

Wales and Borders Rail Service and South Wales Metro

TRAN01 - CVL Transformation

Bat Tree Report: RS1MER Trees | P03.1

TRAN01-KAW-R1-MER-RPT-Y-EN-000072



Document Control Sheet

Project Name: Wales and Borders Rail Service and South Wales Metro	
Project Number:	TRAN01 - CVL Transformation
Report Title:	Bat Tree Report: RS1MER
Report Number:	TRAN01-KAW-R1-MER-RPT-Y-EN-000072
Plan of Work Stage	E
ELR	CAM
Mileage From	16m 26ch
Mileage To	24m 44ch

Issue Record

Issue Status/Amendment	Prepared	Reviewed	Approved
P03.1 S0 Initial non-contractual code	Name: --- Signature: Date: ---	Name: --- Signature: Date: ---	Name: --- Signature: Date: ---
A02 D3 Fit for Contractor Design V.1	Name: OS Signature: Date: 25/10/21	Name: AB Signature: Date: 25/10/21	Name: ZCM Signature: Date: 25/10/21
A01 D3 Fit for Contractor Design V.1.	Name: OS Signature: Date: 17/06/21	Name: AB Signature: Date: 15/10/21	Name: ZCM Signature: Date: 15/10/21

Executive Summary

Purpose	This report summarises the trees that require works along the Abercynon to Merthyr Tydfil (RS1MER) route section to enable the Core Valley Line (CVL) transformation. It details the assessment of these trees to support bat roosts and further emergence / re-entry surveys to determine presence / likely absence. Any trees that require European Protected Species Licensing are also detailed.
Methods	- A number of trees were previously assessed for their potential to support bat roosts during a phase 1 habitat survey undertaken by Ecus and Mott MacDonald in 2017. This assessment followed the Bat Conservation Trust (BCT) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition); - Further update assessments were undertaken in 2019, 2020 and 2021 by Amey following the above best practice guidance; - Where trees were assessed as having moderate or high bat roost potential, dusk emergence and dawn re-entry surveys were undertaken; - All surveys were carried out following BCT guidance (Collins, 2016). Surveys were carried out using bat detectors (Batloggers and Echo Meter Touch) to identify the bats species observed (if any) and to record any behaviour. The recordings were then analysed through Analook software; and - Where bat roosts were identified, they were evaluated for conservation status following the guidance set out within Natural England's Bat Mitigation Guidelines (2004).
Conclusions	- A total of 31 trees along the route section were recorded as having potential to support bat roosts. - Possession timings did not allow Amey Ecologists to complete dusk emergence surveys on the trees recorded as having moderate potential to support bat roosts in 2021. The surveys which were undertaken are considered invalid and any works on these trees should be completed under licence, see licensing recommendations below. - One tree; MER 10 was subject to further dusk emergence / dawn re-entry surveys in May 2022, no bats were recorded emerging from or re-entering the tree during these surveys. As such, no further recommendations are given with regards to Tree MER 10.
Recommendations	- Where possible the clearance of trees along the RS1MER route section should be minimised through the design process. - Should clearance of any trees assessed as moderate or high suitability to support roosting bats be required that have not been subject to further survey, a bat licence will be required from NRW in order to disturb, damage, destroy or modify these trees. As these trees have not been surveyed this licence should follow the methodology used on RS0R2P and RS1ABD route sections (Bat Development Licence for Tree Removal R2P/ABD (Document Reference: TRAN01-KAW-ZZ-CVL-KPC-Y-EN-000023); Licence Number S088367/2). - It is recommended that the trees with low bat roosting potential should be felled under a precautionary method statement under the supervision of an ecologist. This will involve careful stripping of the ivy and bark and sectional felling with hand tools so that the ecologist can inspect all areas of peeling bark for presence of bats prior to the wood being chipped. If additional PRFs are found, then the ecologist will advise how to safely remove these as necessary. If bats are discovered during felling, then the ecologist will stop works to the tree and contact Natural Resources Wales (NRW) for advice as a licence and/or mitigation would likely be required.



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Confidentiality of Bat Data

The report contains sensitive information on the location of bat roosts and should be treated as confidential. Should this report be released into the public domain, sensitive data should be redacted.

1. Introduction

This document reports on the findings of a bat (*Chiroptera* sp.) surveys of along the Abercynon to Merthyr Tydfil route section. This route section forms part of the Core Valley Lines (CVL) which is being upgraded as part of the wider South Wales Metro project.

