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ECOLOGICAL IMPACT ASSESSMENT

RHONDDA FACH TRAVEL ROUTE – PHASE 4 & 5

RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

DOCUMENT REF: WWE22181 4 & 5 ECIA_REVC_FINAL | 03/05/2024

Client:	Rhondda Cynon Taf County Borough Council
Site/Job:	Rhondda Fach Travel Route – Phase 4 & 5
Report title:	Ecological Impact Assessment
Report reference:	WWE22181 4 & 5 EcIA_REVC_FINAL

Grid Reference:	Linear route between SS 98793 97770 and ST 01022 94653
Survey date(s):	Various, see main text
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Architect/Agent:	Unknown

VERSIONING AND QUALITY ASSURANCE

Status	Date	Author	Reviewed by	Approved by
Draft	31/10/2023	Jenny O'Neill Consultant Ecologist	Dr Amy Williams Schwartz ACIEEM Senior Ecologist	Dr Amy Williams Schwartz ACIEEM Senior Ecologist
Rev A	08/03/2024	Jenny O'Neill Consultant Ecologist	Dr Amy Williams Schwartz ACIEEM Senior Ecologist	Dr Amy Williams Schwartz ACIEEM Senior Ecologist
Rev B	02/05/2024	Jenny O'Neill Consultant Ecologist		
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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.

SUMMARY

Purpose
• Wildwood Ecology was commissioned by Rhondda Cynon Taf County Borough Council (the client) to undertake an Ecological Impact Assessment (EcIA) at Rhondda Fach Travel Route – Phase 4 & 5. • The site is the subject to plans to implement a new travel route along the former railway line and existing pathways present along the route. • **This report covers both Phase 4 and 5 of the proposed travel route. At the time of issuing revision B, not all information is available to fully assess the ecological impacts of Phase 5 of the development. A further revision of this report will be required following recommended survey work for Phase 5.**
Work undertaken
• A PEA was carried out of the full route in January 2022 consisting of an extended Phase 1 Habitat Survey. A previous PEA was carried out in January, March, and April 2019 of the full route. A walkover of Phase 4 & 5 was carried out in September 2023 to assess in further detail with comprehensive plans available. • All PEA surveys followed the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal (2017) guidelines and standard Phase 1 Habitat Survey protocol (JNCC, 2010). • A desk study was undertaken January 2019 and updated in May 2023. • A PRA was undertaken at four bridges (Blaenllechau south, leisure centre bridge, Tylerstown north, and Tylerstown south), consisting of a field survey undertaken in July 2023 following best practice in line with the Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edn (Collins 2016). • A badger visual survey was carried out across Phase 4 & 5 in September 2023. • An otter survey was carried out of Phase 4 & 5 in September 2023. • A great crested newt (GCN) habitat suitability index was carried out on suitable waterbodies in across the full route in May 2023 • eDNA testing for GCN was carried out on suitable waterbodies across the full route in June 2023. • An invasive species walkover was undertaken across the full route in September 2023. • A ground level tree assessment (GLTA) was undertaken of trees to be impacted by path and attenuation pond construction in **Phase 4 only** in December 2023 and March 2024. • Further GLTA will be required for Phase 5. • A PRF aerial inspection survey was undertaken of trees identified with PRFs in **Phase 4 only** in February 2024. • A precautionary working method statement (PWMS) was produced for **Phase 4 only in January 2024** (doc ref: WWE22181 PWMS_P4).

Key Constraints

• The proposed development would result in impacts on the following designated sites, habitats, and protected species:
  ◦ **Designated sites**: Rhondda Taff and Rhondda Rivers SINC, Pont-y-gwaith Hillside, Blaenllechau Woodland SINC and Old Smokey Slopes SINC. In additional, several areas designated as Ancient Semi-Natural Woodland (ASNW) are in close proximity to this section of the route.
  ◦ **Priority habitats**: River, dwarf shrub heath, broad-leaved woodland.
  ◦ **Species**: Amphibians, badger, bats – roosts/ commuting and foraging, birds, fish, hazel dormouse, hedgehog, invertebrates, otter, and reptiles.

Requirements
Phase 4 • A CEMP will be required to detail pollution prevention controls to prevent impacts on the onsite designated sites, priority habitats, and protected species. • Mitigation and compensation measures for designated sites, habitats and species are detailed in Table 7, Section 5. **Phase 5** • A CEMP and PWMS will be required to detail pollution prevention controls to prevent impacts on the onsite designated sites, priority habitats, and protected species. • An Arboricultural Impact Assessment (AIA) is required. Following the AIA, a Ground Level Tree Assessment (GLTA) will be required for trees to be impacted. If any trees with Potential Roost Features (PRFs) are to be impacted, further bat surveys may be required. • Precautionary working methods will be required during works to Tylerstown north and south bridges. This will include supervision by a suitably qualified Ecologist during repointing of mortar and endoscoping checks of crevices immediately before works. No bridge repair works to be undertaken during bat hibernation season (November – February, inclusive). • Mitigation and compensation measures for designated sites, habitats and species are detailed in Table 7, Section 5.

Conclusions
• **PHASE 4 section of the proposed route - providing that the recommendations outlined in this report are implemented in full, the proposed development will adequately mitigate, compensate, and enhance the protected, priority and notable habitats and species within and adjacent to the site.** • **PHASE 5 section of the proposed route - the full ecological impacts of the proposed development cannot be fully assessed following the current survey work undertaken and further survey work is required and has been recommended.** • This ecological report will remain valid for a period of 18 months from the date of the last survey – i.e., until August 2025.

This report will remain valid for a maximum period of 18 months from the date of the last survey[1] - i.e. until August 2025. In the case of certain exceptions, data may only be valid for 12 months, examples include:

- Where a site may offer existing or new features which could be utilised by a mobile species within a short timeframe,
- Where a mobile species is present on site or in the wider area, and can create new features of relevance to the assessment,
- Where country-specific or species-specific guidance dictates otherwise.

Further surveys may be required to update the site information if planning is not obtained, or works do not commence within this time period.

[1] CIEEM (2019). *Advice Note: On the Lifespan of Ecological Reports and Surveys*. Chartered Institute for Ecology and Environmental Management, Winchester.

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1 INTRODUCTION

1.0 Wildwood Ecology was commissioned by Rhondda Cynon Taf County Borough Council (the client) to undertake an EcIA at Rhondda Fach Travel Route – Phase 4 & 5 (the site), centred at grid reference: Linear route between SS 98793 97770 and ST 01022 94653

Site description

1.1 The aerial image of the site (Figure 1) shows Phase 4 & 5 of the proposed route are located between National Grid Reference (NGR) SS 97099 99298 and SS 98787 97775 and is approximately 2.7km in length. The proposed route runs alongside the Rhondda Fach River and consists of existing linear pathways and disused railway line, bounded by open hillside, grassland, scrub, and woodland.

1.2 The wider landscape includes the river and river corridor, woodland blocks, open hillside and ffridd areas, along with areas of residential housing and other associated infrastructure.

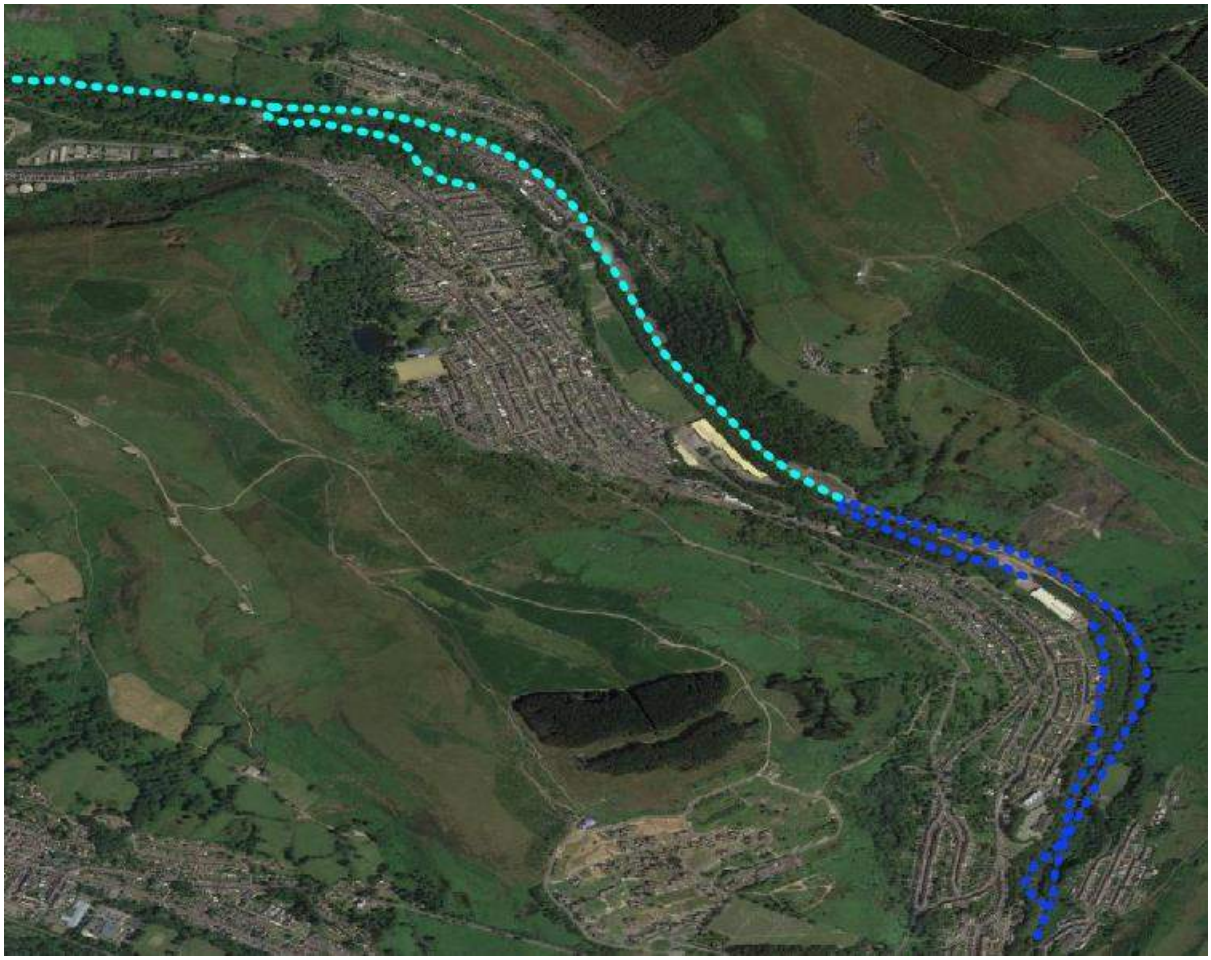


Figure 1 – Aerial image of the site (light blue dotted line shows Phase 4 section of route, dark blue dotted line shows Phase 5 section of route). Image used under licence (©2023 Google). Imagery date 20/07/2021.

Proposed development

1.3 The site is the subject to plans to implement a new travel route along the former railway line and existing pathways present along the route, including:

- Clearance of vegetation (scrub, tall ruderal, grassland, immature trees) along path edges;
- Construction of bridge at north of Phase 4;
- Excavation of topsoil and hard materials;
- Installation of culverts, and other works that affect the riverbank;
- Repair works to four bridges in Phase 5;
- Excavation of new drainage ditches;
- Removal of trees.

Associated reports

1.4 A desk study was undertaken in relation to the wider site in May 2023, this is presented in a separate document (document reference: WWE22181 RFATR Desk study), which should be read in conjunction with this report.

1.5 A PWMS has been produced for works at Phase 4 of the route, to detail working methods and mitigation requirements for species, habitats, and designated sites (document reference: WWE22181 PWMS_P4).

1.6 An Arboricultural Impact Assessment has been produced for Phase 4 of the route, which should be read in conjunction with this report (document reference: WWE23182 AIA DRAFT).

Purpose of this report

1.7 The purpose of this report is to provide sufficient information for the Local Planning Authority to fully assess the ecological impacts of the proposed development, or to identify what further information is required before a full assessment can be made.

1.8 The key objectives of this EcIA are to:

- identify the likely ecological constraints associated with the proposed development.
- identify mitigation measures likely to be required, following the 'Mitigation Hierarchy.'
- identify the opportunities for the proposed development to deliver ecological enhancement.

2 METHODOLOGY

2.0 This report has been informed by the following, with detailed methodology provided in Appendix I:

- Full desk study and records search – May 2023
- Phase 1 habitat survey – January 2022 (full), September 2023 (walkover)
- Preliminary Roost Assessment – July 2023
- Badger visual survey – September 2023
- GCN HSI – May 2023
- GCN eDNA – June 2023
- Invasive species walkover - September 2023
- Otter survey – September 2023
- GLTA – December 2023 (main route), March 2024 (attenuation pond)
- PRF aerial inspection survey – February 2024

2.1 This report has been written in cognisance of the CIEEM Guidelines on: Ecological Report Writing (2017), Preliminary Ecological Appraisal (2017) and Ecological Impact Assessment (2018).

Desk study

2.2 A desk study was undertaken in relation to the wider site in May 2023, this is presented in a separate document (document reference: WWE22181 RFATR Desk study), which should be read in conjunction with this report.

2.3 A previous desk study was carried out by Wildwood Ecology in January 2019 (document reference: WWE19003 PEA REV A – Desk study report, 2023)

Scoping of HRA

2.4 The desk study included a screening of SACs within 25km of site and RAMSAR sites within 50km, along with assessment of associated negative pressure codes. Full details are provided within the separate desk study document (document reference: WWE19003 PEA REV A – Desk study report, 2023).

Deviation from standard methodology

2.5 It was not possible to access Pond A during GCN eDNA surveys, which was assessed as being of good suitability for GCN during HSI assessment. The pond was located on private land, and it was not possible to gain access after the initial HSI survey due to a lack of contact from the landowner.

2.6 During the badger survey, there were some limited areas where access was not possible due to either very dense vegetation or steep banks. In these areas binoculars were used to check for mammal paths, gaps under fencing, or badger hairs on fencing in these areas.

2.7 During the otter survey, there were areas where access was not possible due to either dense vegetation or steep riverbanks. In these areas binoculars were used to check for otter signs, and inspection of bankside vegetation made for paths leading from the river. The river is prone to high water levels and in the

week leading up to the survey there was a period of high rainfall which may have resulted in otter field signs being washed away.

2.8 GLTA and PRF inspection has been undertaken for Phase 4 only, Phase 5 will require further surveys.

2.9 It was not possible to fully inspect an offsite large oak tree during the GLTA and PRF inspections Tree ID: T28. During the Arboricultural Impact Assessment (AIA) undertaken by Wildwood Arboriculture (2024), the tree was advised for retention (further details can be found in the AIA report). It is not expected this tree will be impacted and will be subject to tree protection measures during works. However if any impacts to this tree are identified, further ground level tree assessment and PRF inspection will be required.

3 RESULTS

Desk study

3.0 Please see separate desk study report (document reference: WWE19003 PEA REV A – Desk study report, 2023), which should be read in conjunction with this report.

Field survey

Timing and conditions

3.1 Prevailing weather conditions during the field surveys are summarised within Table 1.

Table 1 – Summary of weather conditions during the field surveys.

Date	Weather conditions			
	Temp [°C]	Cloud cover [Oktas]	Wind speed [Beaufort scale]	Rain
25/01/2022 PEA	3	8	1	Nil
13/09/2023 Phase 4 & 5 PEA walkover	10	3	1	Nil
13/07/2023 PRA (4 x bridges)	11	6	1	Light drizzle
28/09/2023 Otter survey Phase 4 & 5	12	7	2	Nil
09/09/2023 Badger survey	22	1	1	Nil
24/05/2023 Invasives species walkover	13	8	2	Light drizzle
26/05/2023 HSI Phase 3, 4 & 5	17	1	1	Nil
08/06/2023 eDNA sampling	18	1	1	Nil
06/12/2023 Phase 4 GLTA (main route)	2	2	2	Nil
06/12/2023 Phase 4 GLTA (attenuation pond)	10	8	3	Light drizzle
19/02/2024 PRF inspection surveys	5	2	1	Nil

PEA

Priority, protected and notable habitats

3.2 The site and adjacent areas were classified according to the following Phase 1 habitat types:

- A1.1.1 Semi-natural, broad-leaved woodland
- A1.3.1 Semi-natural, mixed woodland
- A2.1 Scrub (dense/continuous)
- B1.2 Semi-improved acid grassland
- B.2 Neutral grassland

- B.6 Poor semi-improved grassland
- C.1 Bracken
- C3.1 Tall ruderal
- D1 Dry dwarf shrub heath
- G1 Standing water
- G2 Running water
- J.1.2 Amenity grassland
- J1.3 Ephemeral/short perennial

3.3 Table 2 sets out descriptions of the habitats present within the site using Phase 1 Survey habitat classification hierarchical alphanumeric reference codes, along with descriptions of the Target Notes.

3.4 The distribution and extent of habitats which were present within the site is illustrated in the extended Phase 1 habitat plan (Appendix II) along with the locations of the Target Notes. An accompanying full species list (including scientific names) can be found in Appendix XI.

Table 2 – Habitats and linear features present within the site.

