

# **Wales and Borders Rail Service and South Wales Metro**

**TRAN01 - CVL Transformation**

**Dormouse Survey Report: Quakers Yard Station | A01**

**12/10/21**

**TRAN01-KAW-R1-MER-RPT-Y-EN-000076**



## Document Control Sheet

| Project Name: Wales and Borders Rail Service and South Wales Metro |                                              |
|--------------------------------------------------------------------|----------------------------------------------|
| Project Number:                                                    | TRAN01 - CVL Transformation                  |
| Report Title:                                                      | Dormouse Survey Report: Quakers Yard Station |
| Report Number:                                                     | TRAN01-KAW-R1-MER-RPT-Y-EN-000076            |
| Plan of Work Stage                                                 | D                                            |
| ELR                                                                | CAM                                          |
| Mileage From                                                       | 17M 62ch                                     |
| Mileage To                                                         | 18M 04ch                                     |

## Issue Record

| Issue Status/Amendment                          | Prepared                                         | Reviewed                                         | Approved                                          |
|-------------------------------------------------|--------------------------------------------------|--------------------------------------------------|---------------------------------------------------|
| A01<br>D3<br>Fit for Contractor Design<br>P01.1 | Name: SC<br><br>Signature:<br><br>Date: 12/10/21 | Name: AB<br><br>Signature:<br><br>Date: 12/10/21 | Name: ZCM<br><br>Signature:<br><br>Date: 12/10/21 |
| ---                                             | Name:<br><br>Signature:<br><br>Date: ---         | Name:<br><br>Signature:<br><br>Date: ---         | Name:<br><br>Signature:<br><br>Date: ---          |
| ---                                             | Name:<br><br>Signature:<br><br>Date: ---         | Name:<br><br>Signature:<br><br>Date: ---         | Name:<br><br>Signature:<br><br>Date: ---          |

## Executive Summary

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose         | <ul style="list-style-type: none"> <li>A dormouse (<i>Muscardinus avellanarius</i>) survey was carried out at Quakers Yard Station to identify any evidence of dormouse following recommendations from the Preliminary Ecological Appraisal Report.</li> </ul>                                                                                                                                                                                                                                                                                                                                   |
| Methods         | <ul style="list-style-type: none"> <li>The methods used comprised a desk study including a records centre data search (South East Wales Biodiversity Records Centre) and monthly dormouse surveys from April to September 2021 to identify any evidence of dormice.</li> <li>The survey followed guidance set out in the Dormouse Conservation Handbook (Bright <i>et al.</i>, 2006) and using surveyors competent to undertake the surveys as per the Chartered Institute of Ecology and Environmental Management (CIEEM)'s Competencies for Species Surveys: Hazel Dormouse (2013).</li> </ul> |
| Conclusions     | <ul style="list-style-type: none"> <li>The desk study returned no records of dormouse within a 2km radius of the site.</li> <li>No dormice or evidence of dormouse were recorded within the survey area between April and September 2021.</li> </ul>                                                                                                                                                                                                                                                                                                                                             |
| Recommendations | <ul style="list-style-type: none"> <li>No further recommendations are given.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |



# Contents

|                                                      |          |
|------------------------------------------------------|----------|
| <b>Executive Summary .....</b>                       | <b>2</b> |
| <b>1. Introduction .....</b>                         | <b>5</b> |
| <b>2. Background .....</b>                           | <b>5</b> |
| 2.1 Site Description .....                           | 5        |
| 2.2 Purpose of this Report .....                     | 5        |
| 2.3 Proposed Development .....                       | 5        |
| <b>3. Ecology and Legislation .....</b>              | <b>6</b> |
| 3.1 Ecology .....                                    | 6        |
| 3.2 Legislation .....                                | 6        |
| <b>4. Methods .....</b>                              | <b>7</b> |
| 4.1 Desk Study .....                                 | 7        |
| 4.2 Field Survey .....                               | 7        |
| 4.2.1 Presence / Likely Absence Survey .....         | 7        |
| 4.2.2 Field Survey Limitations and Assumptions ..... | 8        |
| <b>5. Results .....</b>                              | <b>8</b> |
| 5.1 Desk Study .....                                 | 8        |
| 5.2 Field Survey .....                               | 8        |
| 5.2.1 Presence / Likely Absence Survey .....         | 8        |
| <b>6. Interpretation and Conclusions .....</b>       | <b>9</b> |
| <b>7. References .....</b>                           | <b>9</b> |