An Ecological Impact Assessment (EcIA) report (Mott MacDonald Ltd, 2018), detailed the findings of an initial desk study and ground truthing walkover survey which highlighted a number of habitats as suitable to support bats for foraging and commuting along with trees and structures providing roosting opportunities.

This document updates these surveys, specifically targeting the trees that require works to enable the CVL transformation.

2. Background

2.1 Site Description

The RS1MER route section begins at Abercynon Station and continues north, alongside the River Taff, to Merthyr Tydfil Station, refer to Table 1 below. The RS1MER route section lies within the Merthyr Valley, between the Cynon and Rhymney Valleys, passing through a mix of rural, urban and industrial environments where six rail stations are present; Abercynon, Quakers Yard, Merthyr Vale, Troed-Y-Rhiw, Pentre-Bach and Merthyr Tydfil.

Table 1: Route Section Details

ELR	Route Section	Grid Reference	Latitude and Longitude
CAM	RS1MER (Abercynon to Merthyr Tydfil)	ST 08099 94631 to SO 04996 06013	51.642939, -3.3295234 to 51.744736, -3.3774531

2.2 Purpose of this Report

This report aims to provide an assessment of the trees within this route section and their potential to support bat roosts. Along with this, it aims to classify bat roosts where further surveys were undertaken and assess the potential impacts of the proposed development on these roosts. Recommendations for mitigation, licensing and precautionary methods of working are also made where considered necessary.

2.3 Proposed CVL Transformation

The CVL transformation will involve upgrades across the network which will involve but is not limited to:

- Track re-doubling sites;
- Track lowering sites;
- Numerous line speed improvements;
- New rolling stock maintenance depot;
- Smart overhead line electrification;
- New platforms;
- New stations;
- New station footbridges;
- Station Accessibility schemes;
- New “tram-train” style Metro Vehicles with battery-running capability; and
- New mainline “Tri-Mode” trains capable of 25kV, battery and diesel operation.

Implementation of the infrastructure works required to deliver this transformation is scheduled for completion by 2023. These works are imperative as the CVL are predicted for 76% growth by 2023 but there is already significant overcrowding and old rolling stock.

3. Ecology and Legislation

3.1 Ecology

Some species of bat are only as long and wide as a human thumb, so can crawl into tiny crack and crevices. They have a small body covered in brown or grey fur on their backs and are usually paler beneath, with comparatively large wings that are folded against their body while roosting. Almost any suitable crevice greater than 50mm deep and 12mm wide can be used as a roost. Bat signs at roosts most commonly take the form of droppings, staining, scratching or food remains.

Bats breed between May and July and hibernate between November and March. They tend to move between several roosts throughout the year to suit the environmental conditions (such as temperature and seasonal foraging resource). As nocturnal creatures they are sensitive to noise and light.

Trees such as oak, beech and ash are particularly suitable for bats, but any woodland or tree has potential for a bat roost – especially if it has hollows in the trunk or branches, woodpecker holes, loose bark, cracks, splits, thick ivy or root cavities. Almost any building, tree or suitable built structure can be considered as having some potential to support bat roosts at some time of the year.

3.2 Legislation

Bats are fully protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy any structure or place used for shelter or protection by a bat (even if bats are not present in the roost);
- Intentionally or recklessly obstruct access to a structure or place which it uses for that purpose; or
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.

To undertake activities that would otherwise be an offence under the above legislation, a European Protected Species Licence (EPSL) must be applied for from the statutory authority; in this case Natural Resources Wales (NRW).

4. Methods

4.1 Desk Study

A desk study was undertaken and reported within the EcIA (Mott MacDonald, 2018). This provided a review of existing information about the habitats and protected species present within the site boundary and Zone of Influence (ZoI) of the proposed CVL Transformation. This included a data search request to the South East Wales Biodiversity Records Centre (SEWBReC) for bat species present within 2km of the CVL from 2007 to 2017 and a search for statutory designated sites within 10km.

Further data was requested from SEWBReC by Amey in June 2022 for all bat records submitted over the previous 10 years (2012-2022) within 2km of the RS1MER route section.