Habitat type/Linear feature	Species present
A1.1.1 Semi-natural, broad-leaved woodland Broadleaved woodland is found within and adjacent to the site and along the river corridor. Much of the habitat is secondary woodland of recent origin, comprised of young and semi mature trees, however some larger and mature trees are present in areas. Areas classified as ASNW are found within and adjacent to the site.	Alder, ash, blackthorn, bracken, bramble, broad-leaved dock, cleavers, cocksfoot, common nettle, creeping buttercup, dandelion, elder, field maple, foxglove, goat willow, gorse, hawthorn, hazel, herb Robert, Himalayan balsam, hollyberry cotoneaster ivy, Leyland cypress, maidenhair spleenwort, meadow buttercup, opposite leaved saxifrage, pedunculate oak, ragwort, rhododendron, rowan, silver birch sycamore, willowherb sp., yew
A1.3.1 Semi-natural, mixed woodland Some mixed woodland was found adjacent to Phase 4.	Alder, arch, ash, bilberry, bracken, dogwood, heather, hogweed, pedunculate oak, willow, yew
A2.1 Scrub (dense/continuous) Scrub understorey was found throughout the woodland with varying degrees of openness. Scrub was found along path edges and encroachment of heath and grassland areas was apparent.	Alder, ash, birch sp., bramble, broad leaved dock, buddleia, common nettle, dogrose, dogwood, foxglove, gorse, hazel, Himalayan balsam, hollyberry cotoneaster, ivy, larch, oak, rhododendron, silver birch, spruce, willow sp.
B1.2 Semi-improved acid grassland Patches of this habitat type were found along the proposed route, with larger areas present in the local area.	Cleavers, cocksfoot, common buttercup, common knapweed, common vetch, crested dog's tail, field woodrush, greater bird's foot trefoil, hard rush, jointed rush, lesser trefoil, marsh orchid sp., meadow buttercup, ragwort, sedge sp., soft rush
B2 Neutral grassland Patches of this habitat type were found along the proposed route.	Bird's foot trefoil, broad leaved dock, meadow buttercup, meadowsweet, ribwort plantain, red clover, vetch sp., white clover, Yorkshire fog
C1 Bracken Patches of bracken were observed on the valley sides adjacent to the proposed route, interspersed with other habitat types.	Bracken
C3.1 Tall ruderal Small areas of this habitat were found along the route, bordering other habitat types.	Bracken, bracken, broad leaved dock, common nettle, crested dog's tail, evening primrose, greater willowherb, Himalayan balsam, Japanese knotweed, ragwort, rosebay willowherb, spear thistle, willowherb sp.

D1 Dry dwarf shrub heath Some areas of heathland are found on the hillside adjacent to site, these are often encroached by Himalayan balsam.	Bilberry, ribwort plantain, bramble, common knapweed, cocksfoot, common heather, cross-leaved heath, bell heather, bracken, soft rush, field woodrush, Himalayan balsam
G2 Running water There was a river running alongside the proposed route, as well as several streams and channels entering the main flow.	N/A
G1 Standing water Ephemeral pools and ditches were present along the path, fed by land drains and ditches.	Water crowfoot sp., soft rush, hard rush, compact rush, moss sp.
I1.1.1 Acid/neutral inland cliff, natural There were several section of exposed rock and cliff face along the river and valley sides.	
J1.3 Ephemeral/short perennial In some areas of disturbed path edges, at access to sites for works, or around gateways, growth coming through was of this type.	Creeping cinquefoil, germander speedwell, greater plantain, groundsel, mullein sp., Ribwort plantain, sow thistle, sycamore (seedlings), white clover
J2.5 Wall Several low-level walls and wall features were found on the northern side of the track. These were not continuous.	N/A
J2.6 Dry ditch There were several dry ditches onsite, running alongside the existing pathways and woodland areas.	N/A
J5 Other habitat Ballast/gravel path with ephemeral/short perennial vegetation along its length.	N/A

Habitat descriptions

River

3.5 The Rhondda Fach River flows alongside the path. This is designated as a SINC, contributes to the habitat diversity onsite, and provides opportunities for multiple wildlife species. All rivers are a priority habitat, it is therefore considered to be of **national ecological importance.**

Dry dwarf heath scrub

3.6 This habitat is present in the wider area but is unlikely to be impacted through works in Phase 4 & 5. Heathland is categorised as priority habitat, although it should be noted that the areas close to the proposed works would be unlikely to qualify as a priority habitat, as they are encroached by Himalayan balsam and of low quality. They are therefore considered to be of **site ecological importance.**

Broad-leaved and mixed woodland

3.7 Much of the broad-leaved and mixed woodland is secondary woodland of recent origin, comprised of young and semi mature trees. These areas provide structural diversity to the site, are likely to provide foraging, and potentially roosting, opportunities for local bat populations and may support nesting birds and other wildlife. It is therefore considered to be of **local ecological importance**.

3.8 Some large, mature trees are located within the woodland along with sections of woodland designated as ASNW which are located on or adjacent to site (see Appendix V). These sections of habitat are considered to be of up to **county ecological importance.**

Standing water

3.9 The ditches contribute to the habitat diversity onsite and provide opportunities, including for breeding, for multiple wildlife species. They are a priority habitat and therefore considered to be of **local ecological importance.**

Scrub, tall ruderal, semi-improved/ neutral/ acid grassland, ephemeral/ short perennial, scattered bracken, wall

3.10 These habitats are comprised of common species and are well represented in the local area. They contribute to the habitat diversity of the site and provide forging opportunities and shelter to wildlife. They are therefore considered to have **site ecological importance.**

Invasive species

3.11 Himalayan balsam and Japanese knotweed are found at several areas across the site, scattered within the woodland and in large stands in some locations. Himalayan balsam is found encroaching onto heathland and grassland habitats. Rhododendron, montbretia, hollyberry cotoneaster, and buddleia were also noted within the site. An invasive species map is given in Appendix VII.

Incidental fauna records

3.12 The presence of the following species was observed or inferred by field signs at the site during the field surveys:

Amphibians: common frog, common toad, palmate newt.

Birds: blackbird, blue tit, bullfinch, buzzard, carrion crow, chaffinch, dunnock, dipper, great tit, goldcrest, goldfinch, greenfinch, green woodpecker, grey wagtail, heron, herring gull, house sparrow, lesser black-backed gull, jackdaw, long tailed tit, magpie, mallard, nuthatch, raven, robin, song thrush, woodpigeon, wren.

Insects: elephant hawk moth, orange-tip butterfly, peacock butterfly, white-tailed bumblebee.

Mammals: dog, fox, mole, otter, rabbit.

3.13 Mammal pathways were also noted in several areas, though these were not able to be attributed definitively to any species.

Survey details

PRA

3.14 A description of the structures inspected during the PRA and the results of the survey can be seen in Table 3. Bridge locations are shown in Appendix VI.

Table 3 - Structure information and PRA results

Structure reference	Bat suitability	Bird suitability	Description (including internal and external roosting features)	Development plans
A	Negligible suitability	Suitable	**Blaenllechau south (substation bridge**). Wooden footbridge over river between stone retaining walls. No roosting features for bats were noted on the bridge, although crevices were present in the retaining walls (these are not subject to works). The structure is suitable for nesting dipper/ grey wagtail, it was not possible (as no access below the bridge) to check for nests.	Repairs including: • Existing timber bridge to be replaced by wider bridge. • No works anticipated to the existing abutments and wing walls/training walls.
B	Negligible suitability	Confirmed	**Leisure centre bridge**. Metal and wood frame footbridge, with stone retaining wall at one bank and boulder/ block construction at the other. No roosting features for bats were noted on the bridge, with no crevices noted in the retaining walls. The structure is suitable for nesting dipper/ grey wagtail, and a dipper nest was noted below the bridge.	Repairs including: • Existing timber bridge to be replaced by wider bridge on new abutments.
C	Moderate suitability	Confirmed	**Tylerstown north bridge.** Stone and brick-built bridge with metal deck and girders. Roosting features for bats included multiple crevices and gaps in stonework. Ledges were present below the bridge suitable for nesting birds and an old nest was noted (possible pigeon/ jackdaw).	Repairs including: • Repointing and masonry repairs to abutments, central pier, wing walls and training walls. • Bridge deck repairs.

D	Moderate suitability	Suitable	**Tylerstown south bridge.** Stone and brick-built bridge with metal deck and girders. Roosting features for bats included multiple crevices and gaps in stonework. Ledges were present below the bridge suitable for nesting birds.	Repairs including: • Repointing and masonry repairs to abutments, central pier, wing walls and training walls. • Bridge deck repairs.

3.15 During the PRA, it was noted that due to the very steep banks, fast flowing river, dense vegetation, and uneven footing to the banks and below the bridges it will not be possible to carry out night-time surveys of Tylerstown north and south bridges (as per guidelines). Night-time surveys would cause a significant health and safety risk and it would not be possible to gain a comprehensive view of the potential roost features present.

3.16 A further site visit was arranged with RCT county ecologist Richard Wistow on 9th August 2023 to assess the possibility of carrying out night-time surveys, who agreed that the health and safety risk would be too high.

Badger survey

3.17 A badger survey was carried out along Phases 4 and 5, onsite and 50m either side of the works boundary.

3.18 Some areas could not be accessed due to either riverbanks being too steep or vegetation too dense. In these locations, binoculars were used where access was not possible, although some sections could still not be fully inspected.

3.19 The main inaccessible areas for the badger survey were at the south of Phase 4 and are shown in Figure 2, below.

Figure 2 - Inaccessible areas noted during badger survey.

3.20 No signs of badger were recorded (e.g. setts, badger hairs, latrines, snuffle holes, paths, day nests).

3.21 Details were taken where access was not possible, or mammal paths or burrows of other species were noted. See Appendix VIII for details.

GCN HSI pond analysis

3.22 Ponds within 500m of the entire route were located using aerial mapping. Where access was possible and they were considered suitable for GCN, they were assessed using the HSI scoring system.

3.23 A total of seven ponds were assessed using the HSI scoring system, see table 4.

Table 4 - Full HSI calculations

Factor	A	B	C	D	E	F	G
1 - Location	0.5	0.5	0.5	0.5	0.5	0.5	0.5
2 - Area	0.1	0.05	0.05	0.05	0.05	0.05	0.05
3 - Drying	1.0	0.5	0.5	1	0.1	1	1
4 - Water Quality	1.0	0.67	0.67	0.67	0.33	0.67	0.67
5 – Shade	1.0	1.0	1	1	0.8	1	1
6 - Waterfowl	1.0	0.67	0.67	0.67	0.67	0.67	0.67
7 - Fish	0.67	0.33	0.67	0.33	0.67	0.67	0.67
8 - Density	1.0	1.0	1.0	1.0	1.0	1.0	1.0
9 -Terrestrial Habitat	1.0	0.6	1.0	1.0	1.0	1.0	1.0
10 -Macrophyte cover	0.9	0.9	0.4	04	0.3	0.3	0.3
HSI score	**0.70**	**0.50**	**0.52**	**0.66**	**0.39**	**0.54**	**0.54**
Pond suitability	**Good**	**Below average**	**Below average**	**Average**	**Poor**	**Below average**	**Below average**

GCN eDNA

3.24 Water samples were taken from six of the ponds assessed using the HSI scoring system, and eDNA analysis was carried out, see table 5.

3.25 It was not possible to gain access to Pond A for eDNA testing. This pond was located on private land.

Table 5 - eDNA survey results.

Pond ref	Grid reference	Sample result	GCN score
A	SS 97755 98505	N/A	N/A
B	SS 97885 98146	Negative	0 positive replicates from a series of 12.
C	SS 97963 98164	Negative	0 positive replicates from a series of 12.
D	SS 98367 97977	Negative	0 positive replicates from a series of 12.
E	SS 98527 97890	Negative	0 positive replicates from a series of 12.
F	ST 00716 96186	Negative	0 positive replicates from a series of 12.
G	ST 00924 96087	Negative	0 positive replicates from a series of 12.

Otter survey

3.26 An otter survey was carried out along the river and adjacent habitat at Phase 4 and 5 of the site consisting of a visual search for otter signs (e.g. spraints, urine staining, footprints, hairs, slides, feeding signs, couches, and holts). Any mammal paths leading away from the river were investigated.

3.27 Some areas could not be accessed due to steep riverbanks or dense vegetation. In these locations, binoculars were used where access was not possible, although some sections could still not be fully inspected.

3.28 The river is prone to high water levels and in the week leading up to the survey there was a period of high rainfall which may have resulted in otter field signs being washed away.

3.29 Otter spraint and urine staining was noted in two locations along the river on Phase 4 and 5, with one spraint at least several weeks old and the other likely around a week old. See Appendix IX for further details and locations.

Ground Level Tree Assessment (GLTA)

3.30 A Ground Level Tree Assessment (GLTA) was undertaken on trees likely to be affected by works on Phase 4 only. A summary of the results can be seen in Appendix IV. **NB. Phase 5 works should be subject to further assessment.**

3.31 A total of 34 trees to be impacted were identified as having PRFs that required further inspections, either by endoscoping from the ground or by MEWP. All trees with PRFs were marked with biodegradable tree spray to facilitate later inspections.

3.32 During the Arboricultural Impact Assessment (AIA) undertaken by Wildwood Arboriculture (2024), it was indicated that the root protection zone (RPZ) of one tree advised for retention (Tree ID: T28) may be impacted by the works. Further details can be found in the AIA report. It was not possible to fully inspect this offsite tree during the GLTA. If this tree is to be impacted, further ground level tree assessment and PRF inspection will be required.

PRF inspection survey

3.33 Prior to the PRF inspection, the proposed route was marked out. As a result of this, several trees marked as requiring PRF inspection were considered not within the area of vegetation clearance.

3.34 A site visit was undertaken to further inspect all PRFs identified during the GLTA. Inspections were undertaken either by endoscoping from the ground or by use of a MEWP.

3.35 Following inspection, all features were classified as either unsuitable for use by roosting bats, or PRF-I. No PRF-M features were identified. As no signs of bats were found, these trees were advised for immediate clearance following inspection.

3.36 A total of nine PRF-I features were identified, these will require compensation in the form of bat boxes or tree veteranisation. See Table 7, Section 5 for further details, and Appendix X for photos of all PRF-I features.

4 DISCUSSION AND ASSESSMENT

4.0 The following discussion and assessment are provided to ensure full compliance with legislation and both local and national planning policy (see Appendix XIV).

Effects of the proposed development

4.1 The proposed development will result in the removal of habitats and/or disturbance to their associated species and features. This section concerns an assessment of ecological effects resulting from the proposed development. The following effects have been identified:

- Clearance of vegetation (scrub, tall ruderal, grassland, immature trees) along path edges;
- Construction of bridge at north of Phase 4;
- Excavation of topsoil and hard materials;
- Installation of culverts, and other works that affect the riverbank;
- Repair works to four bridges;
- Excavation of new drainage ditches;
- Removal of trees.

Designated sites

4.2 There were both statutory and non-statutory designated sites identified within the vicinity of the site (see separate desk study report for full details). The closest statutory site was Craig Point Rhondda SSSI which was 1.88km west of the southern tip of Phase 5.

4.3 There were four non-statutory sites (SINCs) on or adjacent to site (see separate desk study report for full details):

- Rhondda Taff and Rhondda Rivers SINC
- Pont-y-gwaith Hillside SINC
- Blaenllechau Woodland SINC
- Old Smokey Slopes SINC

4.4 In additional, several areas designated as Ancient Semi-Natural Woodland (ASNW) are on or adjacent to this section of the route (see Appendix V for locations).

4.5 There were two RAMSAR sites within approximately 50km of the site and ten SACs within approximately 25km of the site.

4.6 Given the nature of the proposed development and its lack of proximity to any SACs, SPAs and RAMSAR sites, works will not trigger any of the listed pressure codes or adverse factor categories listed within the HRA screening (see separate desk study report for full details).

4.7 Given the scale of the proposed development, and the lack of likely impacts beyond the site boundary, the nearby statutory designated site (Craig Point

Rhondda SSSI) is sufficiently well separated so that no impacts on its designated features are anticipated as a result of the works.

4.8 Depending on the onsite habitat and engineering required at the points where the SINCs are onsite/ adjacent to the site (Rhondda Taff and Rhondda Rivers SINC, Pont-y-gwaith Hillside SINC, Blaenllechau Woodland SINC, Old Smokey Slopes SINC), there may be impacts upon their features in the absence of mitigation. SINCs that are located further away are unlikely to be impacted by the proposals.

Priority, protected and notable habitats

4.9 Common and widespread habitats which are of limited ecological importance are not discussed further as they will be compensated by native and wildlife-friendly planting and general landscaping across the site (see Section 5).

4.10 The following priority habitats will require further consideration:

- Dry dwarf heath scrub;
- Rhondda Fach River;
- Broadleaved woodland.

Dry dwarf heath scrub

4.11 Upland heathland is a priority habitat. This habitat is present in the wider area but is unlikely to be impacted through works in Phase 4 & 5.

4.12 It should be noted that the areas close to the proposed works would be unlikely to qualify as a priority habitat, as they are encroached by Himalayan balsam and of low quality.

4.13 It is not expected that this habitat will be impacted, and a flexible approach will be required to ensure that any impacts to high-quality priority habitat are avoided.

River

4.14 Rhondda Fach River is designated a SINC and is priority habitat. The river will not be directly impacted by the proposed works but may be indirectly impacted as a result of pollution such as by soil run off or other construction activities. A CEMP will be required to prevent this from happening and to mitigate any impacts in the unlikely event that they should occur.

Broad-leaved/ mixed woodland

4.15 The areas of woodland expected to be impacted are mainly secondary woodland of recent origin that are well represented in the local area and are of low ecological value. This habitat may be impacted through direct loss of small sections, there are already paths through the area and the proposals will widen these existing routes. Clearance of some of these areas will result in positive disturbance and opening up of canopy, with natural regeneration of habitats.