## Tables

Table 1: Site Location Details

Table 2: Index of Probability for Dormice

Table 3: Summary of Nest Tube and Box Survey Results

## Appendices

**Appendix A: Figures**

**Appendix B: Dormouse Survey Raw Data**

# 1. Introduction

This document reports on the findings of a dormouse (*Muscardinus avellanarius*) survey of the proposed new platform, footbridge, shelter, and cycle hoops to be constructed at Quakers Yard Station near Treharris, hereafter referred to as 'the site'. This development forms part of the upgrade to the Core Valley Lines (CVL) as part of the wider South Wales Metro Project.

A Preliminary Ecological Appraisal Report (PEAR) identified semi-natural broadleaved woodland and dense scrub on site which offered suitable habitat for nesting and foraging hazel dormouse (Amey Infrastructure Wales (AIW), 2021). Furthermore, the semi-natural broadleaved woodland was well-connected to adjacent ancient woodland and to the wider area via the railway corridor. As such, a dormouse survey was recommended.

# 2. Background

## 2.1 Site Description

The proposed development will be at Quakers Yard Station near Treharris, located at the southern end of the Abercynon to Merthyr Tydfil (RS1MER) route section.

The site is an existing platform on the northern side of an existing single-track railway (the down line) with an existing footpath of hardstanding connecting the platform to the Taff Vale Estate. The platform is lined with scrub, tall ruderal and introduced shrub habitats, and is connected to broadleaved woodland which lines the path to the level crossing located on the western boundary of the site. A strip of broadleaved woodland borders the southern side of the existing single-track railway (the up line). The village of Edwardsville surrounds the site to the north. Broadleaved woodland extends to the east and west. Pontygwaith Nature Reserve is located immediately south of Quakers Yard Station and is bounded on one side by the River Taff, which is situated approximately 0.1km south of the site.

Quakers Yard Station has a central grid reference of ST 08625 96549, refer to Table 1 below.

**Table 1: Site Location Details**

| ELR          | Route Section | Grid Reference | Latitude and Longitude    |
|--------------|---------------|----------------|---------------------------|
| CAM 17m 73ch | RS1MER        | ST 08625 96549 | 51.66027063, -3.322429103 |

## 2.2 Purpose of this Report

This report aims to provide an assessment of dormouse presence or likely absence and the potential impacts of the proposed development on this species. Recommendations for mitigation, licensing and precautionary methods of working are also made where considered necessary.

## 2.3 Proposed Development

The proposed development includes:

- re-designing the track through the station to include two railway lines;
- construction of a new footbridge with ramp access and footpath parallel to Taff Vale Estate;
- platform extension of the existing down main platform with new shelter and cycle hoops;
- construction of a new up main platform with new shelter;
- construction of a new Public Right of Way (PRoW) ramp connecting the proposed up main platform to a new foot/cycle path which will link to an existing foot/cycle path to the southwest of the site; and
- removal of the existing level crossing and fencing to prevent access to this area.



An as yet, unquantified area of broadleaved woodland to the south and north of the railway line will require removal to accommodate the proposed development, as well as areas of scrub to the north by the existing platform.

A site compound is not required to facilitate the works for this proposed development. Construction access routes are to be confirmed and the anticipated start date for the proposed development is likely to be January 2022.