4.2 Field Survey

4.2.1 Preliminary Ground Level Tree Assessment

The PGLRA for trees were carried out by Amey Ecologists Kathryn Loat BSc (Hons) MSc MCIEEM, Daniella Ord-Hume BSc (Hons) and Stephanie Cox BSc (hons) ACIEEM between 4 January 2021 and 7 January 2021 in accordance with best practice guidance set out in 'Bat Surveys - Good Practice Guidelines' (Collins, 2016). This survey assesses the potential of a structure or tree to support a bat roost. This involves a systematic search of a structure for potential or actual bat access points and/or any evidence of bats. Within trees, this involves an external inspection of Potential Roost Features (PRFs) and/or any evidence of bats. PRFs that may be used by bats include:

- Woodpecker holes;
- Rot holes;
- Hazard beams;
- Partially detached bark;
- Knot holes arising from naturally shed branches;
- Other holes or cavities, including butt rots;
- Double leaders forming compression forks;
- Gaps between overlapping stems or branches;
- Cankers; and
- Partially detached ivy with stem diameter in excess of 50mm.

Signs of a bat roost, besides the actual presence of bats includes:

- Bat droppings;
- Odour;
- Audible squeaking at dusk or in warm weather; and
- Staining.

Using the above, the trees or structures were then evaluated and assigned as negligible, low, moderate or high suitability to support roosting bats as per the BCT guidelines (Collins, 2016), refer to Table 2 below.

Table 2: BCT Guidelines for Assessing the Potential Suitability of Trees or Structures for Roosting Bats.

Suitability	Description of Roosting Habitats
Negligible	Negligible potential roost sites within a tree or structure likely to be used by roosting bats.
Low	A tree or structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions, and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A tree or structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A tree or structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

4.2.2 Dusk Emergence / Dawn Re-entry Surveys

Following the above scoping exercise, a total of 11 trees were subject to dusk emergence / dawn re-entry surveys. Details of the trees surveyed and weather conditions are detailed in Table 3 below:

Table 3: Dusk Emergence / Dawn Re-entry Survey Details and Conditions

Tree Number	Survey Conditions							
	Date	Type	Surveyors	Sunset/Sunrise (BST)	Start/End Time	Min Temp (°C)	Rain	Wind (Beaufort Scale)
MER 1	13/06/2021	Dusk	JH, MC	04:55 / 21:30	21:17 / 23:02*	18	None	1
	18/07/2021	Dusk	AB, SC	05:17 / 21:20	21:31 / 22:51*	21	None	0
MER 2	13/06/2021	Dusk	AB, RG	04:55 / 21:30	21:32 / 23:02*	17	None	1
	18/07/2021	Dusk	DOH	05:17 / 21:20	21:32 / 22:51*	21	None	1
MER 3	13/06/2021	Dusk	KL	04:55 / 21:30	21:15 / 23:00	18	None	0
	18/07/2021	Dusk	OS	05:17 / 21:20	21:31 / 22:51*	21	None	1
MER 4	19/07/2021	Dusk	DOH, OS	05:18 / 21:18	21:35 / 22:50*	21	None	1
MER 7	19/07/2021	Dusk	JH	05:18 / 21:18	21:35 / 22:50*	21	None	1
MER 8	14/07/2021	Dusk	JH, MC	05:12 / 21:24	21:38 / 22:57*	15	None	1
MER 10	21/07/2021	Dusk	DO, JH	05:21 / 21:16	21:12 / 22:57*	22	None	1
	16/05/2022	Dusk	AB, JH	05:19 / 20:59	20:44 / 22:29	13	None	1
	31/05/2022	Dawn	DOH, DO	05:01 / 21:20	03:31 / 05:16	8	None	0
MER 11	22/07/2021	Dusk	MC	05:22 / 21:15	21:25 / 22:47*	20	None	0
MER 12	22/07/2021	Dusk	JH, OS	05:22 / 21:15	21:30 / 22:47*	20	None	0
MER 20	26/07/2021	Dusk	JH	04:57 / 21:33	21:43 / 22:42*	17	None	0
MER 21	26/07/2021	Dusk	MC, OS	05:27 / 21:09	22:11 / 22:42*	17	None	0

*Survey did not follow BCT guidance, see Section 4.2.3 Field Survey Limitations and Assumptions.

All surveys were undertaken following BCT guidance (Collins, 2016). Surveys were carried out using bat detectors (Batloggers and Echo Meter Touch) to identify the bats species observed (if any) and to record any behaviour. The recordings were then analysed through Analook software.