4.16 Areas have been identified with larger, mature trees and sections of ASNW on or adjacent to site. An Arboricultural Impact Assessment (AIA) will be required

in these sections to assess and avoid impacts to trees or woodland of significant ecological value.

Priority, protected and notable species

4.17 The following priority, protected or notable species were present, likely to be present or currently unconfirmed, within the site:

- Amphibians
- Badger
- Bats
- Birds
- Hazel dormouse
- Hedgehog
- Fish
- Invertebrates
- Reptiles
- Otter
- Invasive species

Amphibians

4.18 The local records search returned 22 records for amphibian species (no GCN records) in the vicinity of the site (document reference: WWE19003 PEA REV A – Desk study report, 2023) including common frog, common toad, and palmate newt.

4.19 Common frog, common toad, and palmate newt were observed breeding onsite during surveys.

4.20 HSI assessment was undertaken at seven ponds and eDNA testing was carried at six ponds across the proposed route. All eDNA tests returned negative results for GCN. This taken along with the lack of local records means it is unlikely that GCN will be found onsite.

4.21 Ditches are present alongside some sections of the path, which are suitable for breeding amphibians of common species. These will be impacted by the development either by degradation or temporary removal and replacement.

4.22 The terrestrial habitat onsite and in the surrounding landscape offers good opportunities for foraging and shelter.

4.23 The proposed development will result in the loss of small sections of terrestrial habitat (grassland, tall ruderal, scrub) that is suitable for use by amphibians for foraging and commuting. There will be however, continued available habitat suitable for use by amphibians including extensive optimal terrestrial habitat, and breeding habitat i.e. new and retained ditches.

4.24 In the absence of mitigation during works, there will be an adverse impact on common amphibians as a result of the proposed development.

4.25 There is unlikely to be a negative impact on great crested newt as a result of the proposed development.

European badger

4.26 The local records search returned no records for European badger in the vicinity of the site (document reference: WWE19003 PEA REV A – Desk study report, 2023).

4.27 A badger survey was undertaken consisting of a visual search for badger signs (e.g. setts, latrines, mammal paths, snuffle holes, or badger hairs). No evidence of use by badger was identified during onsite. Although mammal paths were noted, the paths could not be conclusively attributed to badger, especially with the paths used by dogs, and likely other species e.g. people, foxes.

4.28 The proposed development will result in the loss of small areas of potential foraging habitat (such as grassland, tall ruderal, scrub) that could be suitable for badger (if the species is present at the site).

4.29 However, it should be noted that substantial areas of suitable foraging habitat will remain onsite post-completion of the development and throughout the development adjacent to the site and surrounding area.

4.30 Therefore, there is unlikely to be an adverse impact on European badger as a result of the proposed development, but precautionary methods should be implemented.

Bats

4.31 The local records search returned 24 records for at least four bat species in the vicinity of the site (document reference: WWE19003 PEA REV A – Desk study report, 2023).

4.32 The site comprises high quality, continuous habitat that is well connected to the wider landscape including river corridor and woodland. It is located in a rural area with low levels of light pollution throughout the site, although there are industrial areas and settlements nearby (Maerdy, Ferndale).

4.33 There were several structures (bridges, walls, cliffs, and trees) on and along the site which offer a range of roosting opportunities for bats. In addition, the vegetated and mainly unilluminated river corridor offers excellent foraging and commuting opportunities for a range of bat species, including horseshoe and Myotis sp.

4.34 Several bat species were recorded foraging and commuting during surveys including common and soprano pipistrelle, Daubenton's, brown long-eared and Myotis sp.

4.35 The current proposals will not remove any walls or cliff faces that may provide roost space for bats.

4.36 Repair works will be undertaken to four bridges at Phase 4 and 5 sections of the route. Two bridges (Blaenllechau south and Leisure centre) have been assessed as negligible for roosting bats, and two (Tylerstown north and south) as of moderate potential for roosting bats.

4.37 Due to the very steep banks, fast flowing river, dense vegetation, and uneven footing on the banks and below the bridges it was not possible to carry out night-time surveys of Tylerstown north and south bridges (as per guidelines) either safely or with a comprehensive view of the potential roost features present. Precautionary working methods will be required during works including endoscoping checks of crevices immediately before repointing.

4.38 Several trees were noted with PRFs and ivy coverage along this Phase 4 and 5 of the route. Where trees are likely to be impacted, an AIA will be required to assess which trees will be impacted by the works, followed by a Ground Level Tree Assessment (GLTA). If trees with PRFs are to be impacted, PRF inspection of these trees will be required.

4.39 There is no additional lighting planned and so there will be no habitat fragmentation due to the presence additional artificial light at night associated with the proposals.

4.40 A small amount of habitat will be disturbed and lost but this will be minimal and substantial continued foraging resources and commuting corridors post-works will remain. Consequently, it is unlikely that impacts on bats using the local area through habitat loss will occur.

4.41 There may be a negative impact on bat species as a result of the proposed development, if mitigation measures are not followed during bridge repair works, or trees with PRFs are impacted without mitigation.

Nesting birds

4.42 The local records search returned a number of records for nesting bird species in the vicinity of the site, including some Schedule 1 designated species (document reference: WWE19003 PEA REV A – Desk study report, 2023). In addition, several bird species were encountered onsite during the PEA.

4.43 It is considered likely that nesting birds use the habitats (woodlands, scrub, bridges, walls) present onsite.

4.44 Birds' nests were confirmed within scrub and structures onsite (features, habitats), with species identified including dipper, song thrush, and long tailed tit.

4.45 Fence posts and electrical poles are present as hunting perches and birds of prey were noted onsite, along with several records returned in the local area. No such features are proposed for removal during works.

4.46 There are limited nesting features onsite for larger birds of prey due to the levels of disturbance and lack of suitable habitat; and no features suitable for use by barn owl.

4.47 In the absence of mitigation during vegetation clearance or tree removal there will be be an adverse impact on nesting bird species as a result of the proposed development, due to killing/ injury/ destruction of active nests (if present), triggering legislation that protects nesting birds.

Common dormouse

4.48 The local records search returned no records for common dormouse in the vicinity of the site (document reference: WWE19003 PEA REV A – Desk study report, 2023). However, it is possible that dormice are under-recorded in the area.

4.49 There are some habitats onsite which offer foraging and nest resources for dormice (scrub, woodland) however there will be very limited losses of these habitat types, and so impacts are perceived to be negligible for dormice, if they are present in the area.

4.50 Due to the lack of known records in the area and the limited impact on suitable habitats, there is unlikely to be a negative impact on common dormouse as a result of the proposed development.

Fish

4.51 The local records search returned four records for two Category 1 fish species in the vicinity of the site (document reference: WWE19003 PEA REV A – Desk study report, 2023).

4.52 The river running alongside the proposed path is suitable for a variety of fish species and records were returned for salmon and sea/brown trout in the watercourse.

4.53 The watercourse will not be directly impacted during in the proposed works.

4.54 There is potential for water pollution as a result of the development (e.g. soil run off, or other construction activities) which could indirectly impact fish species.

West European hedgehog

4.55 The local records search returned 5 records for west European hedgehog species in the vicinity of the site (document reference: WWE19003 PEA REV A – Desk study report, 2023).

4.56 Much of the habitat onsite offers good foraging and nest resources for hedgehog (scrub, woodland, grassland) and it is highly likely hedgehog will use the site and wider areas.

4.57 The proposed development will result in the loss of small areas of potential foraging and nesting habitat (such as grassland, tall ruderal, scrub, woodland) that could be suitable for hedgehog.

4.58 However, it should be noted that substantial areas of suitable habitat will remain onsite post-completion of the development, adjacent to the site, and

within the surrounding area. It is therefore considered unlikely that the proposed development will impact on the local hedgehog population.

4.59 Therefore, there is unlikely to be an adverse impact on hedgehog as a result of the proposed development, but precautionary methods should be implemented during vegetation clearance.

Invertebrates

4.60 The local records search returned a number of records for invertebrate species in the vicinity of the site (document reference: WWE19003 PEA REV A – Desk study report, 2023), with over 90 records within 500m of the site.

4.61 Common invertebrates were noted onsite during the survey, and much of the onsite habitat comprises flowering species which provide suitable food sources for a range of invertebrate species.

4.62 Records were returned for dingy skipper onsite, with caterpillar foodplant bird's foot trefoil found in several locations. Records were also returned for brown-banded carder bee in the wider area, with favoured foodplants including knapweed, vetch sp. and red clover noted onsite.

4.63 Small areas of habitat suitable for invertebrates will be disturbed or lost but this will be minimal and substantial continued foraging resources are available immediately adjacent to site and in the wider area. Consequently, it is unlikely that impacts will occur on local invertebrate populations due to habitat loss.

European otter

4.64 The local records search returned three records for European otter in the vicinity of the site (document reference: WWE19003 PEA REV A – Desk study report, 2023), with the nearest within 11m of the site (on the river corridor).

4.65 During surveys, otter spraint and urine staining was noted in two locations along the river on Phase 4 and 5, with one spraint at least several weeks old and the other likely around a week old. Although no holts or couches were identified, areas of dense vegetation along the riverbank would be suitable for resting places.

4.66 The presence of the river running parallel along the site provides otter with multiple opportunities to enter the site. It is therefore highly likely that otter will use the river, site, and wider area.

4.67 There is potential for water pollution as a result of the development (e.g. soil run off, or other construction activities) which could indirectly impact otter, or otter food sources.

4.68 There may be a negative impact on European otter as a result of the proposed development, in the absence of the mitigation.

Reptiles

4.69 The local records search returned 17 records for two reptile species in the vicinity of the site (document reference: WWE19003 PEA REV A – Desk study report, 2023).

4.70 Records for slow worm and common lizard were noted in the local area and onsite habitats are considered excellent for use by reptiles for basking, commuting, and foraging particularly where there was a scrub, grassland, heath mosaic.

4.71 Incidental sightings of common lizard and slow worm were noted on Phase 1, 2, and 3 of the route, and it can be assumed that other reptile species (including grass snake and adder) could be found onsite.

4.72 Additionally, the following features are suitable to provide shelter and hibernation opportunities for reptiles: scrub, tree roots, walls, rocky areas.

4.73 In the absence of mitigation there may be a negative impact on reptiles as a result of the proposed development due to killing/ injury, triggering legislation that protects reptiles.

Water vole

4.74 The local records search returned no records for water vole in the vicinity of the site (document reference: WWE19003 PEA REV A – Desk study report, 2023).

4.75 No evidence of water vole was identified at the site.

4.76 Water vole have relatively small territories and as the species is unlikely to disperse to the site via the surrounding habitats, it is considered unlikely to be present.

4.77 Water vole are therefore not considered further in this report.

<u>Effects of proposed development</u>

4.78 Table 6 summarises the effects of the proposed development on protected, priority and notable habitats and species that are present or are likely to be present within the site.

Table 6 – Effects of the proposed development on habitats and species.

Habitat or Species/species group	Effect
River	Potential indirect impacts through pollution.
Dry dwarf heath scrub	Impacts unlikely
Broad-leaved/ mixed woodland	Direct loss of small sections of habitat.
Common amphibians	Killing or injury during unmitigated works. Temporary or permanent loss of breeding and terrestrial habitat.
Badger	Killing or injury during unmitigated works, if present. Sett damage during unmitigated works (if present).

Habitat or Species/species group	Effect
Bats - roosts	Potential killing/injury during bridge repair works, triggering legislation. Potential killing/injury if trees with PRFs are impacted, triggering legislation.
Bats – commuting and foraging	Minimal direct loss of small sections of foraging habitat.
Birds	Destruction of nests during unmitigated vegetation clearance, triggering legislation. Minimal loss of suitable nesting habitat.
Fish	Potential indirect impacts through pollution.
Reptiles	Killing or injury during unmitigated works. Direct loss of small sections of habitat.
Hazel dormouse	Killing or injury during unmitigated works, if present
Hedgehog	Killing or injury during unmitigated works.
Invertebrates	Direct loss of small sections of habitat.
Otter	Killing or injury during unmitigated works. Potential indirect impacts through pollution.

5 RECOMMENDATIONS AND CONCLUSIONS

5.0 Providing that the requirements outlined within this report are implemented in full, the proposed development will be able to proceed and there will be no long-term effects on the designated sites, habitats and species discussed within this report.

5.1 Designated sites surrounding the site require further consideration/mitigation as follows:

- Taff and Rhondda Rivers SINC; and
- Pont-y-gwaith Hillside SINC;
- Blaenllechau Woodland SINC;
- Old Smokey Slopes SINC;
- ASNW areas on or adjacent to site.

5.2 Habitats within and adjacent to the site require mitigation and compensation as follows:

- River;
- Broadleaved woodland.

5.3 An AIA assessment will be required **For Phase 5** to assess impacts on identified mature trees and sections of ASNW. Following the AIA, a GLTA will be required to assess impacted trees for PRFs. If PRFs are identified on any trees to be impacted, further surveys may be required.

5.4 Mitigation measures during the demolition, construction and/or operation of the proposed development are required as follows:

- A CEMP will be required to detail pollution prevention controls to prevent impacts on the onsite SINCs and adjacent priority habitats.
- A PWMS will be required to detail measures to minimise impacts on designated sites, priority habitats, and protected species.

  A PWMS has currently been produced for **Phase 4 only** of the works (document ref: WWE22181 PWMS).

5.5 Priority habitats (as listed in section 5.2) will be avoided and protected where the design allows, following guidance detailed in the PWMS and CEMP. Where avoidance is not possible, compensation will be required (see Table 7).

5.6 Table 7 summarises the surveys, mitigation, and compensation requirements of the proposed development.

Table 7 – Requirements of the proposed development.

Species	Further information
Habitats	• A CEMP and PWMS are required to detail pollution prevention controls to prevent impacts on the onsite SINCs and adjacent priority habitats. **Broadleaved woodland** • The areas of woodland expected to be impacted are mainly secondary woodland of recent origin that are well represented in the local area and are of low ecological loss. Clearance of such areas will result in positive disturbance and opening up of canopy, with natural regeneration of habitats. New tree planting is not recommended for these areas. • An AIA is required for Phase 5 to assess and avoid impacts on identified areas of mature trees and ASNW. **River** • A CEMP and PWMS are required to detail pollution prevention controls to prevent impacts to the river.
Amphibians	• A PWMS is required to detail measures to minimise impacts on protected species.
Bats - roosts	• Night-time bat surveys are not recommended for Tylerstown north and south bridges (as per guidelines) due to health and safety risks. • Precautionary working methods will be required. This will include supervision by a suitably qualified Ecologist during repointing of mortar and endoscoping checks of crevices immediately before works. • No bridge repair works to be undertaken during bat hibernation season (November – February, inclusive) • An AIA assessment will be required for Phase 5 to assess impacts on identified mature trees and sections of ASNW. Following the AIA, a GLTA will be required to assess impacted trees for PRFs. If PRFs are identified on any trees to be impacted, further surveys may be required. • Further GLTA and aerial surveys may be required in relation to the Phase 4 attenuation feature when final plans are available. • Following PRF inspection of Phase 4 trees, compensation is required for the loss of nine PRF-I features. This will be provided through a mix of provision of bat boxes and, where appropriate, provision of man-made arboreal features (dead wood, hazard beams) or veteranisation of nearby trees, see section 5.10
Bats – commuting and foraging	• No night-time working. • No additional lighting.
Badger	• A PWMS is required to detail measures to minimise impacts on protected species.
Birds	• A PWMS is required to detail measures to minimise impacts on protected species. • Bird boxes should be included as enhancement, see section 5.9

Fish	• A CEMP is required to detail pollution prevention controls to prevent impacts on the onsite river and the species it supports.
Hazel dormouse	• A PWMS is required to detail measures to minimise impacts on protected species.
Hedgehog	• A PWMS is required to detail measures to minimise impacts on protected species.
Otter	• A PWMS is required to detail measures to minimise impacts on protected species.
Reptiles	• A PWMS is required to detail measures to minimise impacts on protected species.

Biodiversity enhancement

5.7 Local Authorities have a duty (known as the 'Biodiversity and resilience of ecosystems duty') under the Environment (Wales) Act 2016 to seek to maintain and enhance biodiversity in the exercise of their functions.

5.8 Where possible the existing onsite habitat will be retained to ensure that species are not adversely affected by the development. Native species of local provenance will be used for any new planting on the site to support The Action Plan for Pollinators in Wales, 2013 (http://gov.wales/docs/desh/publications/130723pollinator-action-plan-en.pdf).

5.9 Bird nesting boxes will be incorporated within adjacent woodland and structures (bridges). A range of types should be used in order to cover a variety of species. Many designs are available, and we would initially recommend the following types of boxes for this site:

- Dipper/ grey wagtail - https://www.nhbs.com/vivara-pro-woodstone-grey-wagtail-and-dipper-nest-box
- General bird boxes –

  https://www.nhbs.com/vivara-pro-barcelona-woodstone-open-nest-box

  (suitable for wrens, robins, pied and grey wagtails, song thrushes, blackbirds, etc.).

  https://www.nhbs.com/vivara-pro-seville-32mm-woodstone-nest-box

  (suitable for blue tits, tree sparrows, house sparrows, great tits, crested tits, nuthatches, coal tits, pied flycatchers etc).

