advice sought from the retained ecologist prior to proceeding.

Table 1. Optimal timing of works to minimise impacts on protected species – Red: High risk of impacts; Pale yellow: Medium risk of impact without working method statement in place; Green: Low risk of impact. The bright yellow (September and October) columns indicate the best time to undertake the works with minimal risk to protected species as long as this Wildlife Protection Plan is followed at all times.

Protected species	J	F	M	A	M	J	J	A	S	O	N	D
Bats												
Nesting Birds												
Badger												
Otter												
Reptiles												
Amphibians												
Common Dormouse												
Water Vole												

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APPENDIX I: SITE PLAN

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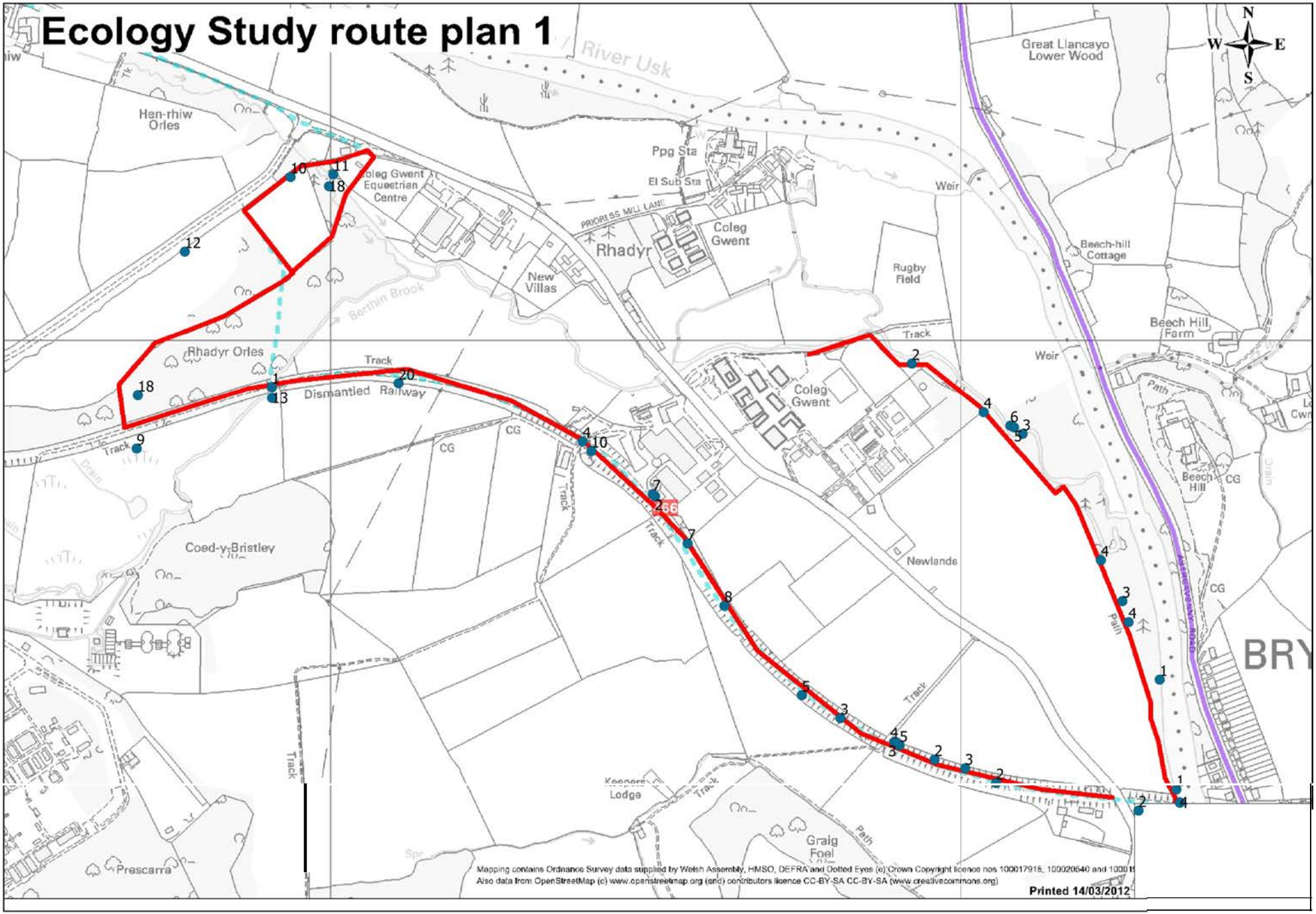
Ecology Study route plan 1
N
W
E
S
River Usk
Great Llancayo Lower Wood
Hen-rhiw Orles
Ppg Sta
El Sub Sta
Weir
Coleg Gwent Equestrian Centre