Surveyors were positioned appropriately to view the trees as far as practically possible. All surveys were undertaken by suitably qualified ecologists.

4.2.3 Field Survey Limitations and Assumptions

The PGLRA surveys were conducted at night due to rail possession times. However, surveyors used appropriate torches to provide ample lighting when assessing the potential of trees to support bat roosts. Therefore, this is not considered a significant constraint.

The results taken from bat detector recordings are biased towards bats that use louder echolocation calls. Quiet species such as brown long-eared bats may therefore be under recorded due to the limited recording range of the equipment. However, as surveys involve a visual assessment to identify bats, this is not considered a significant constraint.

It is difficult to confidently relate calls registered to numbers of bats present, even if more than one bat pass is detected simultaneously. The number of bat passes do not therefore provide any indication of bat abundance; it is intended to only indicate the level of activity at a particular point.

Different bat species emerge from a roost at differing times in relation to sunset. Therefore, it is important to ensure that tree surveys start 15 minutes before sunset to ensure the activity of all species that may be present is recorded. Due to prolonged activity on the railway line, surveyors were not granted access to the railway infrastructure in time to fulfil this requirement on 13 occasions (individual emergence/re-entry surveys). Surveyors arrived at trees beyond the time considered adequate as per BCT guidance (Collins 2016) and hence, this is considered a significant constraint and the surveys undertaken in 2021 are considered invalid.

Biological records obtained from third parties do not provide a full and complete species list for the area.

5. Results

5.1 Desk Study

5.1.1 Statutory Designated Sites for Bats

There were no statutory designated sites for bats recorded within 10km of the RS1MER route section.

5.1.2 Biological Records

The biological data search in 2017 returned 2,138 records of bats within 2km of the entire CVL.

A further search for bat records within 2km of the RS1MER route section over the last 10 years (2012-2022) returned a total of 208 records, with the nearest records located within the rail boundary.

This data included 38 records of bat roosts, with the nearest being a whiskered bat roost located approximately 0.11km west of the site.

See Table 4 below for full details of bat records within 2km of the RS1MER route section.

Table 4: Records of bats returned from within 2km of RS1MER (SEWBRc, 2022)

Species	Number of Records	Distance (km) and Direction of Nearest Record
Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	67	Within the rail boundary
Common pipistrelle (<i>Pipistrellus pipistrellus</i>)	60	Within the rail boundary
Unidentified pipistrelle (<i>Pipistrellus</i> sp.)	15	0.01km west
Unidentified bat (<i>Chiroptera</i> sp.)	14	0.06km north-east
Noctule (<i>Nyctalus noctula</i>)	18	0.08km south-west
Whiskered bat (<i>Myotis mystacinus</i>)	1	0.11km west
Brown long-eared bat (<i>Plecotus auritus</i>)	14	0.12km west
Unidentified myotis (<i>Myotis</i> sp.)	6	0.12km west
Nathusius' pipistrelle (<i>Pipistrellus nathusii</i>)	2	0.12km west
Daubenton's bat (<i>Myotis daubentonii</i>)	7	0.13km west
Lesser horseshoe bat (<i>Rhinolophus hipposideros</i>) **	1	0.57km north-east
Unidentified long-eared bat (<i>Plecotus</i> sp.)	1	1.03km west
Serotine (<i>Eptesicus serotinus</i>)	2	1.8km north-east

*Measured from the nearest point of the railway line.

**Annex II species.

5.2 Field Survey

5.2.1 Scoping Surveys

All trees were scoped for reasons mentioned in Section 3.2.1 and assessed for their potential to support bats. The results of these surveys are detailed in Table 5 below. For the locations of all



trees assessed along the RS1MER route section, refer to Appendix A. Photographs of the trees are provided in Appendix C.