5.10 At least nine bat boxes will be incorporated within the adjacent woodland, with a mix of suggested designs as follows:

- https://www.nhbs.com/improved-cavity-bat-box (suitable for both pipistrelle and Natterers' bat and for use of trees).
- https://www.nhbs.com/isabella-bat-box (suitable for a variety of bat species, including brown long eared bat, noctule bat, and Daubenton's bat.

5.11 Tree veteranisation is recommended to increase the amount of potential habitat in the area for bats and other species. It should not be used on trees that support or are developing value, nor where safety may become an issue. This must be undertaken in consultation a suitably-experienced arborist who understands tree physiology and can create features which are very close to natural features. Further guidance is given in Section 6.5.22 of UK Bat Mitigation Guidelines 2023. Photos of the removed PRF-I features from Phase 4 are included in Appendix X.

5.12 A Landscape and Ecology Management Plan will be produced to detail ongoing management of the site including:

- Opening areas of scrub, trees, and bracken.

- Cut and collect at flat areas to the sides of the path, along with section cutting of bracken to prevent encroachment.
- Removal of invasive species including Himalayan balsam to prevent spread of these species, especially in areas of heathland encroachment.

5.13 It is possible that management of these areas could be included as part of the RCTCBC's Living Landscape Project.

5.14 A section of neutral grassland at the south entrance of Phase 5 (TN#18, Appendix II) is a suitable area for enhancement and public engagement as a natural wildflower area with signage, benches, etc.

APPENDIX I: SURVEY METHODS

Extended Phase 1 Habitat Survey

- A field survey was undertaken on 25/01/2023. Previous surveys had been undertaken in 2019 and 2020.
- A further site walkover was undertaken of Phase 4 & 5 on 13/09/23.
- All habitats present within the site with the suitability to support rare, protected, or otherwise notable species of flora or fauna (together with direct signs) were noted.
- In the context of this report, rare, protected, or otherwise notable species of flora or fauna were those considered to meet any of the following criteria:
    - Species protected by UK or European legislation (see Appendix XIV)
    - 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 Lists)
    - The Wildlife and Countryside Act (1981) as amended, makes it an offence to release or allow to escape into the wild any animal, plant, or micro-organism not ordinarily resident in the UK (as listed in Schedule 9 of the Act). Plant species listed in Schedule 9 were searched for during the survey. However, many invasive species can be cryptic and therefore this survey does not provide a guarantee that an invasive species is not present and shouldn't be relied upon to rule out absence of an invasive species.
- An extended Phase 1 Habitat Plan was produced in QGIS, incorporating Target Notes used to highlight features of ecological interest (see Appendix II).

Badger - Visual survey

- Where access was possible, the site was systematically surveyed for evidence of badgers, in the form of:
    - Setts - comprising either single isolated holes or a series of holes, which may be link to each other underground;
    - Droppings and latrines - badgers deposit droppings in characteristic excavated pits, concentrations of which (latrine sites) are typically found at home range boundaries, field boundaries and around setts;
    - Paths - worn paths used by badger, often linked to setts or foraging grounds;
    - Scratching posts - typically at the base of tree trunks;
    - Snuffle holes - scrapes where badgers have searched for food;

- Day nests - bundles of grass and other vegetation where badgers may sleep above ground; and
- Hairs - usually found outside setts or caught under fencing.

Bats - Preliminary Roost Assessment (PRA)

- The structures (bridges) within the site were subject to a Preliminary Roost Assessment (PRA). This is an inspection survey, the purpose of which is to search for bats/evidence of bats and assess the likelihood of bats being present and the need for further survey and/or mitigation.
- A systematic search was made of the structure and the ground, especially below suitable access points where present. Such features include any holes, cracks and crevices leading to voids, particularly where there is clear access.
- Roosting locations in which bats have been recorded in bridges include:
  - Widening joints;
  - Expansion joints;
  - Gaps at the corner of buttresses;
  - Widening gaps (where the width of the bridge has increased, forming a gap between the original and new structure);
  - Cracks/crevices (usually over 100 mm deep) between stonework and brickwork where mortar has fallen out (locations include the underside of the bridge span and spandrel, parapet, and abutment walls);
  - Drainage pipes and ducts; and
  - Internal voids within box girder bridges.
- The inspection included searching for the following evidence of roosting bats:
  - Roosting bats within crevices or free hanging;
  - Bat corpses e.g. on the floor
  - Bat droppings beneath roosting features;
  - Feeding remains e.g. moth/butterfly Lepidoptera spp. wings and beetle Coleoptera spp. wing casings;
  - Scratch marks and characteristic staining from urine and/or fur oil beneath roosting features
  - ‘Clean’ gaps associated with bat roosts;
  - Bat-fly Nycteribiid spp. pupal cases;
  - Clean swept areas, which may indicate evidence has been removed.
- The following equipment was used for the bat survey:
  - Binoculars
  - Powerful torch to illuminate dark corners from the ground
  - A ladder

- Collection pots and labels for corpses and droppings
- Camera to record evidence and suitable roosting sites

Great crested newt - Habitat Suitability Index (HSI) Assessment

- Ponds within 500m of the site, where access was possible, were assessed for their suitability to sustain great crested newt using the HSI scoring system.
- This method seeks to quantify the suitability of a pond to support great crested newt by numerically assessing ten indices thought to influence their presence.
- The indices considered are location; pond area; water quality; percentage of shade; presence of waterfowl; presence of fish; number of ponds in the wider landscape; suitability of terrestrial habitat; and percentage of macrophyte cover.
- The HSI system is not a substitute for presence/absence surveys and is not intended to predict the occurrence of great crested newt. However, a correlation between the presence of great crested newts and a high HSI score is observed in ponds.

Great crested newt eDNA survey

- The presence of great crested newt within the ponds within the site was determined by eDNA sample analysis.
- The field sampling was carried by a great crested newt licence holder. Laboratory analysis was carried out by ADAS Biotechnology.
- The results were interpreted as follows:
  - Positive - the results indicate that great crested newt is present within the pond. Full survey methods are required to estimate the population size;
  - Negative - the result indicates that great crested newt is not within the pond. No further survey work is required; or
  - Inconclusive - indicates degradation or inhibition of the sample, therefore the lack of detection of great crested newt DNA is not conclusive evidence for determining the absence of the species. Further eDNA sampling or full surveys will be required.

Otter field survey

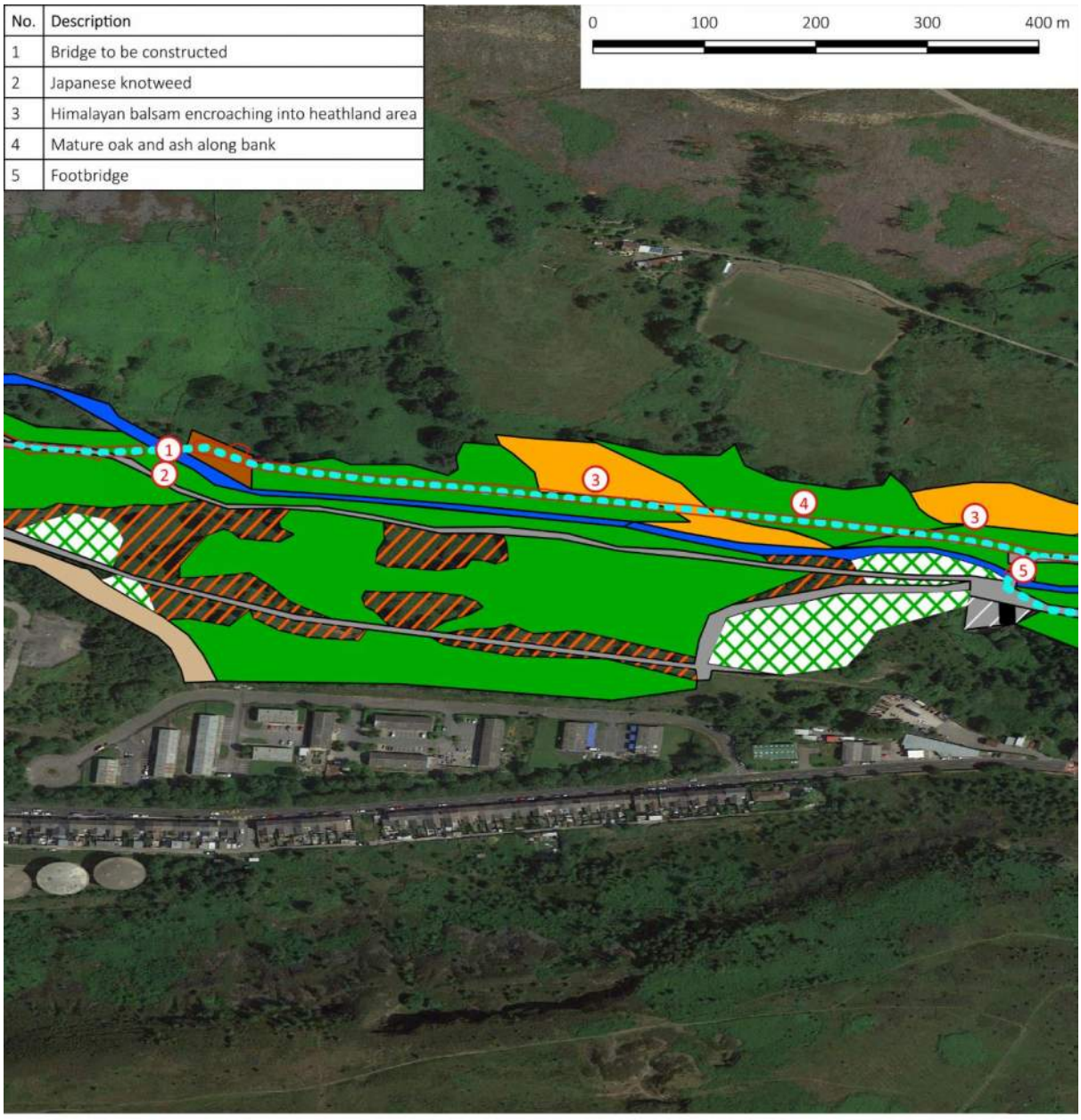
- The survey method used was modified from that used by Lenton et al., (1980) in the first national otter survey of England in 1977-79. For the first national survey, the process was halted as soon as otter signs were identified so the full stream section was only surveyed at sites where no signs were found. For the second (1984-86) and third (1991-94) surveys, the full stream section was usually surveyed within each area even if otter signs were found before this. The 2000-02 and 2009-10 surveys reverted to the 1977-79 methodology to reduce survey time. The approach from the second (1984-86) and third (1991-94) surveys was used in this instance.

- A systematic search of riparian habitat and man-made structures (culverts and bridges) was carried out along both banks by searching for otter field signs (spraints, footprints, hairs, slides, feeding signs, lying-up places, and holts).
- All otter field signs present were noted and mapped. Coordinates were recorded using a handheld GPS unit (Garmin GPSmap 62).
- Jones, T. (2004) Otter Survey of Wales 2002. Environment Agency, Bristol.
- Kruuk, H. (2006) Otters; Ecology, behaviour, and conservation. Oxford University Press.
- Lenton, E.J., Chanin, P.R.F. & Jefferies, D.J. (1980). Otter survey of England 1977-79. Nature Conservancy Council, London

Ground level tree assessment (GLTA)

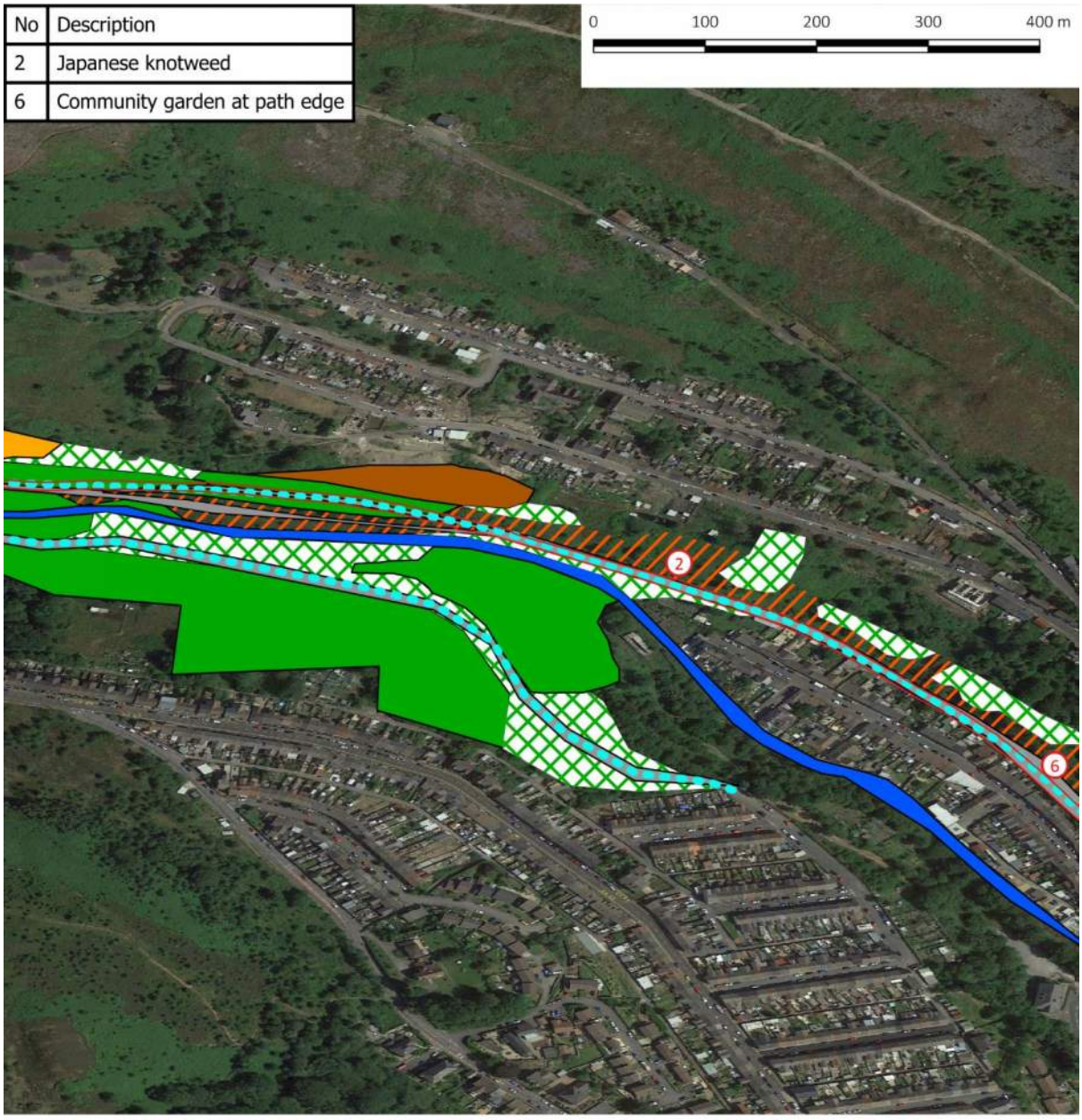
- A Ground Level Tree Assessment (GLTA) was undertaken in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th edn (Collins 2023), consisting of a detailed inspection of the exterior of trees from the ground in order to look for features that bats could use for roosting (PRFs)
- During the GLTA, information was collected including location (grid reference), tree species and age, tree reference (from AIA), description of PRFs (type, location, direction, height).
- Where PRFs were identified, the suitability of trees and PRFs were estimated for their potential to support roosting bats.
- Recommendations for further PRF inspections were noted (e.g. ground endoscope, climb, etc.)