PRIORESS MILL LANE
Rhadyr
Coleg Gwent
Beech-hill Cottage
New Villas
Rugby Field
Berthin Brook
Beech Hill Farm
Rhadyr Orles
Track
Dismantled Railway
Coleg Gwent
Path
Beech Hill
CG
Coed-y-Bristley
Newlands
Track
Keepers Lodge
Graig Foel
Prescarra
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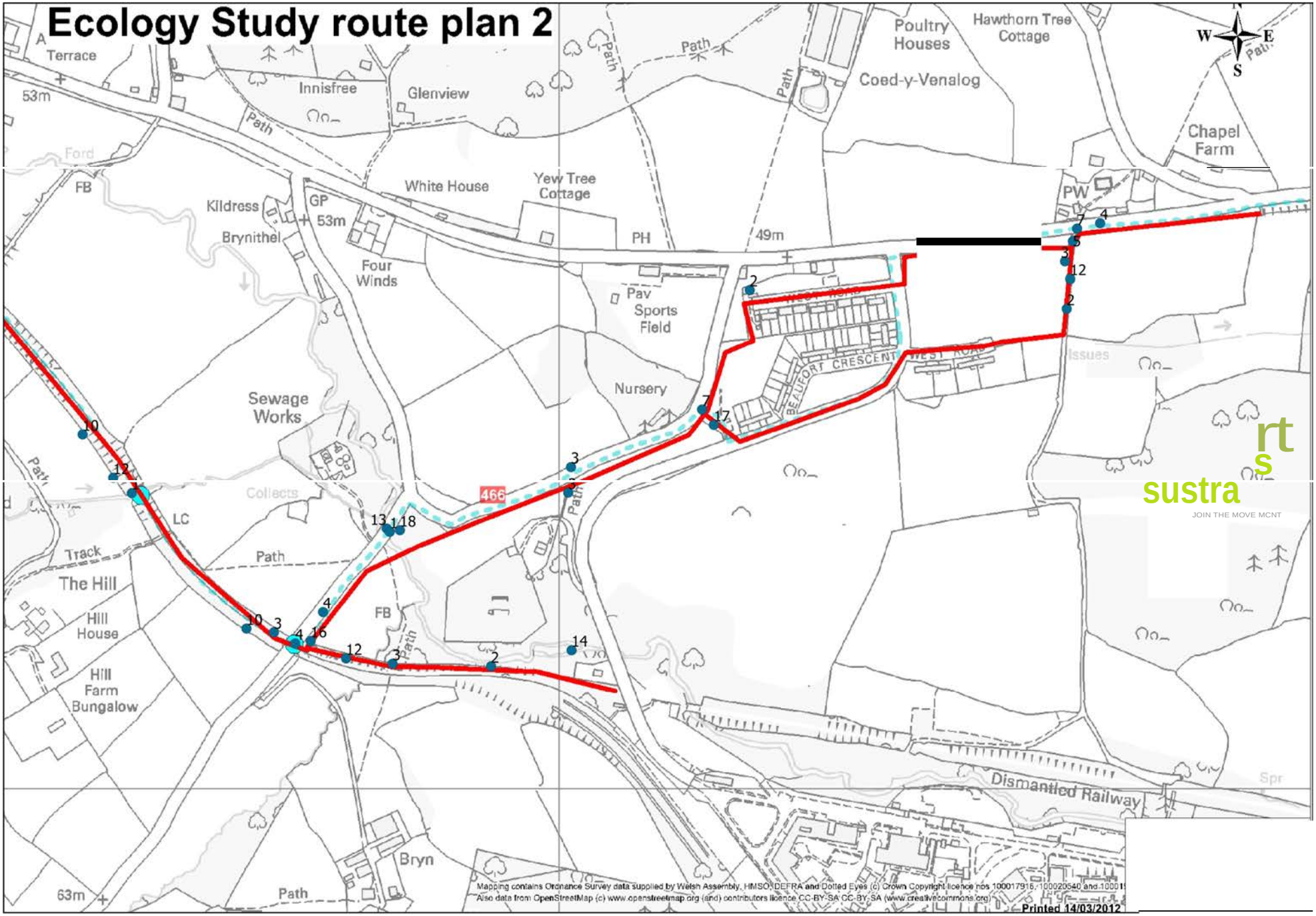
Ecology Study route plan 2
Terrace
53m
Innisfree
Glenview
Path
Ford
FB
Kildress
Brynithel
GP
53m
White House
Yew Tree Cottage
PH
49m
Four Winds
Pav
Sports Field
Poultry Houses
Hawthorn Tree Cottage
Coed-y-Venalog
Chapel Farm
PW
BEAUFORT CRESCENT
WEST ROAD
Issues
Nursery
Sewage Works
Collects
LC
Track
Path
The Hill
Hill House
Hill Farm Bungalow
466
FB
Bryn
63m
Dismantled Railway
Spr
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Also data from OpenStreetMap (c) www.openstreetmap.org (and) contributors licence CC-BY-SA CC-BY-SA (www.creativecommons.org)
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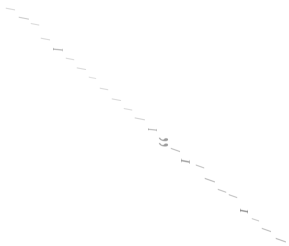