### 3. Ecology and Legislation

#### 3.1 Ecology

The hazel dormouse is a distinctive native British mammal with golden-brown fur and a furry tail. They are infrequently seen due to nocturnal habits and rarity. Adult dormice measure approximately 6.5 - 8cm and weigh approximately 20g (although this can increase substantially prior to hibernation). Dormice spend almost all their time in the branches of trees during summer months, rarely coming to the ground. Dormice weave a distinctive nest usually formed of stripped bark surrounded by a layer of fresh leaves. Dormice go into a state of torpor similar to hibernation in cold and/or wet conditions which allows them to save energy due to a reduction in their metabolic rate. Dormice hibernate on the ground usually in leaf litter on woodland floor or in the base of hedgerows (Bright *et al.*, 2006).

Female dormice give birth to approximately four to five individuals. The breeding season runs from June to September, but the peak is in July to August. Young depend on their mothers for around two months. In some cases, dormice do have a second litter if they are born early enough in the season; however, due to the reliance on the mother after birth, a second litter is unlikely. Young must reach a viable weight of 15g by late October before hibernation to survive.

Hibernation begins when the nights become cool in the autumn and there is little food left in the trees. Larger dormice (weighing up to 40 g) appear to enter hibernation earlier, while smaller animals continue to feed until later in the autumn. These may remain active until November but in some cases December in mild years. Once in hibernation, dormice do not usually leave their nests until the following spring. Dormice do not normally hibernate successfully in nest boxes because the temperature inside is too variable (Bright *et al.*, 2006).

#### 3.2 Legislation

Dormice and their resting places are fully protected by UK law under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and under Schedule 2 the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 making it an offence to:

- deliberately capture, injure or kill dormice;
- intentionally or recklessly disturb dormice while occupying a structure or place used for shelter or protection;
- deliberately disturb, in particular affecting breeding, abundance or distribution;
- intentionally or recklessly obstruct access to a structure or place used for shelter or protection; and
- damage or destroy a breeding site or resting place.

Dormice are also listed as a Section 7 species of Principal Importance in Wales for the purpose of maintaining and enhancing biodiversity. Dormice are also incidentally protected by the Hedgerow Regulations 1997, which are intended to prevent the removal of important hedgerows. Important hedgerows are defined by certain criteria which includes the presence of any species protected by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) within the 5 years before the passing of the Act (the period from March 1992 to March 1997).

## 4. Methods

### 4.1 Desk Study

A desk study was undertaken and reported within the PEAR (AIW, 2021). 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 development. This included a data search request to the South East Wales Biodiversity Records Centre (SEWBRc) for protected and priority species present within 2km of the site boundary, including dormice.

### 4.2 Field Survey

#### 4.2.1 Presence / Likely Absence Survey

Survey methods involved the use of nest tubes for dormouse. The surveys were conducted in accordance with best practice guidance set out in the Dormouse Conservation Handbook (Bright *et al.*, 2006). Dormice survey tubes made from stiff double walled black plastic sheeting measuring 5cm x 5cm by 25cm long were attached horizontally to the underside of tree and scrub limbs using garden wire. A small plywood tray was securely inserted into the plastic sheeting.

Nest boxes were also deployed to supplement the nest tube data. Spacing bars above and below the entrance allow easy access to the entrance hole, which is about 35mm in diameter. They were attached to the tree using a wire sling.

A total of 56 nest tubes and 10 nest boxes were installed in suitable habitat within the works area and within suitable habitat south of the site and the ancient woodland 50m southwest of the site which were both well-connected to the site. Tubes were placed at intervals of approximately 20m in March 2021. They were installed at a height of between 1m and 2m from the ground where the vegetation permitted. Each tube was numbered and their locations mapped to help locate them on subsequent visits.

Nest tubes and boxes were visually inspected once a month in dry weather conditions between April and September 2021.

All surveys were undertaken by an experienced dormouse licensed ecologist. The dormouse tubes were checked with use of a mirror. If vegetation was present, the entrance was plugged using a piece of material and then lowered carefully into a large clear bag. The plywood tray/wooden lid was then carefully removed to check for dormice. Dormouse boxes were also checked in this manner. The nest tube/box was then reinstalled.

According to standard methodology a minimum survey score of 20 should be achieved for the survey effort to provide accurate findings. The survey score is based on an Index of Probability for finding dormice listed in Table 2 below.