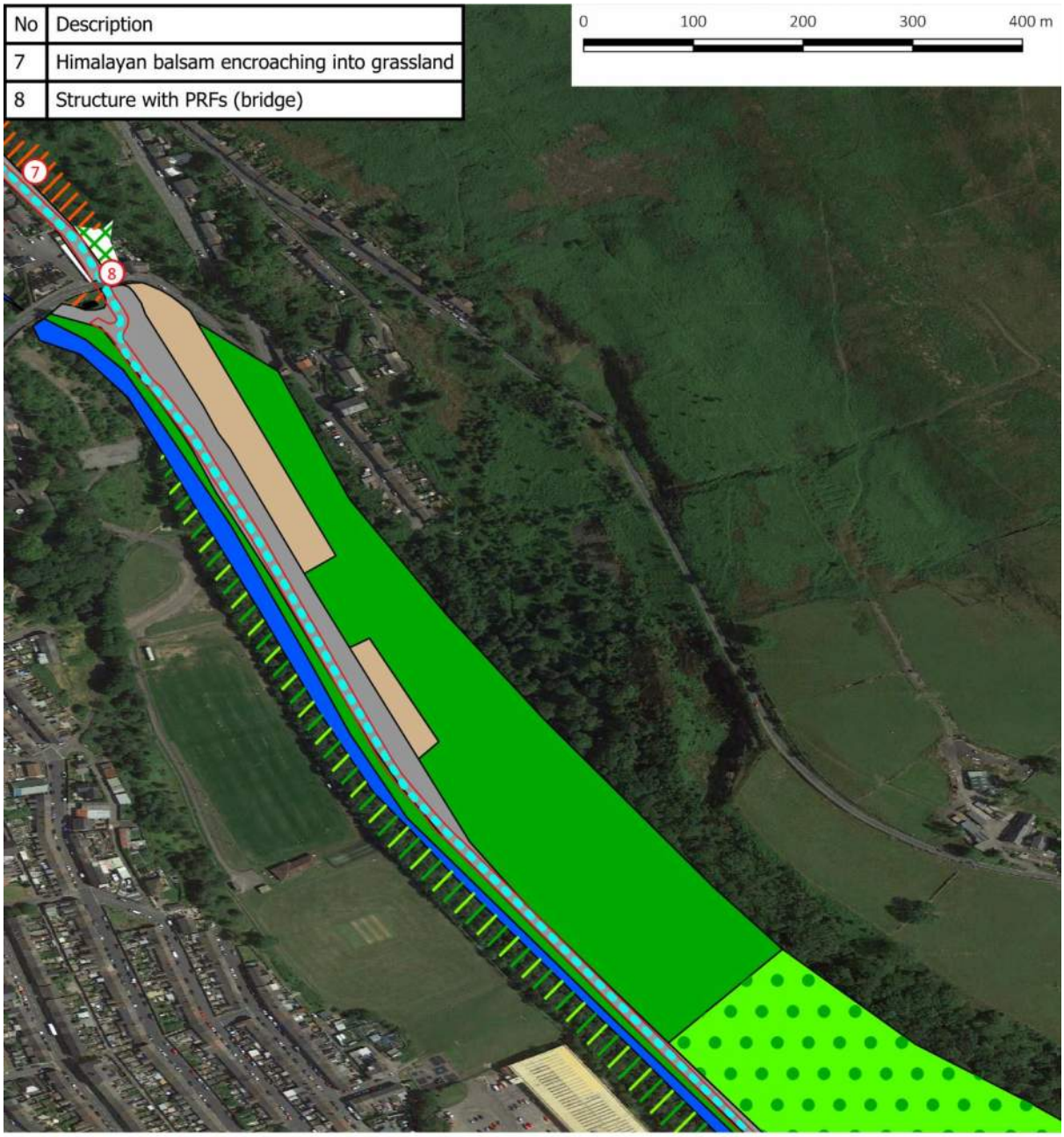
APPENDIX II: PEA PLAN



Key

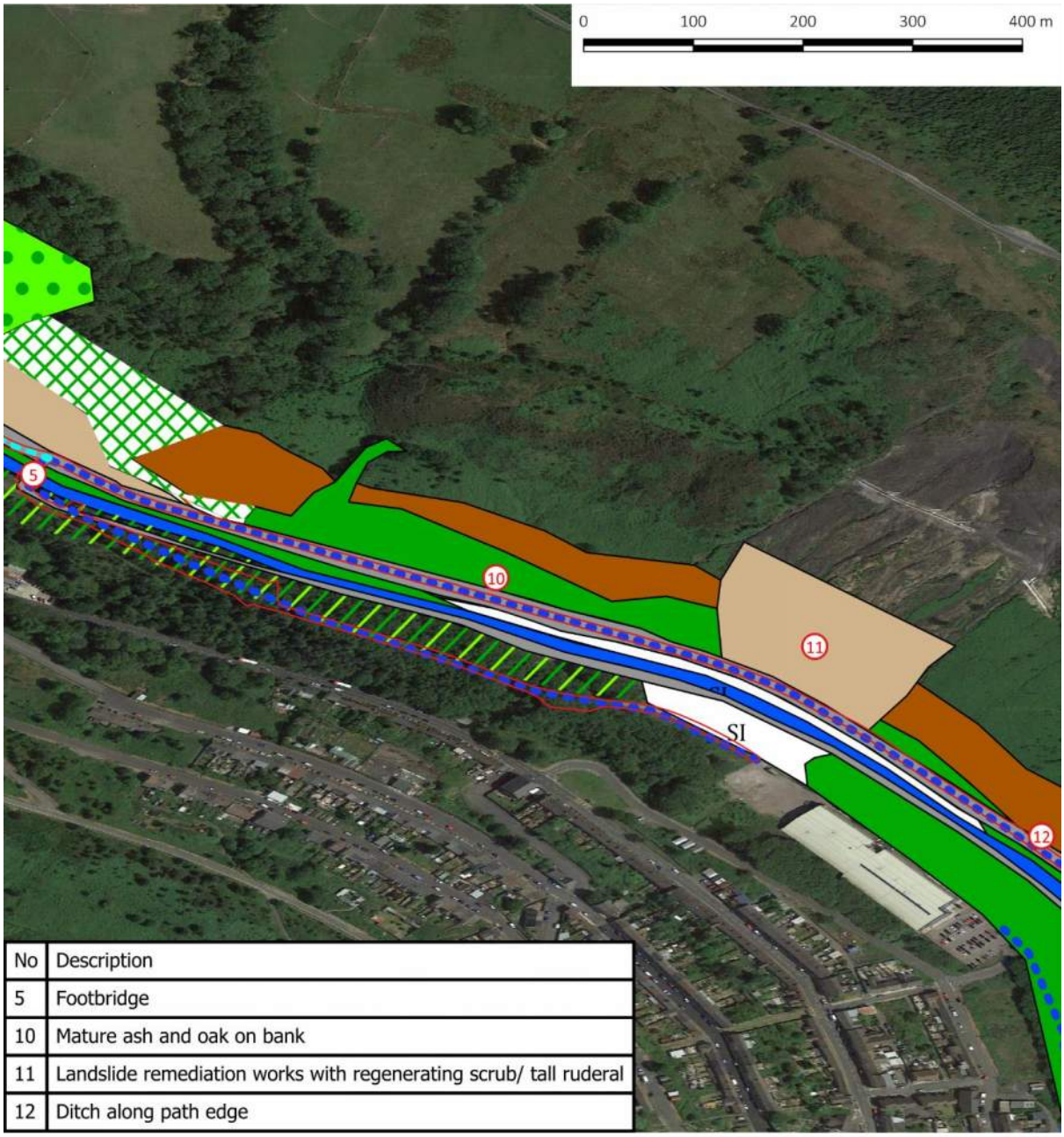
- Target notes
- Scheme outline
- Phase 4 route
- A.1.1 Broad-leaved woodland, semi-natural
- A.2.1 Scrub, dense/continuous
- B.1 Acid grassland
- D.1 Dry dwarf shrub heath
- J.1.3 Ephemeral/short perennial
- J.4 Bare ground
- Path
- A.1.1 Broad-leaved woodland, semi-natural
- A.2.1 Scrub, dense/continuous
- B.1 Acid grassland
- C.1 Bracken
- G.2 Running water
- J.3.6 Buildings
- Hard standing





Key

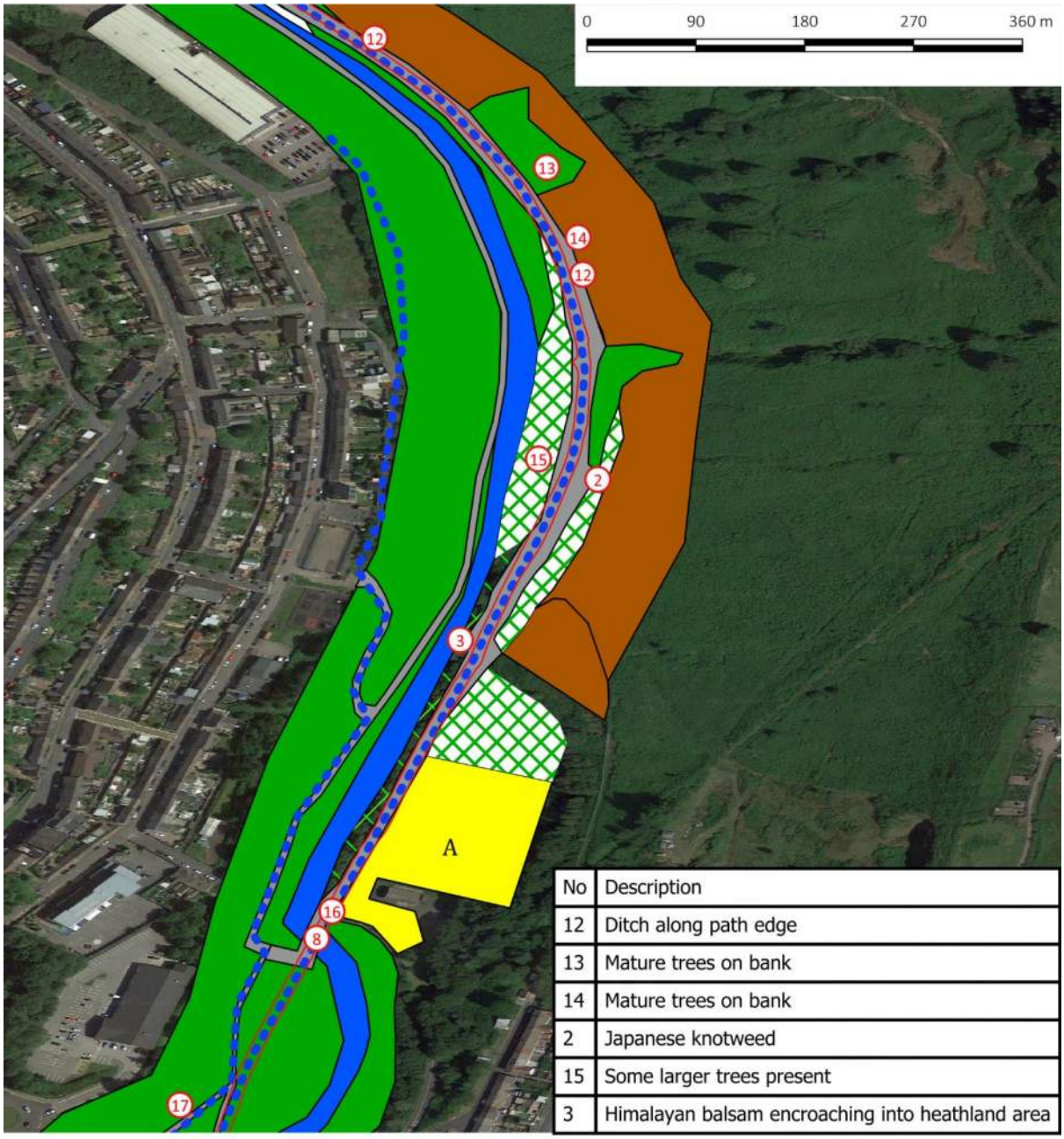
- Target notes
- Scheme outline
- Phase 4 route
- B.1 Acid grassland
- C.3.1 Tall ruderal
- J.1.3 Ephemeral/short perennial
- J.3.6 Buildings
- Path
- A.1.1 Broad-leaved woodland, semi-natural
- A.1.3 Mixed woodland, semi-natural
- A.1.3 Mixed woodland, plantation
- A.2.1 Scrub, dense/continuous
- G.2 Running water
- J.1.3 Ephemeral/short perennial
- J.4 Bare ground



No	Description
5	Footbridge
10	Mature ash and oak on bank
11	Landslide remediation works with regenerating scrub/ tall ruderal
12	Ditch along path edge

Key

- Target notes
- Scheme outline
- Phase 4 route
- Phase 5 route
- Path
- A.1.1 Broad-leaved woodland, semi-natural
- A.1.3 Mixed woodland, semi-natural
- A.1.3 Mixed woodland, plantation
- A.2.1 Scrub, dense/continuous
- SI B.6 Poor semi-improved grassland
- C.1 Bracken
- C.3.1 Tall ruderal
- G.2 Running water
- J.4 Bare ground



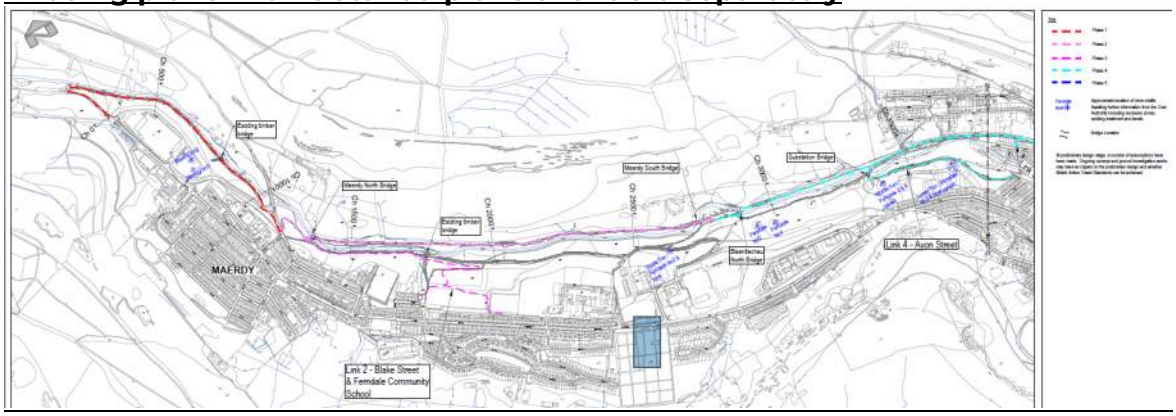
No	Description
12	Ditch along path edge
13	Mature trees on bank
14	Mature trees on bank
2	Japanese knotweed
15	Some larger trees present
3	Himalayan balsam encroaching into heathland area

Key

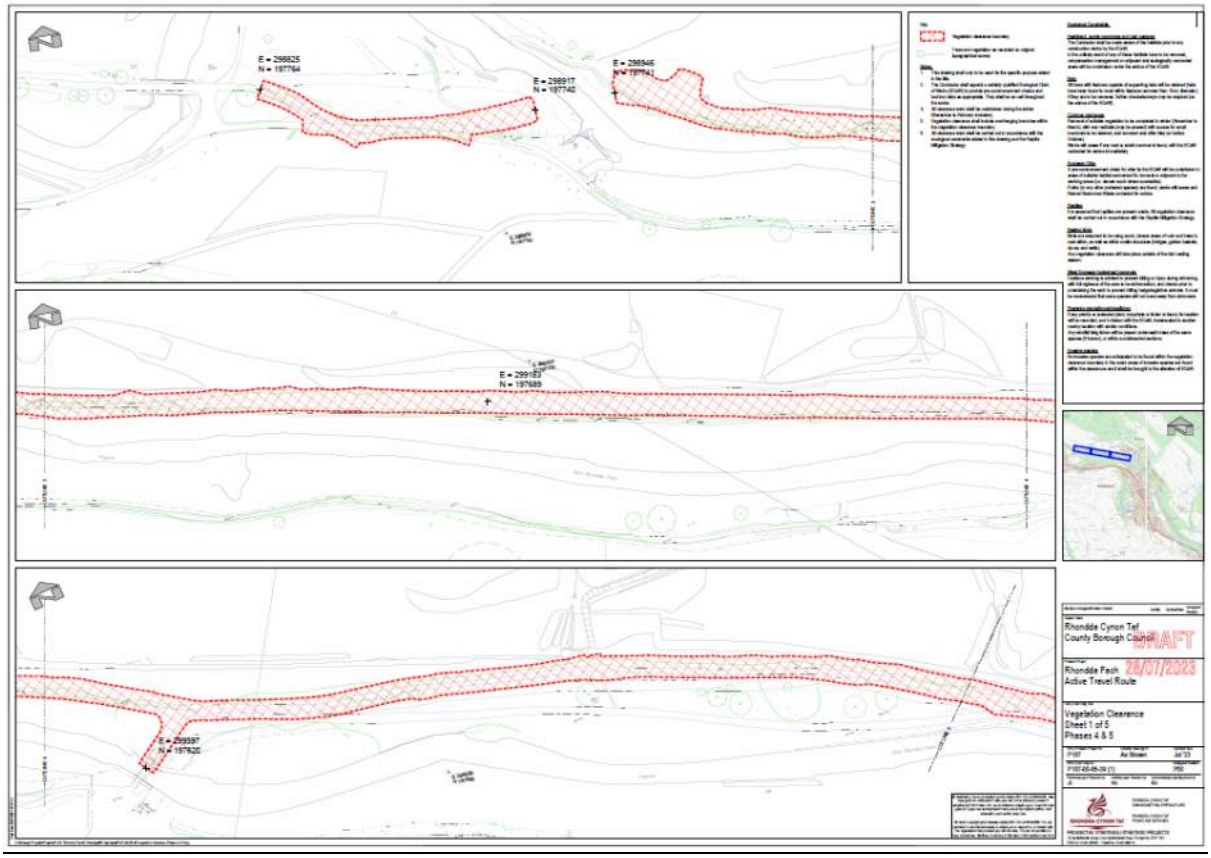
Target notes
Scheme outline
Phase 5 route
Path
A.1.1 Broad-leaved woodland, semi-natural
A.2.1 Scrub, dense/continuous
SI B.6 Poor semi-improved grassland
C.1 Bracken
G.2 Running water
A J.1.2 Amenity grassland
A.2.2 Scrub, dense/continuous