Table 5: Scoping Survey Results

Tree Number	Mileage	Description of Preliminary Roost Features (PRFs)	Potential to Support Bats
MER 1	CAM 16m 46ch	Beech (<i>Fagus sylvatica</i>) with a northwest-facing knot-hole PRFs on stem at 6m and a northwest-facing knot-hole PRFs on limb at 7m.	Moderate
MER 2	CAM 16m 47ch	Oak sp. (<i>Quercus</i> sp.) with thick ivy coverage, some visible damage to stem and limbs so ivy may hide further PRFs	Moderate
MER 3	CAM 16m 48ch	Oak sp. northwest-facing knot-hole PRF of unknown depth on stem at 8m.	Moderate
MER 4	CAM 16m 52ch	Ash (<i>Fraxinus excelsior</i>) with northwest-facing tear-out PRF on limb at 5m and northwest-facing knot-hole PRF on limb at 7m.	Moderate
MER 5	CAM 17m 29ch	Silver birch (<i>Betula pendula</i>) with west-facing knothole PRF on stem at 3m.	Low
MER 6	CAM 17m 31ch	Oak sp. with lifting bark PRFs on multiple dead limbs in canopy.	Low
MER 7	CAM 17m 34ch	Willow sp. (<i>Salix</i> sp.) with west-facing tear-out PRF on stem at 4m.	Moderate
MER 8	CAM 17m 40ch	Sycamore (<i>Acer pseudoplatanus</i>) with east-facing tear-out PRF on stem at 10m.	Moderate
MER 9	CAM 17m 40ch	Willow sp. with west-facing knot-hole PRF on stem at 5m and ivy coverage throughout.	Low
MER 10	CAM 17m 76ch	Silver birch with northeast-facing brown rot canker cavity PRF on stem at 3.5m, outside of 9m but tree overhangs within 6-9m zone.	Moderate
MER 11	CAM 18m 05ch	Willow sp. north-facing shearing crack PRF on limb at 1.5m	Moderate
MER 12	CAM 18m 39ch	Oak sp. with three southeast-facing knot-hole PRFs on limbs at 2m, 4m and 5m.	Moderate
MER 13	CAM 18m 47ch	Sycamore with three east-facing knot-hole PRFs on limbs at 3m, 3.5m and 7m	Low
MER 14	CAM 19m 37ch	Poplar sp. (<i>Populus</i> sp.) with west-facing pruning cut on limb at 4m.	Low
MER 15	CAM 20m 06ch	Ash with ivy coverage throughout, stem appears to be in good condition, but ivy could conceal PRFs.	Low
MER 16	CAM 20m 13ch	Willow sp. with southwest-facing compression-fork PRF on stem at 4m, outside of 9m but tree overhangs within 6-9m zone.	Low
MER 17	CAM 20m 17ch	Willow sp. with multiple small west-facing wound PRF on limb overhanging into 6-9m zone.	Low
MER 18	CAM 20m 29ch	Crab apple sp. (<i>Malus sylvestris</i>) with west-facing hazard-beam PRF on limb at 3m.	Low
MER 19	CAM 20m 32ch	Willow sp. with east-facing lifting-bark PRF on limb at 1.5m, small knot-hole PRFs throughout.	Low
MER 20	CAM 20m 61ch	Willow sp. with multiple west-facing rot-hole PRFs of unknown depth on stem at 0.5m.	Moderate
MER 21	CAM 20m 75ch	Oak sp. with multiple lifting-bark and pruning-cut PRFs. Multiple dead limbs visible at 10m+ that may contain features but not easily visible from ground inspection.	Moderate
MER 22	CAM 20m 77ch	Oak sp. with east-facing pruning-cut PRF on limb at 9m. Feature appears to be upwards-facing.	Low
MER 23	CAM 21m 25ch	Ash with two southwest-facing pruning-cut PRFs on stem at 2.5m and 5.5m.	Low
MER 24	CAM 21m 31ch	Oak sp. with two northeast-facing rot-hole PRFs on limb at 4.5m and 6m.	Moderate
MER 25	CAM 21m 34ch	Ash with ivy coverage throughout and east-facing butt-rot PRF.	Moderate
MER 26	CAM 21m 35ch	Oak sp. with southeast-facing knot hole PRF on stem at 6.5m.	Moderate

Tree Number	Mileage	Description of Preliminary Roost Features (PRFs)	Potential to Support Bats
MER 27	CAM 21m 49ch	Ash with black rot, rot has created small features that may be suitable for roosting if they extend into stem.	Moderate
MER 28	CAM 22m 37ch	Oak sp. with northeast lifting-bark PRF on limb at 3m and two northeast-facing PRFs on limbs at 4m and 5m.	Moderate
MER 29	CAM 22m 66ch	Oak sp. with thick ivy coverage throughout.	Low
MER 30	CAM 23m 01ch	Poplar sp. with southeast-facing tear-out PRF on limb at 10.5m.	Moderate
MER 31	CAM 23m 09ch	Willow sp. with west-facing lifting-bark PRF on limb at 6m.	Low

5.2.2 Dusk Emergence / Dawn Re-entry Surveys

A total of 11 trees were subject to further survey in 2021. Tree MER 10 (CAM 17m 76ch) was subject to additional surveys in May 2022. The results of these surveys are detailed in Appendix B. No emergences or re-entries were recorded during further surveys.