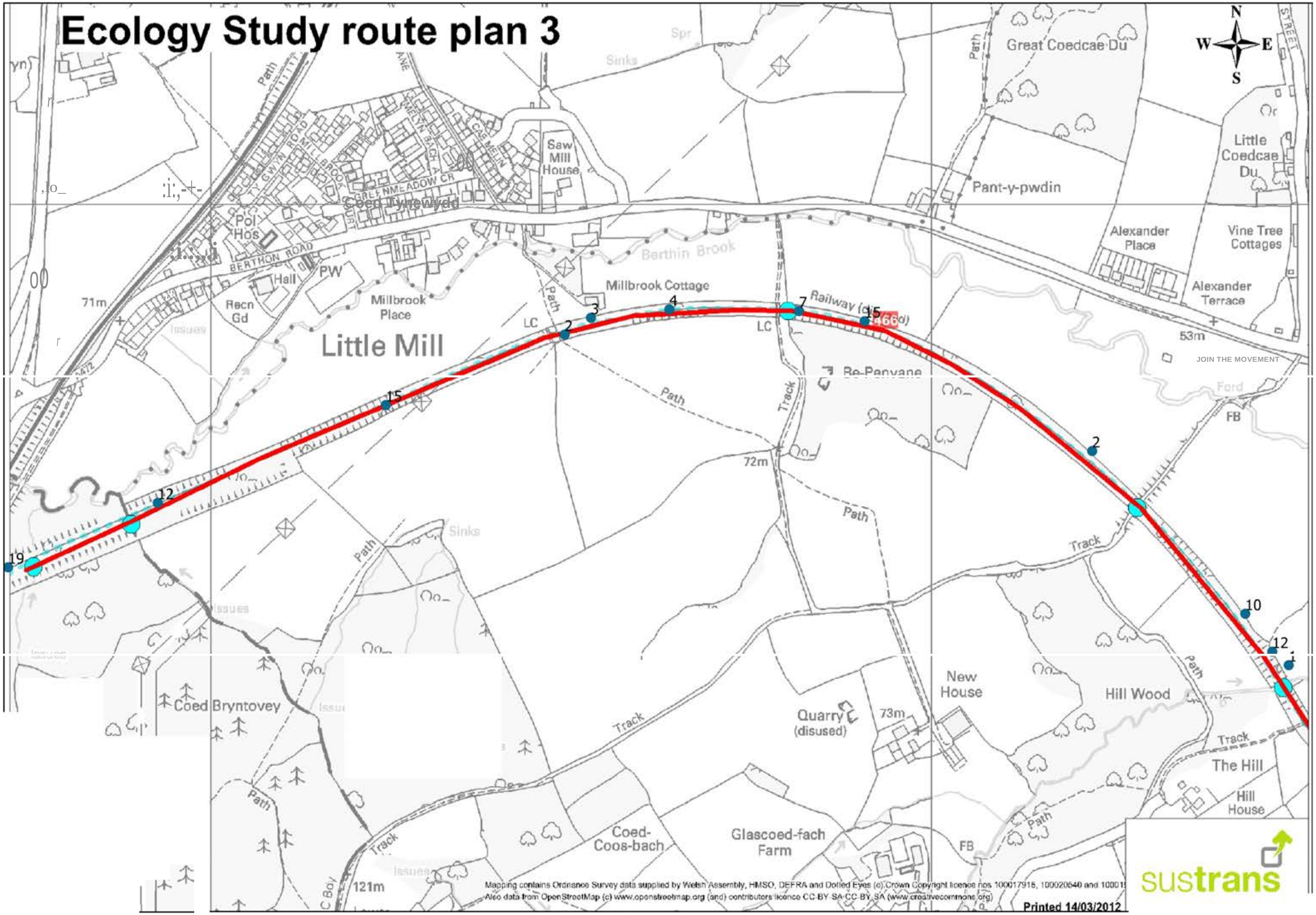

Ecology Study route plan 3
N
W
E
S
Great Coedcae Du
Little Coedcae Du
Pant-y-pwdin
Saw Mill House
Alexander Place
Vine Tree Cottages
Alexander Terrace
Berthin Brook
Millbrook Cottage
Millbrook Place
Little Mill
Pol Hos
Hall
PW
Recn Gd
BERTHON ROAD
GREENMEADOW CR
Railway (disused)
Be-Panvane
53m
71m
72m
73m
121m
Ford
FB
Path
Track
LC
Sinks
Spr
Issues
Coed Bryntovey
New House
Hill Wood
Quarry (disused)
The Hill
Hill House
Coed-Coos-bach
Glascoed-fach Farm
JOIN THE MOVEMENT
19
12
15
2
3
4
7
15
2
10
12
1
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Table 2. Target notes to accompany the site plans 1-3

Number	Note
1	Signs of otter noted (e.g. spraint, footprints, slides)
2	Birds' nests
3	Signs of badger (trails)
4	Potential bat feature (pill box with dropping, crevices in mortar, holes in trees)
5	Japanese Knotweed
6	Giant Hogweed
7	Potential reptile habitat (refugia and insolation points)
8	Nest boxes
9	Bird hide
10	Ditch suitable for amphibian use
11	Running water
12	Habitat suitable for dormouse
13	Habitat suitable for water vole
14	Fox
15	Badger latrine
16	Himalayan Balsam
17	Asbestos
18	Marshy area suitable for amphibians
19	Exposed stone gravel suitable for reptiles
20	Badger sett

APPENDIX II: PLANNING POLICY AND LEGISLATION

The following local and national planning policy and both primary and European legislation relating to nature conservation and biodiversity status are considered of relevance to the current proposal.

Planning and biodiversity

Local Authorities have a requirement to consider biodiversity and geological conservation issues when determining planning applications under the following planning policies.

Planning Policy Wales (2014) and Technical Advice Note 5 (2009)

Planning Policy Wales (Edition 7, July 2014) sets out the land use planning policies of the Welsh Government, with Chapter 5 dealing with Conserving and Improving Natural Heritage and the Coast. The advice contained within Planning Policy Wales (PPW) is supplemented for some subjects by Technical Advice Notes (TAN's).

TAN 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system will contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should':