APPENDIX III: PROPOSED DEVELOPMENT PLAN

Phasing plans – full detailed plans available separately



Vegetation clearance for Phase 4 & 5

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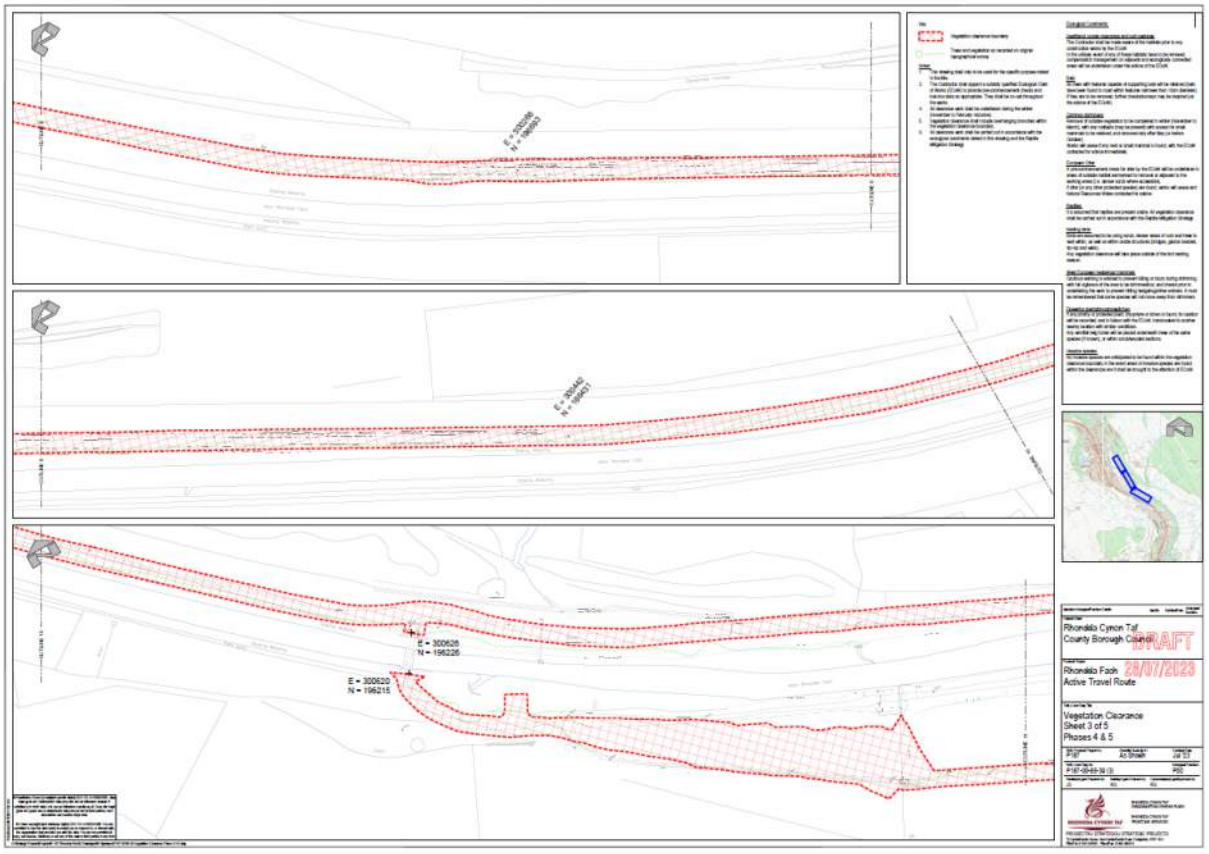
DRAFT
Rhondda Fach Active Travel Route
28/07/2023
Vegetation Clearance
Sheet 2 of 5
Phases 4 & 5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E = 300620
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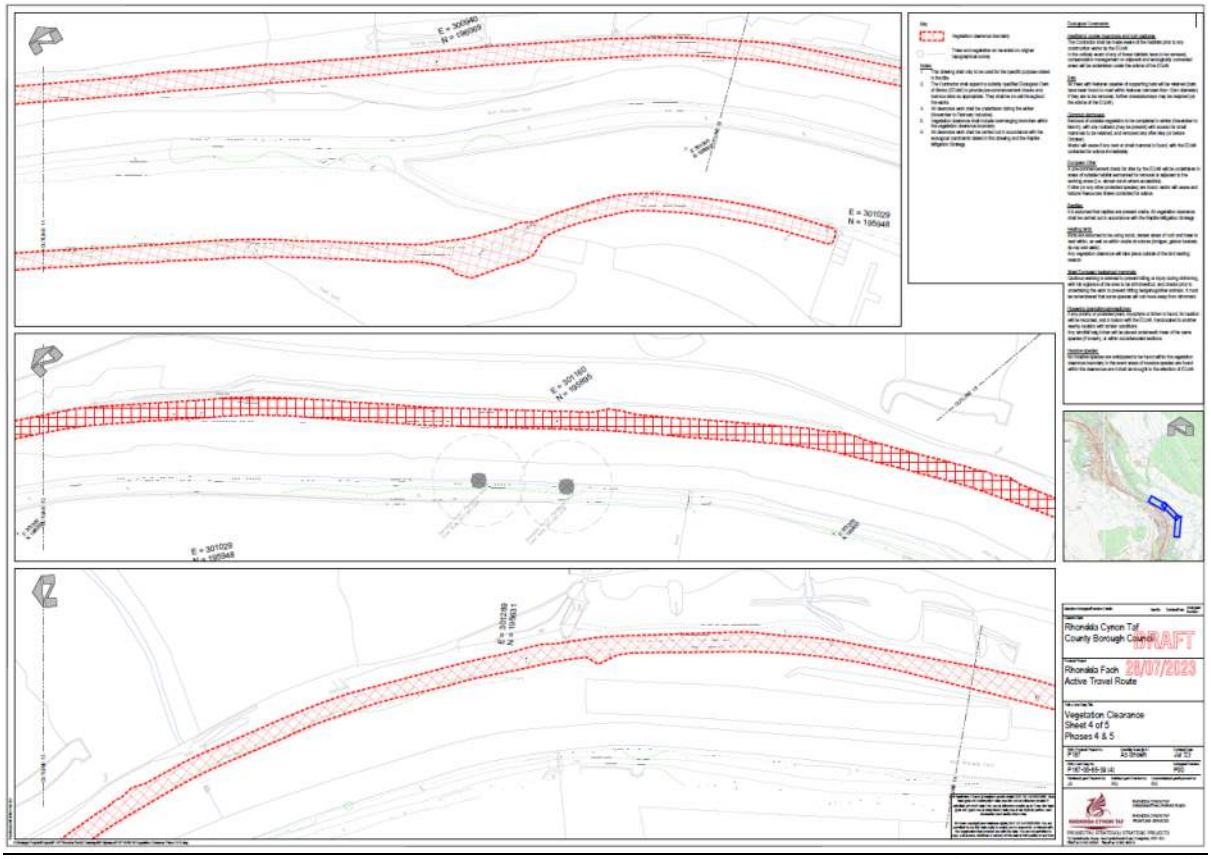
Rhondda Cynon Taf County Borough Council
DRAFT
Rhondda Fach Active Travel Route
28/07/2023
Vegetation Clearance
Sheet 3 of 5
Phases 4 & 5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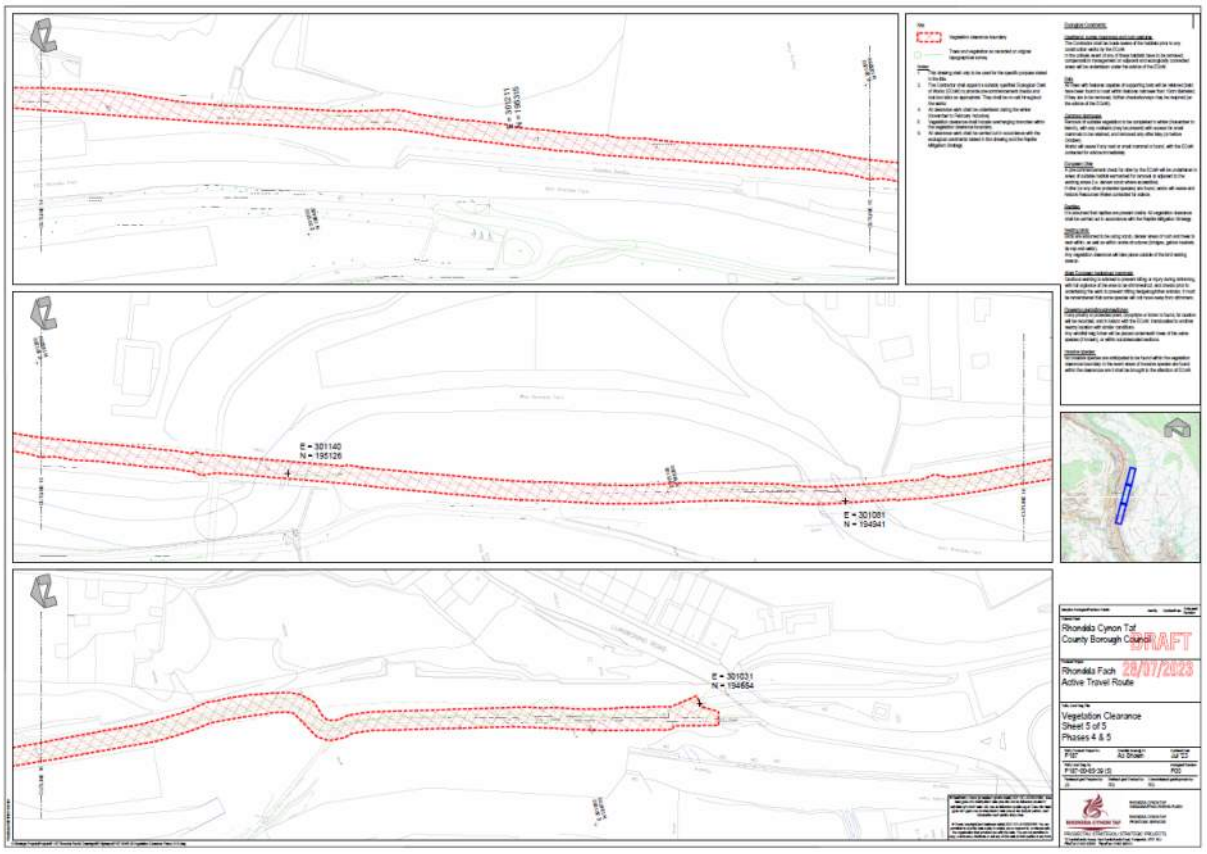
Rhondda Fach Active Travel Route
20/07/2023
Vegetation Clearance
Sheet 4 of 5
Phases 4 & 5


Rhondda Cynon Taf County Borough Council
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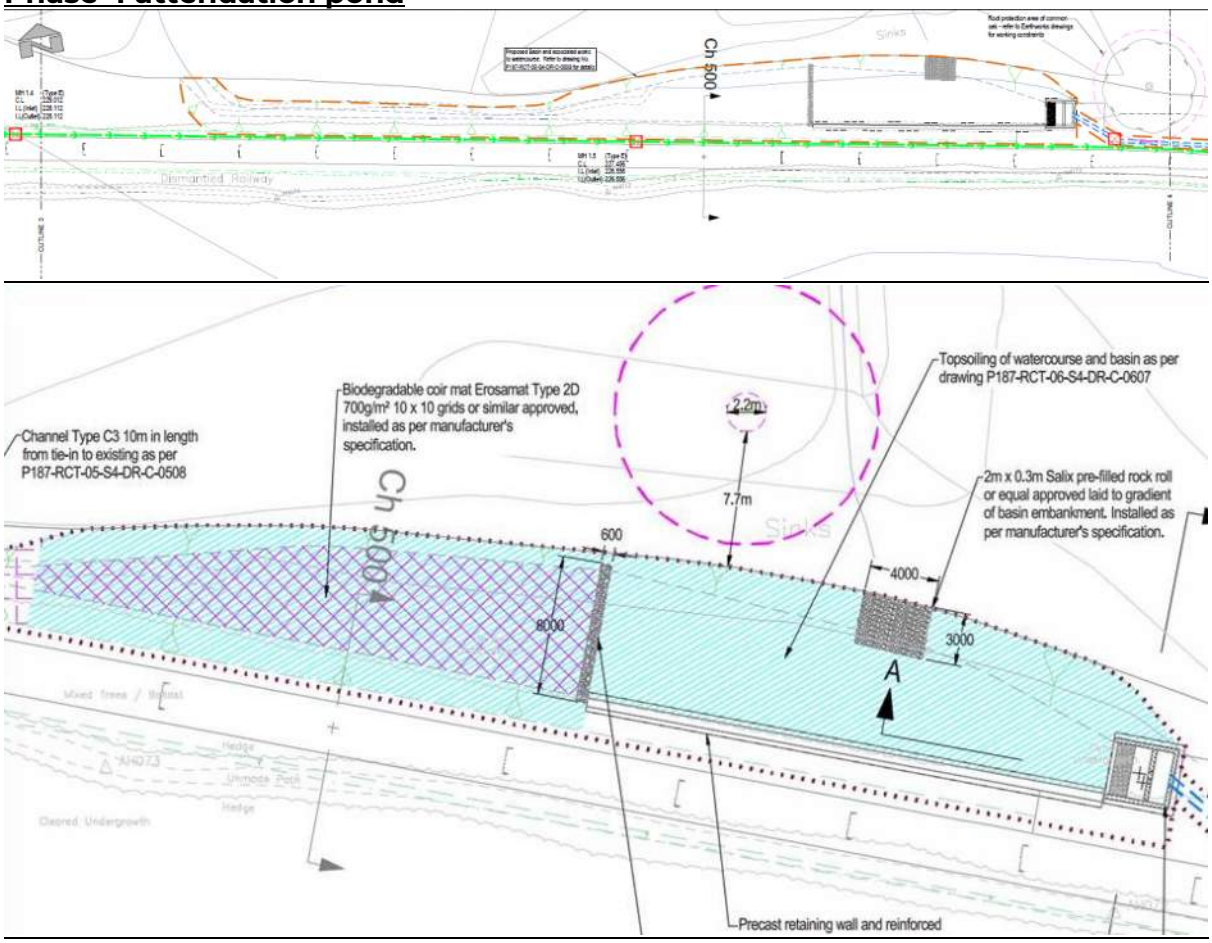
Rhondda Fach Active Travel Route
20/07/2023
Vegetation Clearance
Sheet 5 of 5
Phases 4 & 5