5.2.3 Foraging Activity

Bats were observed to be using the rail corridor and surrounding areas for commuting and foraging in all areas that were subject to further surveys in 2021 and 2022. Overall activity was dominated by common and soprano pipistrelle species, with other species been recorded less frequently. Full list of recorded bat species is as follows:

- Common pipistrelle
- Soprano pipistrelle
- Noctule
- Unidentified *Nyctalus* (*Nyctalus* sp.)
- Brown long-eared bat
- Unidentified *Myotis*
- Unidentified bat
- Lesser horseshoe bat**

**Annex II bat species

6. Interpretation and Conclusions

6.1 Interpretation and Conclusions

Following the PGLRA surveys conducted between 4 January 2021 and 7 January 2021 as per the methodology described in Section 4.2.1, a number of trees along the RS1MER route section were recorded to have potential to support roosting bats. See below for the details of the tree assessments:

- A total of 14 low potential trees were recorded – see Section 6.2.3 for relevant recommendations; and
- A total of 17 moderate potential trees were recorded.

A total of 11 of the trees recorded to have moderate bat roost potential were subject to dusk emergence surveys in 2021, although, due to the survey limitations detailed in Section 4.2.3 these surveys are considered invalid and cannot determine the presence or likely absence of bat roosts. See Section 6.2.2 for relevant recommendations.

Further dusk emergence surveys were not able to be undertaken on the other six trees recorded as having moderate bat roost potential along the RS1MER route section, see Section 4.2.3 for limitation details and Section 6.2.2 for relevant recommendations.



Tree MER 10 (CAM 17m 76ch) was subject to further dusk emergence / dawn re-entry surveys in May 2022. The surveys recorded no bat roost present in this tree, and as such bats are considered likely absent. Therefore, no further recommendations are given for Tree MER 10.

6.2 Recommendations

6.2.1 Avoidance

Where possible the clearance of trees along the RS1MER route section should be minimised through the design process.

6.2.2 Licensing

Should clearance of any trees assessed as moderate suitability to support roosting bats be required that have not been subject to further survey, a bat licence will be required from NRW in order to disturb, damage, destroy or modify these trees. As these trees have not been surveyed this licence should follow the methodology used on RS0R2P and RS1ABD route sections (Bat Development Licence for Tree Removal R2P/ABD (Document Reference: TRAN01-KAW-ZZ-CVL-KPC-Y-EN-000023); Licence Number S088367/1).

6.2.3 Soft-felling Methodology

It is recommended that the trees with low bat roosting potential should be felled under a precautionary method statement under the supervision of a bat licensed ecologist. This will involve careful stripping of the ivy and bark and sectional felling with hand tools so that the ecologist can inspect all areas of peeling bark for presence of bats prior to the wood being chipped. If additional PRFs are found, then the ecologist will advise how to safely remove these as necessary. If bats are discovered during felling, then the ecologist will stop works to the tree and contact Natural Resources Wales (NRW) for advice as a licence and/or mitigation would likely be required. Felling can be carried out at any time of year, but the overall likelihood of encountering bats is lower from November to March due to negligible hibernation potential.