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered;

Legislation and biodiversity

Certain species of animals and plants found in the wild in the UK are legally protected from being harmed or disturbed. These species are listed in the Wildlife and Countryside Act 1981 (as amended) or are named as European Protected Species (EPS) in the Conservation of Habitats and Species Regulations 2010 (as amended). These two main pieces of legislation have been consulted when writing this report and are therefore described in detail within this section.

Other relevant legislation and policy documents that have been consulted include - The Countryside and Rights of Way Act 2000; Natural Environment and Rural Communities Act 2006; The Hedgerow Regulations 1997; Biodiversity Action Plans, both UK-wide (UKBAP) and Local plans (LBAPs), and The National Planning Policy Framework (NPPF).

There is also legislation that legally protects certain animals - for example, the Protection of Badgers Act (1992) protects badgers and their setts, and the Deer Act (1991) places restrictions on actions that can be taken against deer species.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife & Countryside Act 1981 (as amended) [WCA] is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part I within the Act deals with the protection of wildlife.

Most European Protected Species offences are now covered under the Conservation of Habitats and Species Regulations (see below), but some 'intentional' acts are still covered under the WCA, such as obstructing access to a bat roost.

The WCA prohibits the release to the wild of non-native animal species listed on Schedule 9 (e.g. Signal Crayfish and American Mink). It also prohibits planting in the wild of plants listed in Schedule 9 (e.g. Japanese Knotweed and Rhododendron ponticum) or otherwise deliberately causing them to grow in the wild. This is to prevent the release of invasive non-native species that could threaten our native wildlife.

The provisions relating to animals in the Act only apply to 'wild animals'; these are defined as those that are living wild or were living wild before being captured or killed. It does not apply to captive bred animals being held in captivity.