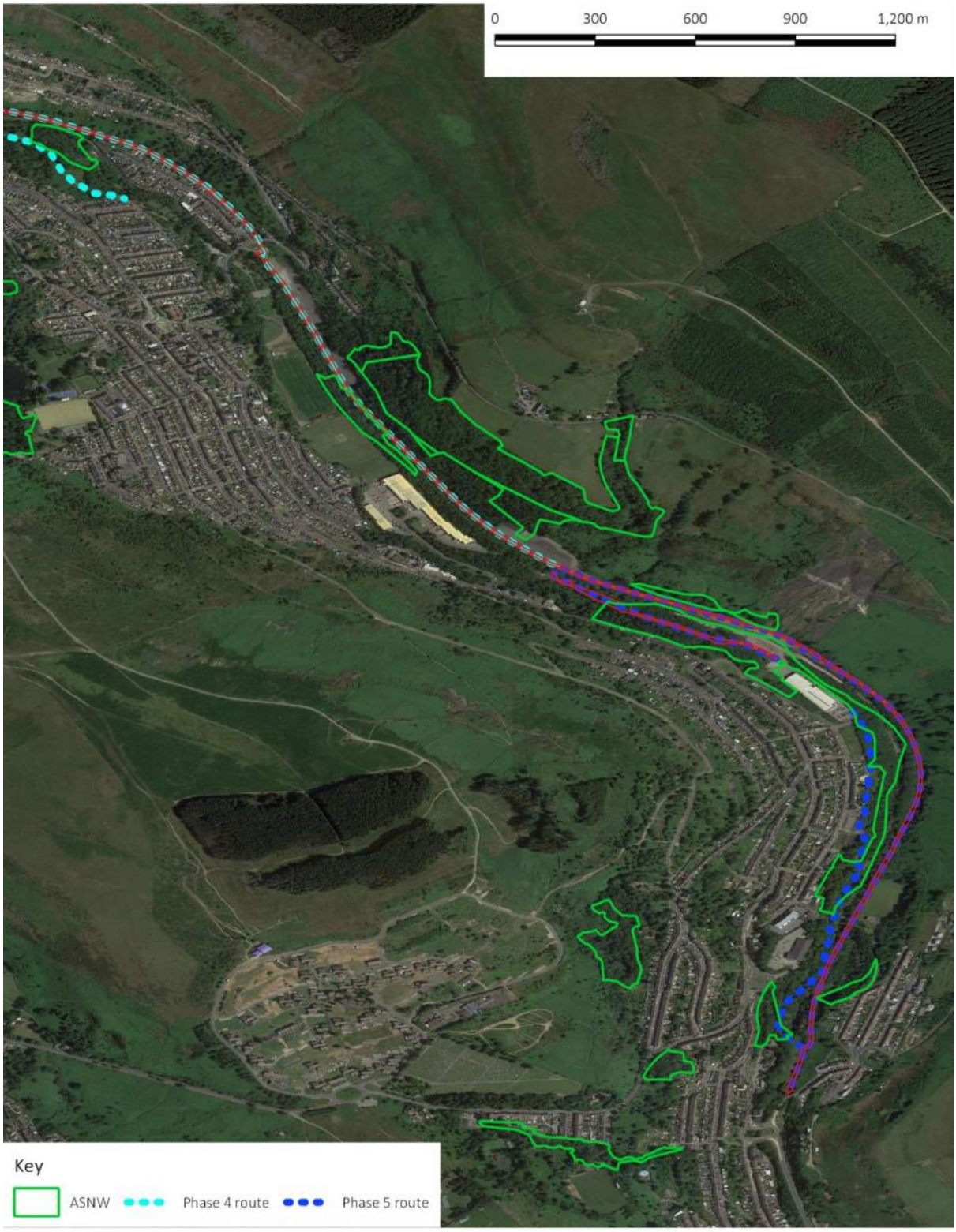
Phase 4 attenuation pond



APPENDIX IV: GLTA SUMMARY

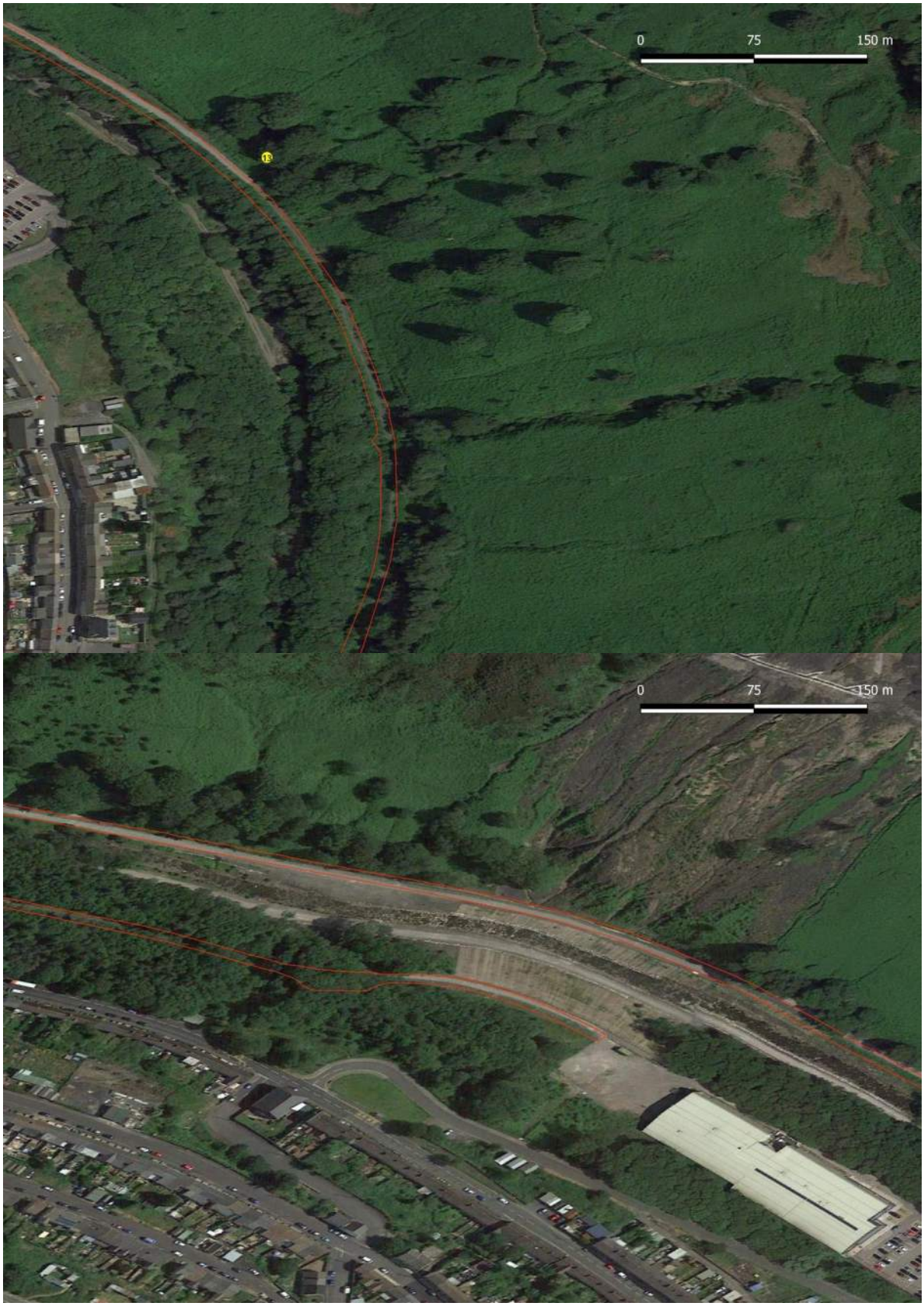
Tree reference	Arb reference (see AIA)	Notes	PRF inspection
T001	T1	Multiple splits in stems and broken branches	Gendo
T002	T13	Large hole and small hole at 4m, small hole at 1m and crack along a branch at 6m	Gendo
T003	T12	Multiple knot holes at 2m and 4m	Gendo
T004	W14	Dead hollow branches at 1m and 3m, vertical split at 4m	Gendo
T005	W14	Small knothole at 2m	Gendo
T006	W14	hollow trunk with hole at 1m	Gendo
T007	W14	Vertical splits in trunk at 4m	Gendo
T008	W14	Multi trunk group, multiple cracks in branches and trunk, hazard beam and split trunk 2-5 m	MEMP
T009	W14	Knothole in trunk at 2m	Gendo
T010	W14	Multiple knot holes, vertical crevices, deadwood at trunk/ branch join 3-5m north and east aspects	MEWP
T011	W14	Vertical cracks and deadwood at 3m	Gendo
T012	G16	Multi stem, vertical split on one stem north aspect at 5m, rot at branch base on one stem north aspect at 4m	MEWP
T013	G16	Several large vertical split on two branches at 5m, north and south aspects	MEWP
T014	G16	Vertical split at 4m south aspect main stem	MEWP
T015	G16	Partially dead with peeling bark in several places. Knothole at 4m	Gendo
T016	G16	Knothole at 5m east aspect, gaps around dead branch joins south aspect 4m	MEWP
T017	G16	Knothole 5m north aspect, vertical split 3m east aspect, knothole 3m north aspect	MEWP
T018	G16	Knot hole and vertical split 3/4m south and west aspect. vertical split in branch at 4m south aspect	MEWP
T019	G16	Vertical splits at base can be endoscoped. Vertical split on 3 branches north aspect 4 to 5m	MEWP
T020	G16	Large knot hole with gaps 4m west and south aspect	MEWP
T021	G16	Knot hole/ vertical split east aspect 4m	MEWP
T022	G16	Knot hole west aspect 5m	MEWP
T023	G16	Peeling bark and split branch	Gendo
T024	G16	Small knot hole west aspect 4m, dead branch with gaps west aspect 4.5m, vertical split south aspect 4m	MEWP
T025	G16	Large vertical splits in two branches west and south aspect 4/5 m	MEWP
T026	G16	Large knot hole south aspect 5m	MEWP
T027	G16	knotholes in main stem, south and west aspect 1 and 2m	Gendo
T028	T18	**Advised be retained for arb reasons.** Not possible to fully assess as offsite, but at least two large knot/woodpecker hole noted to south aspect	**Climb required if to be impacted**
T029	G19	Knot hole north aspect 4m	MEWP
T030	G19	Knothole at 3m	Gendo
T031	G19	Vertical split at 1-2m	Gendo
T032	G19	Vertical split in stem between 1-2m	Gendo
T033	G23	Large vertical crack in snapped branch at 2m	Gendo
T034	G23	Large vertical split between 1-3m	Gendo

APPENDIX V: AREAS DESIGNATED AS ASNW (PHASE 4 & 5)



APPENDIX VI: LOCATIONS OF BRIDGES FOR PROPOSED REPAIRS

APPENDIX VII: INVASIVE SPECIES MAP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48
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75
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50


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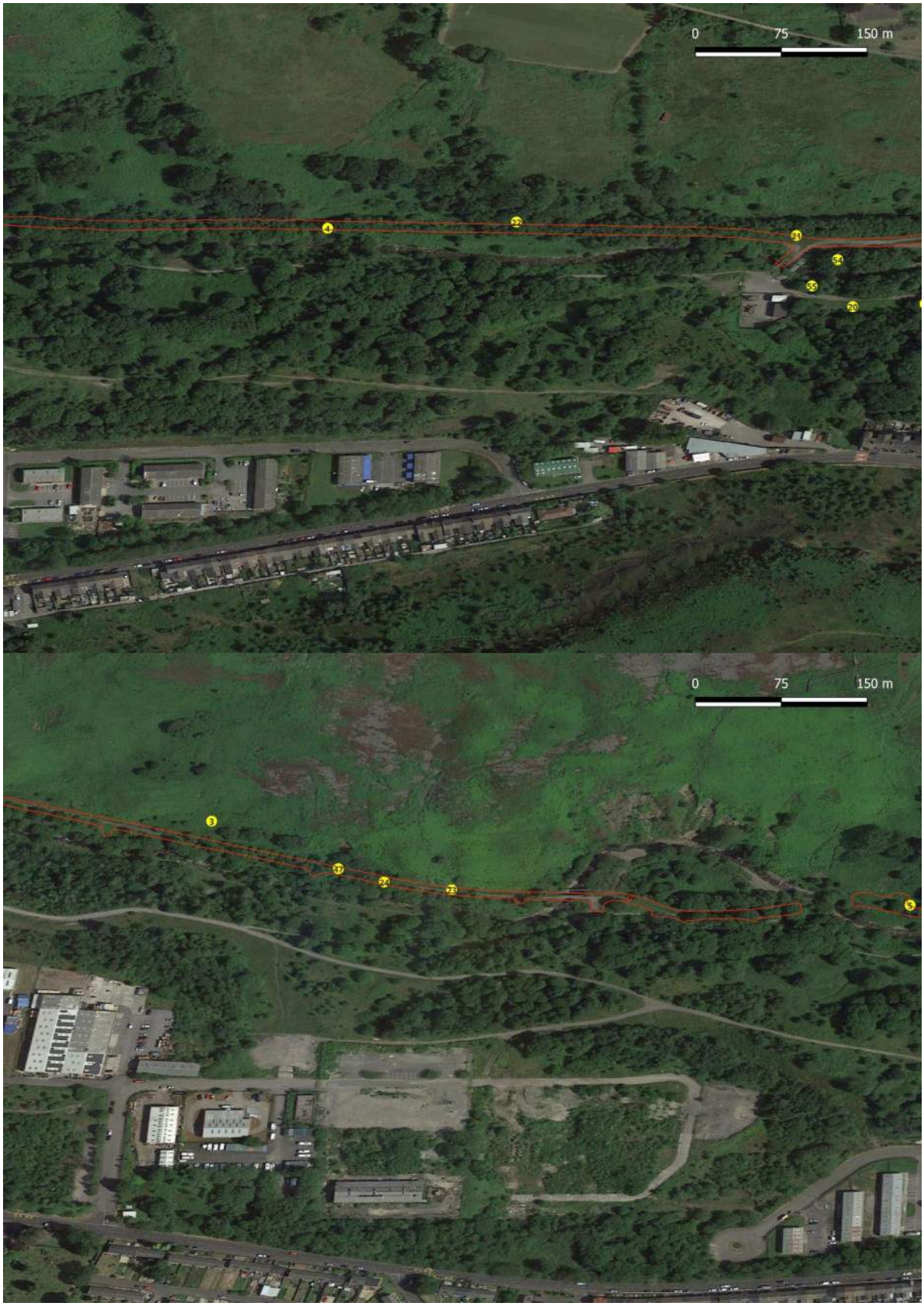
0
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150 m
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150 m

No	Species	Description
1	Himalayan balsam	HB along path through brambles
2	Himalayan balsam	large stand of HB approx 20m x 15m
3	Himalayan balsam	large stand of HB on bracken Bank approx 35 x 15m
4	Himalayan balsam	Bank behind woodland covered in HB
5	Himalayan balsam	fields of HB
6	Himalayan balsam	HB both sides of footpath up to Blake Street and down ro timber bridge
7	Himalayan balsam	HB adjacent to footpath heading all way down bank
8	Himalayan balsam	large stand of HB
9	Himalayan balsam	HB stand approx 45m x 5m dense is some areas, other shoots growing through bracken
10	Himalayan balsam	HB under trees in woodland
11	Himalayan balsam	HB scattered through woodland either side of footpath
12	Himalayan balsam	HB located adjacent to Tylorstown North Bridge
13	Himalayan balsam	Stand of HB
14	Rhodedendron	Rhododendron in woodland
15	Japanese knotweed	large stand of JK up the bank approx 30 x 40m. HB also observed on the bottom of the bank growing through the JK
15	Himalayan balsam	large stand of JK up the bank approx 30 x 40m. HB also observed on the bottom of the bank growing through the JK
16	Himalayan balsam	stand of HB approx 4m x 3m
17	Himalayan balsam	HB stand approx 3m x 3m and scattered through woodland
18	Himalayan balsam	large stands of HB in woodland
19	Himalayan balsam	HB scattered in woodland
20	Himalayan balsam	large stand of HB in front of woodland, around pylon and within woodland approximately 25m x10m
21	Himalayan balsam	HB stand on edge of woodland and footpath
22	Himalayan balsam	Woodland understorey choked with HB
23	Himalayan balsam	small stands of HB
24	Himalayan balsam	stand of HB by path approx 35m x 5m
25	Himalayan balsam	small shoots of HB scattered through bracken on bank
26	Himalayan balsam	large stand of HB behind pond on bank
27	Himalayan balsam	scattering of HB along bracken bank
28	Himalayan balsam	HB adjacent to footpath on bracken Bank approx 25m x 10m
29	Himalayan balsam	HB on both banks either side of footpath
30	Himalayan balsam	HB scattered in bracen adjacent to footpath and up bank
31	Himalayan balsam	HB on both sides of footpath
32	Himalayan balsam	HB on bracken Bank adjacent to footpath
33	Himalayan balsam	HB on both banks adjacent to footpath
34	Himalayan balsam	HB on bank sown towards river
35	Himalayan balsam	HB on bracken Bank adjacent to footpath
36	Himalayan balsam	large stand of HB on bracken bank
37	Himalayan balsam	HB on bank towards river
38	Himalayan balsam	HB adjacent to footpath and river approx 3m x 2m
39	Himalayan balsam	unable to survey fenced off with a locked gate. HB and montbretia present inside gated area
39	Montbretia	unable to survey fenced off with a locked gate. HB and montbretia present inside gated area
40	Himalayan balsam	HB adjacent to bridge approx 5m x 2m
41	Himalayan balsam	HB along stream either side of timber bridge
42	Himalayan balsam	HB scattered throughout woodland
43	Montbretia	monbretia on bank
44	Himalayan balsam	HB adjacent to footpath
45	Himalayan balsam	HB adjacent to footpath and woodland edge
46	Himalayan balsam	HB
47	Himalayan balsam	HB continues adjacent to footpath
48	Himalayan balsam	HB scattered in woodland and along ditch
49	Himalayan balsam	Stand of HB growing down river Bank approximately 5 x 2m
50	Himalayan balsam	HB scattered along river bank
51	Himalayan balsam	HB under bridge
52	Himalayan balsam	HB along bank
53	Himalayan balsam	HB along bank
54	Himalayan balsam	Stand of HB
55	Himalayan balsam	stand of HB
56	Himalayan balsam	Scattered HB
57	Himalayan balsam	Scattered HB

APPENDIX VIII: BADGER SURVEY RESULTS

No	Description
1	Bank too dense with bramble to fully check for badgers, no mammal paths though
6	Very steep bank, unable to fully inspect a 30m distance for badgers, no evidence of badgers where survey was possible
7	Bank covered in dense bramble and steep to climb, unable to fully inspect for badger. No mammal paths were observed

No	Description
3	Narrow mammal path observed in woodland most likely rabbit, no evidence of badger seen
8	Rabbit burrow
4	Narrow mammal path, no signs of badger, rabbit dropping observed
5	Narrow mammal run, no signs of badger, most likely rabbit
9	Dense scrub and steep river bank unsafe to fully inspect for badger, however no mammal paths were observed

APPENDIX IX: OTTER SURVEY RESULTS

No.	Description
1	Spraint and urine staining below Tylerstown north bridge. Likley several weeks old
2	Spraint and urine staining on rock in river, likley around a week old.

APPENDIX X: SURVEY PHOTOGRAPHS

Phase 4 photos

Figure 3 - North of Phase 4, location for new bridge.

Figure 4 - North section of Phase 4, existing path through woodland, with immature trees.

Figure 5 - Larger trees present close to existing path. Himalayan balsam scattered through woodland.

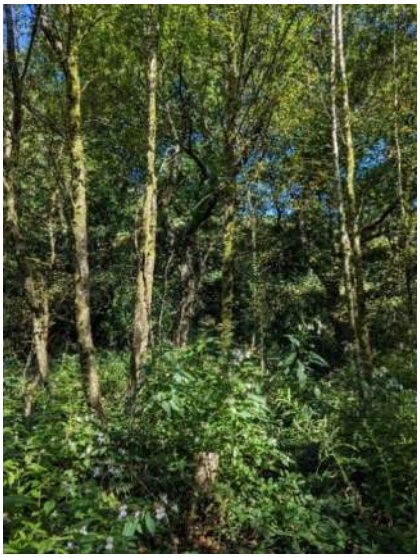

Figure 6 - Larger trees present close to existing path. Himalayan balsam scattered through woodland.

Figure 7 - Substation bridge.

Figure 8 - Open area adjacent to substation bridge.

Figure 9 - Japanese knotweed at path edges.

Figure 10 - Path behind Taff Street.

Figure 11 - Community garden rear of Taff Street.

Figure 12 - Bridge at Blaenllechau (not subject to works).

Figure 13 - Himalayan balsam encroaching hillside.

Figure 14 - More open section of existing path to south of Phase 4, with mature trees on bank.

PRF-I features removed during Phase 4 tree clearance

Figure 15 - PRF-I feature removed during Phase 4 tree clearance.

Figure 16- PRF-I feature removed during Phase 4 tree clearance.

Figure 17- PRF-I feature removed during Phase 4 tree clearance.

Figure 18- PRF-I feature removed during Phase 4 tree clearance.