7. References

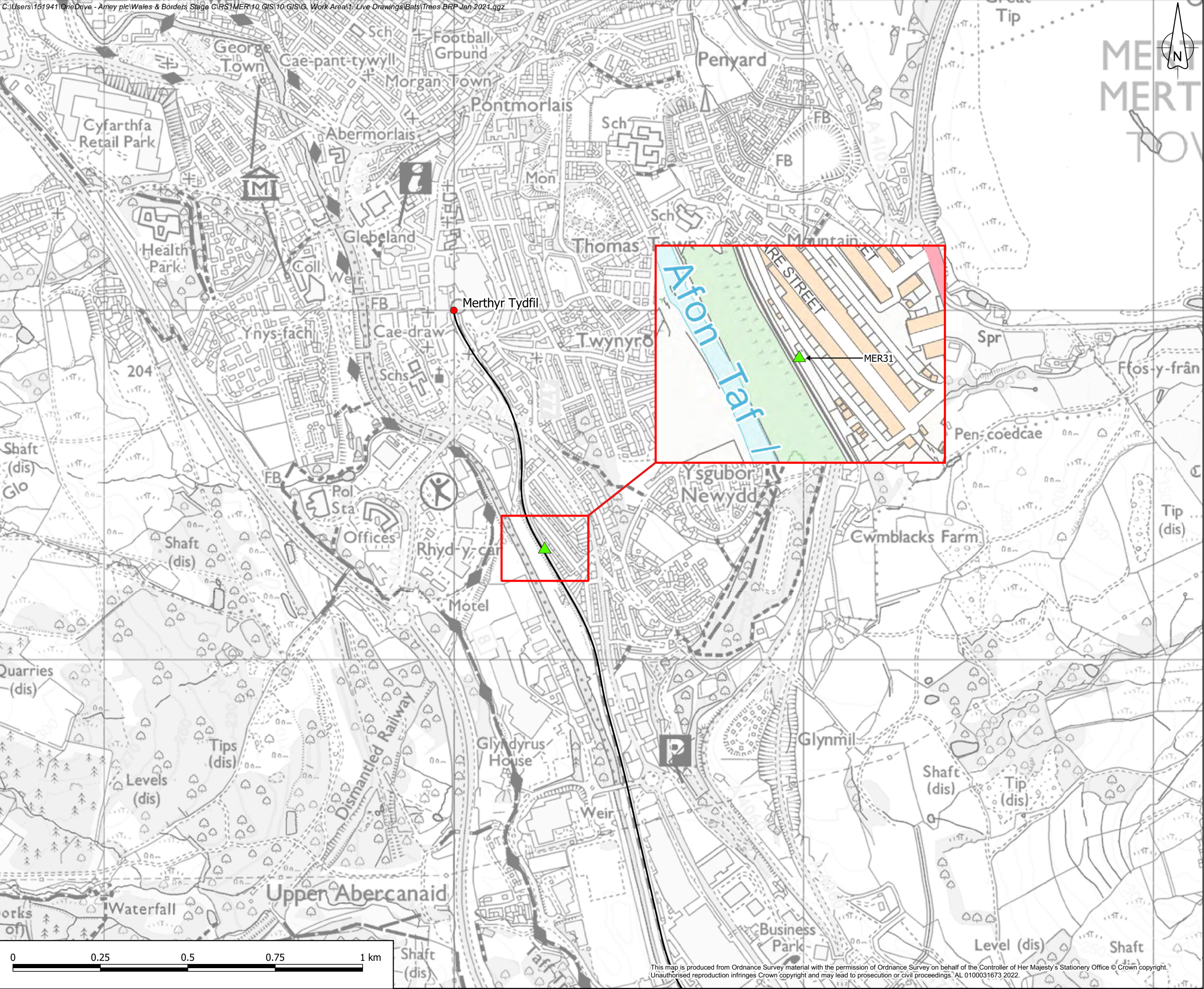
Mott MacDonald Ltd (2018) Task Order 027-C Ecological Impact Assessment (EclA). Document reference: 367590-WTD-CAR-27C-01 B.

Collins (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.



Appendix A: Figures

TRAN01-KAW-R1-MER-YPA-Y-EN-000454



Legend

- Stations
- Track Alignment
- Trees with Bat Roost Potential**
 - ▲ Low

P02	Minor Amendments	ES	MC	MP	17/06/2022
P01	Initial Drawing	ES	OS	ZCM	06/10/2021
Rev	Revision Details	Drwn	Chkd	Appd	Date:

Designed: OS	Date: 20/07/2021
Drawn: ES	Date: 17/06/2022
Checked: MC	Date: 17/06/2022
Approved: MP	Date: 17/06/2022



Project Name :

Merthyr Branch
Wales & Borders

Drawing Title :

Trees with Bat Roost Potential

Original Drg Size : A3	Scale : 1:10,000
Dimensions :	Page : 1 of 5

Drawing Status : Fit for Construction Approval	Suitability S4
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Figure No : -

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