There are 'defences' provided by the WCA. These are cases where acts that would otherwise be prohibited by the legislation are permitted, such as the incidental result of a lawful operation which could not be reasonable avoided, or actions within the living areas of a dwelling house.

Licensing: certain prohibited actions under the Wildlife and Countryside Act may be undertaken under licence by the proper authority. For example scientific study that requires capturing or disturbing protected animals can be allowed by obtaining a licence – e.g. bat surveys.

Conservation of Habitats and Species Regulations 2010 (as amended)

The Conservation of Habitats and Species Regulations 2010 (as amended) (which are the principal means by which the EC Habitats Directive is transposed in England and Wales) update

the legislation and consolidate all the many amendments which have been made to the Regulations since they were first made in 1994.

These regulations provide for the:

- protection of European Protected Species [EPS] (animals and plants listed in Annex IV Habitats Directive which are resident in the wild in Great Britain) including bats, dormice, great crested newts, and otters;
- designation and protection of domestic and European Sites - e.g. Site of Special Scientific Interest [SSSI] and Special Area of Conservation [SAC]; and
- adaptation of planning controls for the protection of such sites and species.

Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in exercising their function – i.e. when determining a planning application.

There is no defence that an act was the incidental and unavoidable result of a lawful activity.

Licensing: it is possible for actions which would otherwise be an offence under the Regulations to be undertaken under licence issued by the proper authority. For example, where a European Protected Species has been identified and the development risks deliberately affecting an EPS, then a 'development licence' may be required.

Species protection

The following protected species information is relevant to this report. Legislation is only discussed in relation to planning and development; other offences may exist.

Amphibians

The common frog, common toad, common newt, and palmate newt receive limited protection under the Wildlife and Countryside Act 1981 (as amended), making it illegal to sell or trade them.

The Great Crested Newt and Natterjack Toad are fully protected under the Conservation of Habitats and Species Regulations 2010 (as amended) as European Protected Species. It is illegal to:

- Deliberately capture, injure, kill, or disturb either species,
- Intentionally or recklessly obstruct access to any structure/place used for shelter or protection, or
- Damage or destroy a breeding site or resting place.

Badger

Badgers are protected in the UK under the Protection of Badgers Act 1992. Under the act it is an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat[1] a Badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett[2] (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain; it is not intended to prevent properly authorised development.

[1] The intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting “cruel ill treatment” of a Badger
[2] A sett is defined as “any structure or place which displays signs indicating current use by a Badger”. Advice issued by
Natural England (June 2009) is that a sett is protected as long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger.

Bats

All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence inter alia to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place of a bat.

In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

If proposed development work is likely to destroy or disturb bats or their roosts, then a licence will need to be obtained from Natural Resources Wales, which would be subject to appropriate measures to safeguard bats.

Birds

In the UK, the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2010 (as amended). All wild birds, their nests and eggs are protected it an offence to:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any such bird whilst it is in use or being built; or
- take or destroying an egg of any such wild bird.

The law covers all species of wild birds including common, pest or opportunistic species.

Special protection against disturbance during the breeding season is also afforded to those species listed on Schedule 1 of the Act.

Dormice

The common dormouse is classed as an European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence inter alia to:

- Deliberately capture, injure, or kill a dormouse;
- Deliberately disturb dormice;
- Damage or destroy a breeding site or resting place of a dormouse.

In addition, the dormouse is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which a dormouse uses for shelter or protection; or
- Disturb a dormouse while occupying a structure or place which it uses for that shelter or protection.

Otters

The European Otter, *Lutra lutra* is an European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence inter alia to:

- deliberately capture, injure or kill any wild otter;
- deliberately disturb wild otters;
- damage or destroy a breeding site or resting place of an otter.

In addition, the otter is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- disturbs an otter while it is occupying a structure or place which it uses for shelter or protection; or
- obstructs access to such a place.

If proposed development work is likely to destroy or disturb otters or their resting places, then a licence will need to be obtained from Natural Resources Wales, which would be subject to appropriate measures to safeguard otters.

Reptiles

Adders, slow worms, grass snakes and common lizards are protected against killing and injuring under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it illegal to intentionally kill or injure a common reptile. As a result, reptiles will be removed from areas of development and relocated onto suitable release sites before any site works can commence.

Smooth snakes and sand lizards are European Protected Species under schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). This makes it illegal to carry out the following activities:

- Deliberately or recklessly disturb, capture or kill these animals;
- Deliberately or recklessly take or destroy eggs of these animals;
- Damage or destroy a breeding site or resting place of such a wild animal; or
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead animal, or any part of, or anything derived from such a wild animal.