Figure 19- PRF-I feature removed during Phase 4 tree clearance.

Figure 20- PRF-I feature removed during Phase 4 tree clearance.

Figure 21- PRF-I feature removed during Phase 4 tree clearance.

Figure 22- PRF-I feature removed during Phase 4 tree clearance.

Figure 23- PRF-I feature removed during Phase 4 tree clearance.

Phase 5 photos

Figure 24 - Leisure centre bridge.

Figure 25 - Gated fence at north of Phase 5.

Figure 26 - Mature trees along bank.

Figure 27 - Secondary woodland of recent origin at leisure centre access link.

Figure 28 - Narrower path section with semi mature trees.

Figure 29- Narrower path section with semi mature trees.

Figure 30 - Tylerstown north bridge.

Figure 31 - Tylerstown north bridge

Figure 32 - Path through woodland, semi mature trees with dense ivy coverage.

Figure 33 - Small stream alongside path edge, Himalayan balsam present.

Figure 34 - Tylerstown south bridge.

Figure 35 - Tylerstown south bridge.

Figure 36 - South of Phase 5, area of neutral grassland suitable for enhancement.

Figure 37 - Road bridge at entrance at south entrance to Phase 5.

APPENDIX XI: SPECIES LIST

To be submitted to the appropriate Local Records Centre (Save species list to word doc)

The Site Name:	Rhondda Fach Travel Route – Phase 4 & 5	**Provided by:**	Wildwood Ecology
Grid reference:	Linear route between SS 98793 97770 and ST 01022 94653	**Verified by:**	Jenny O'Neill

Common name	Scientific name (if known)	Grid reference (if known)
FLORA		
Alder	*Alnus glutinosa*	
Ash	*Fraxinus excelsior*	
Bilberry	*Vaccinium myrtillus*	
Birch sp	*Betula sp.*	
Blackthorn	*Prunus spinosa*	
Bracken	*Pteridium aquilinum*	
Bracken	*Pteridium aquilinum*	
Bramble	*Rubus fruticosus agg.*	
Broad leaved dock	*Rumex obtusifolius*	
Buddleia	*Buddleja davidii*	
Cleavers	*Galium aparine*	
Cocksfoot	*Dactylis glomerata*	
Common buttercup	*Ranunculus acris*	
Common knapweed	*Centaurea nigra*	
Common nettle	*Urtica dioica*	
Common vetch	*Vicia sativa subsp. segetalis*	
Compact rush	*Juncus conglomeratus*	
Creeping buttercup	*Ranunculus repens*	
Creeping cinquefoil	*Potentilla reptans*	
Crested dog's tail	*Cynosurus cristatus*	
Dandelion	*Taraxacum officinale agg.*	
Dog rose	*Rosa canina*	
Dogwood	*Cornus sanguinea*	
Elder	*Sambucus nigra*	
Evening primrose	*Oenothera sp.*	
Field maple	*Acer campestre*	
Field woodrush	*Luzula campestris*	
Foxglove	*Digitalis purpurea*	
Germander speedwell	*Veronica chamaedrys*	
Goat willow	*Salix caprea*	
Gorse	*Ulex europaeus*	
Greater plantain	*Plantago major*	
Greater willowherb	*Epilobium hirsutum*	
Groundsel	*Senecio vulgaris*	
Hard rush	*Juncus inflexus*	
Hawthorn	*Crataegus monogyna*	
Hazel	*Corylus avellana*	
Heather	*Calluna vulgaris*	
Herb Robert	*Geranium robertianum*	

Hogweed	*Heracleum sphondylium*	
Ivy	*Hedera helix*	
Jointed rush	*Juncus articulatus*	
Larch	*Larix spp.*	
Lesser trefoil	*Trifolium dubium*	
Leyland cypress	*Cupressus × leylandii*	
Maidenhair spleenwort	*Asplenium trichomanes*	
Marsh thistle	*Cirsium palustre*	
Meadow buttercup	*Ranunculus acris*	
Moss sp	*Bryophyta sp.*	
Mullein sp	*Verbascum sp.*	
Oak	*Quercus spp.*	
Opposite-leaved golden saxifrage	*Chrysosplenium oppositifolium*	
Pedunculate oak	*Quercus robur*	
Purple moor grass	*Molinia caerulea*	
Ragwort	*Senecio jacobaea*	
Rhododendron	*Rhododendron ponticum*	
Ribwort plantain	*Plantago lanceolata*	
Rosebay willowherb	*Chamerion angustifolium*	
Sedge sp	*Cyperaceae sp.*	
Silver birch	*Betula pendula*	
Soft rush	*Juncus effusus*	
Sow thistle	*Sonchus sp.*	
Spear thistle	*Cirsium vulgare*	
Spruce	*Picea sp.*	
Sycamore	*Acer pseudoplatanus*	
Water crowfoot sp	*Ranunculus sp.*	
White clover	*Trifolium repens*	
Willow sp	*Salices sp.*	
Willowherb sp	*Epilobium sp.*	
Yew	*Taxus baccata*	
FAUNA		
Blackbird	*Turdus merula*	
Blue tit	*Cyanistes caeruleus*	
Bullfinch	*Pyrrhula pyrrhula*	
Buzzard	*Buteo buteo*	
Carrion crow	*Corvus corone*	
Chaffinch	*Fringilla coelebs*	
Common frog	*Rana temporaria*	
Common toad	*Bufo bufo*	
Dipper	*Cinclus cinclus*	
Dunnock	*Prunella modularis*	
Fox	*Vulpes vulpes*	
Goldcrest	*Regulus regulus*	
Goldfinch	*Carduelis carduelis*	
Great tit	*Parus major*	
Green woodpecker	*Picus viridis*	
Greenfinch	*Chloris chloris*	
Grey wagtail	*Motacilla cinerea*	
Herring gull	*Larus argentatus*	
House sparrow	*Passer domesticus*	
Jackdaw	*Corvus monedula*	

Lesser black-backed gull	*Larus fuscus*	
Long tailed tit	*Aegithalos caudatus*	
Magpie	*Pica pica*	
Mallard	*Anas platyrhynchos*	
Mole	*Talpa europaea*	
Nuthatch	*Sitta europaea*	
Otter	*Lutra lutra*	*ST0116695068, ST0042796472*
Orange-tip butterfly	*Anthocharis cardamines*	
Palmate newt	*Lissotriton helveticus*	
Peacock butterfly	*Aglais io*	
Raven	*Corvus corax*	
Robin	*Erithacus rubecula*	
Song thrush	*Turdus philomelos*	
White-tailed bumblebee	*Bombus lucorum*	
Woodpigeon	*Columba palumbus*	
Wren	*Troglodytes troglodytes*	

APPENDIX XII: FULL METHODOLOGY

Field Surveys

All surveys followed good practice guidelines, with a detailed method for each survey presented within Appendix I.

Where the survey followed good practice guidelines, the detailed method is presented within Appendix I.

The surveys undertaken at the site can be seen in table 8.

Table 8 - Surveys undertaken.

Survey undertaken	Surveyor(s)	Date
Extended Phase 1 Habitat Survey	Jenny O'Neill Amy Williams Schwartz	25/01/2023
Phase 4 & 5 PEA walkover	Jenny O'Neill	13/09/2023
Badger - Visual survey	Julie Player	09/09/2023
Bats - Preliminary Roost Assessment	Jenny O'Neill	13/07/2023
Great crested newt - Habitat Suitability Index (HSI) Assessment	Jenny O'Neill	26/05/2023
Great crested newt - eDNA survey	Jenny O'Neill Hannah Humphries	08/06/2023
Invasive species walkover	Julie Player	24/05/2023
Otter	Jenny O'Neill Lee Jenkins	28/09/2023

Assessing ecological importance

The assessment of the importance of sites, habitats and species are made with reference to CIEEMs guidelines for EcIA, where possible. These guidelines provide consistency in the approach to evaluating the importance of the ecological features within a site and the effects or impacts a proposed development will have on them.

Firstly, the sites, habitats and species are assessed using a framework which assigns a level of geographical importance to ecological features. This framework incorporates a wide range of legislation and governmental guidance in assessing each feature's importance.

Next, the effects/likely effects of the proposed development are predicted, considering different stages and activities within the development process. These effects/likely effects are then assessed for their significance, based upon the importance of the site, habitat or species being assessed. The assessment of effects/likely effects significance is considered before and after the proposed mitigation to give an overall indication of significance.

The importance of specific ecological receptors (sites or habitats) is assigned according to their level of importance using the following terms:

- International Importance;

- UK Importance;
- National Importance (i.e. England/Northern Ireland/Scotland/Wales);
- Regional Importance;
- County Importance;
- District Importance (or Unitary Authority, City, or Borough);
- Local or Parish Importance; and
- Of Importance within the site (the zone of influence or a larger defined area).

- Contributor information

Table 9 outlines the relevant experience of each of the assessment contributors.

Table 9 – Contributor licences, skills, and experience.

Contributor	Licences	Skills and Experience
Amy Williams Schwartz Senior Ecologist	Bat GCN	Experienced in surveying for a wide range of protected species including great crested newt, reptiles, and bats within a consultancy and volunteer capacity. PhD in wildlife/road interactions in the UK, and experienced in performing academic ecological research projects, as well as species identification.
Lee Jenkins Subcontractor	Bat Otter	Highly experienced otter surveyor, founder South Wales otter Trust, SEWBReC county recorder (otters).
Jenny O'Neill Assistant Ecologist	Bat	Holds a 2:1 Honours degree in Ecology. Experience in undertaking habitat and protected species surveys including GCN, reptiles, bats, and hazel dormouse from 2018 onwards.
Julie Player Subcontractor	Bat Dormouse GCN	Experience freelance ecologist, holding dormouse, GCN, and bat licences in Wales and England.

- Limitations and assumptions

The desk study and field survey do not produce a comprehensive list of plants and animals as this is 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, their nature conservation importance and suitability to support protected or priority species.

Although the extended Phase 1 Habitat Survey falls outside the recommended seasonal period for botanical surveys, the evaluation and habitat descriptions (and hence the impacts and their significance), are considered to be accurate for the following reasons:

- Given the type of vegetation and habitats present, the valuation of the intrinsic interest is considered unlikely to change;

- Access was possible to all areas of the site and the vegetation was clearly visible; and
- Previous surveys carried out by others are both recent in origin and broadly consistent in terms of botanical interest.

No other limitations were encountered, or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the site's ecological importance has been made.

APPENDIX XIII: BIBLIOGRAPHY

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APPENDIX XIV: 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 – Edition 12 (2024) and Technical Advice Note 5 (2009)

Planning Policy Wales (Edition 12, February 2024) sets out the land use planning policies of the Welsh Government, integrating with the Environment (Wales) Act (2016). The advice contained within Planning Policy Wales (PPW) is supplemented for some subjects by Technical Advice Notes (TANs).

Section 6.2 of Planning Policy Wales (Edition 12) describes how elements of Green Infrastructure should be incorporated into new developments. Paragraph 6.2.12 states: "A green infrastructure statement should be submitted with all planning applications. This will be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal. In the case of minor development this will be a short description and should not be an onerous requirement for applicants. The green infrastructure statement will be an effective way of demonstrating positive multi-functional outcomes which are appropriate to the site in question and must be used for demonstrating how the step-wise approach (Paragraph 6.4.15) has been applied."

Section 6.4 of Planning Policy Wales outlines how all developments should achieve net benefit for biodiversity by implementing the DECCA framework. Paragraph 6.4.5 states: "Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species (not including non- native invasive species), locally or nationally and must work alongside nature and it must provide a net benefit for biodiversity and improve, or enable the improvement, of the resilience of ecosystems. A net benefit for biodiversity is the concept that development should leave biodiversity and the resilience of ecosystems in a significantly better state than before, through securing immediate and long-term, measurable and demonstrable benefit, primarily on or immediately adjacent to the site. The step-wise approach outlined below is the means of demonstrating the steps which have been taken towards securing a net benefit for biodiversity. In doing so, planning authorities must also take account of and promote the resilience of ecosystems, in particular the following attributes, known as the DECCA Framework:

- diversity between and within ecosystems;
- the extent or scale of ecosystems;
- the condition of ecosystems including their structure and functioning;
- the connections between and within ecosystems; and
- adaptability of ecosystems including their ability to adapt to, resist and recover from a range of pressures likely to be placed on them through climate change for example."

Section 6.4.15 outlines how the step-wise approach should applied to all new developments. This has been summarised below:

1. **Avoid**

"The first priority for planning authorities is to avoid damage to biodiversity in its widest sense (i.e. the variety of species and habitats and their abundance) and ecosystem functioning."

Proposals in statutory designated sites are, as a matter of principle, unacceptable and therefore must be excluded from site searches undertaken by developers. This principle also extends to those sites containing protected species and habitats which are irreplaceable and must be safeguarded."

2. **Minimise**

"When all locational, siting and design options for avoiding damage to biodiversity have been exhausted, applicants, in discussion with planning authorities, must seek to minimise the initial impact on biodiversity and ecosystems."

3. **Restore/mitigate**

"Where, after measures to minimise impact, biodiversity and ecosystems could still be damaged, or lost through residual impacts, the proposed development should mitigate that damage."

"Effective mitigation or restoration measures should be incorporated into the design proposal following the consideration of steps one and two above. Mitigation or restoration measures must be designed to address the specific negative effects by repairing damaged habitats and disturbed species. They should seek to restore in excess of like for like, accounting for disturbance and time lags for the recovery of habitat and species, and in every case, mitigation or restoration measures should seek to build ecosystem resilience within the site and where possible the wider area."

4. **Compensate onsite**

"When all the steps above have been exhausted, and where modifications, alternative sites, conditions or obligations are not sufficient to secure biodiversity outcomes further on-site/immediately proximate, as a last resort off-site compensation for unavoidable damage must be provided."

"Off-site compensation should normally take the form of habitat restoration, or habitat creation, or the provision of long-term management agreements to enhance existing habitats and deliver a net benefit for biodiversity."

"The Green Infrastructure Assessment should be used to identify suitable locations for securing off-site compensation."

"Where compensation for specific species is being sought, the focus should be on maintaining or enhancing the population of the species within its natural range."

"Any proposed compensation should be place based, take account of the Section 6 Duty (Biodiversity and Resilience of Ecosystems Duty), the DECCA framework and appropriate ecological advice from the local authority Ecologist, NRW or a suitably qualified ecologist."

5. **Compensate offsite**

"Each stage of the step-wise approach must be accompanied by a long term management plan of agreed and appropriate avoidance, minimisation,

mitigation/restoration and compensation measures alongside the agreed enhancement measures."

6. **Refuse planning permission**

"Finally, where the adverse effect on biodiversity and ecosystem resilience clearly outweighs other material considerations, the development should be refused."

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.

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.

Future Wales: The National Plan 2040

Policy 9 of Future Wales: The National Plan 2040 (Resilient Ecological Networks and Green Infrastructure) states: "In all cases, action towards securing the maintenance and enhancement of biodiversity (to provide a net benefit) the resilience of ecosystems and green infrastructure assets must be demonstrated as

part of development proposals through innovative, naturebased approaches to site planning and the design of the built environment."

Policy 30 of Future Wales: The National Plan 2040 (Green Belts in the South West) states: "The Welsh Government supports the use of Strategic Development Plans to identify and establish green belts to manage urban form and growth in the South West, particularly around Swansea Bay and Llanelli."

Policy 34 of Future Wales: The National Plan 2040 (Green Belts in the South East) states: "The Welsh Government requires the Strategic Development Plan to identify a green belt to the north of Cardiff, Newport and the eastern part of the region to manage urban form and growth. The Strategic Development Plan must consider the relationship of the green belts with the green belt in the West of England. Local Development Plans and development management decisions should not permit major development in the areas shown for consideration for green belts, except in very exceptional circumstances, until the need for green belts and their boundaries has been established by an adopted Strategic Development Plan."

Wellbeing of Future Generations (Wales) Act 2015

The Wellbeing of Future Generations (Wales) Act 2015 aims to create:

- A globally responsible Wales;
- A prosperous Wales;
- A resilient Wales;
- A healthier Wales;
- A more equal Wales;
- A Wales of cohesive communities; and
- A Wales of vibrant culture and thriving Welsh language.

As part of the National Well-being Indicator Framework, 46 wellbeing indicators have been identified including Healthy Ecosystems (43) and Biological Diversity (44). These indicators have been identified as central to all seven of the goals that the Wellbeing of Future Generations (2015) Wales Act has set out to achieve.
The Future Generations Commissioner for Wales acts as a guardian for the interests of future generations in Wales, supporting 48 public bodies in assuring sustainable development (defined as acting "in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs") in line with each of the seven wellbeing goals. The public bodies listed within the act include Natural Resources Wales, Local Authorities and National Park Authorities. Therefore, planning proposals submitted to the aforementioned parties should be in aligned with the goals listed within the Wellbeing of Future Generations (Wales) Act 2015, and should aim to have a positive impact on the indicators identified with the National Well-being Indicators Framework.

<u>Legislation and biodiversity</u>

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 2017 (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 Environment (Wales) Act 2016; The Countryside and Rights of Way Act 2000; 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.

Environment (Wales) Act 2016

Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty.

Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section and encourage others to take such steps.

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 (as amended) (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 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (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 2017 (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[2] a Badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett[3] (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.

Bats

All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017 (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

[2] 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

[3] 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.

- 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 England, 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 2017 (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 hazel dormouse is classed as a European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017 (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 a European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017 (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 Resource 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 must 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 2017 (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.