**Table 2: Index of Probability for Dormice**

| Month     | Index of Probability |
|-----------|----------------------|
| April     | 1                    |
| May       | 4                    |
| June      | 2                    |
| July      | 2                    |
| August    | 5                    |
| September | 7                    |
| October   | 2                    |
| November  | 2                    |

Source: Bright *et al.*, 2006



All surveyors worked under supervision of Andrew Bone BSc (Hons) MSc MCIEEM (licence number: S088302/1), and Stephanie Cox BSc (Hons) ACIEEM (accredited under licence number: S087358/1).

#### 4.2.2 Field Survey Limitations and Assumptions

The Chartered Institute of Ecology and Environmental Management (CIEEM) issued advice on the lifespan of ecological reports and surveys in 2019. Whilst this will vary on a case-by-case basis, this survey report is likely to be valid for 18 months. After this time, a professional ecologist should be consulted on the validity of this report.

Biological records are obtained from third-parties and do not represent a full species list for the area.

Due to the nature of the survey area and public access, some nest tubes were not found on all survey visits or found damaged. This is not considered to have a significant impact on the results as the majority were found each survey.

A nut search has not been undertaken due to the lack of fruiting hazel within the survey area.

The semi-natural broadleaved woodland identified for removal immediately to the south of the railway line was located within the railway boundary with palisade fencing restricting access to this woodland. However, it was possible to install nest boxes in suitable locations within this woodland as branches overhung this boundary fencing.

## 5. Results

### 5.1 Desk Study

No records of dormice were returned within 2km of the site boundary.

### 5.2 Field Survey

#### 5.2.1 Presence / Likely Absence Survey

No dormice or evidence of dormouse was recorded during these surveys. Evidence of wood mouse was recorded during the July, August and September visits.

The field survey findings and Index of Probability score are included in Table 3 below. The dormouse location map details the location of dormouse nest tubes and nest boxes in Appendix A, Figure TRAN01-KAW-R1-MER-YPA-Y-EN-000455. The raw data is provided in Appendix B.

**Table 3: Summary of Nest Tube and Box Survey Results**

| Survey Date                             | Survey Findings                                                                       | Index of Probability Score |
|-----------------------------------------|---------------------------------------------------------------------------------------|----------------------------|
| 26 April 2021                           | No evidence of dormouse                                                               | 1                          |
| 27 May 2021                             | No evidence of dormouse                                                               | 4                          |
| 22 June 2021                            | No evidence of dormouse                                                               | 2                          |
| 22 July 2021                            | No evidence of dormouse<br>Wood mouse ( <i>Apodemus sylvaticus</i> )<br>nest in Box 2 | 2                          |
| 23 August 2021                          | No evidence of dormouse<br>Wood mouse nest in Box 2                                   | 5                          |
| 23 September 2021                       | No evidence of dormouse<br>Wood mouse nest in Box 5 and Box 8                         | 7                          |
| <b>Total Index of Probability Score</b> |                                                                                       | <b>21</b>                  |



## 6. Interpretation and Conclusions

No dormice or evidence of dormouse was recorded during the survey. Therefore, this species is considered likely absent on site and no further recommendations are given.

## 7. References

Amey Infrastructure Wales (2021) *Preliminary Ecological Appraisal: Quakers Yard Station*.

Document number: TRAN01-KAW-R1-MER-RPT-Y-EN-000063

Bright, P., Morris, P., Mitchell-Jones, T. (2006) *The Dormouse Conservation Handbook (Second Edition)*. English Nature, Peterborough.

CIEEM (2013) *Technical Guidance Series. Competencies for Species Surveys: Hazel Dormouse*.

[online] Available at: <https://cieem.net/wp-content/uploads/2019/02/CSS-HAZEL-DORMOUSE-April-2013.pdf> [Accessed 15 September 2021].

CIEEM (2019) *Advice Note on the Lifespan of Ecological Surveys and Reports*. [online] Available at: <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf> [Accessed 15 September 2021].

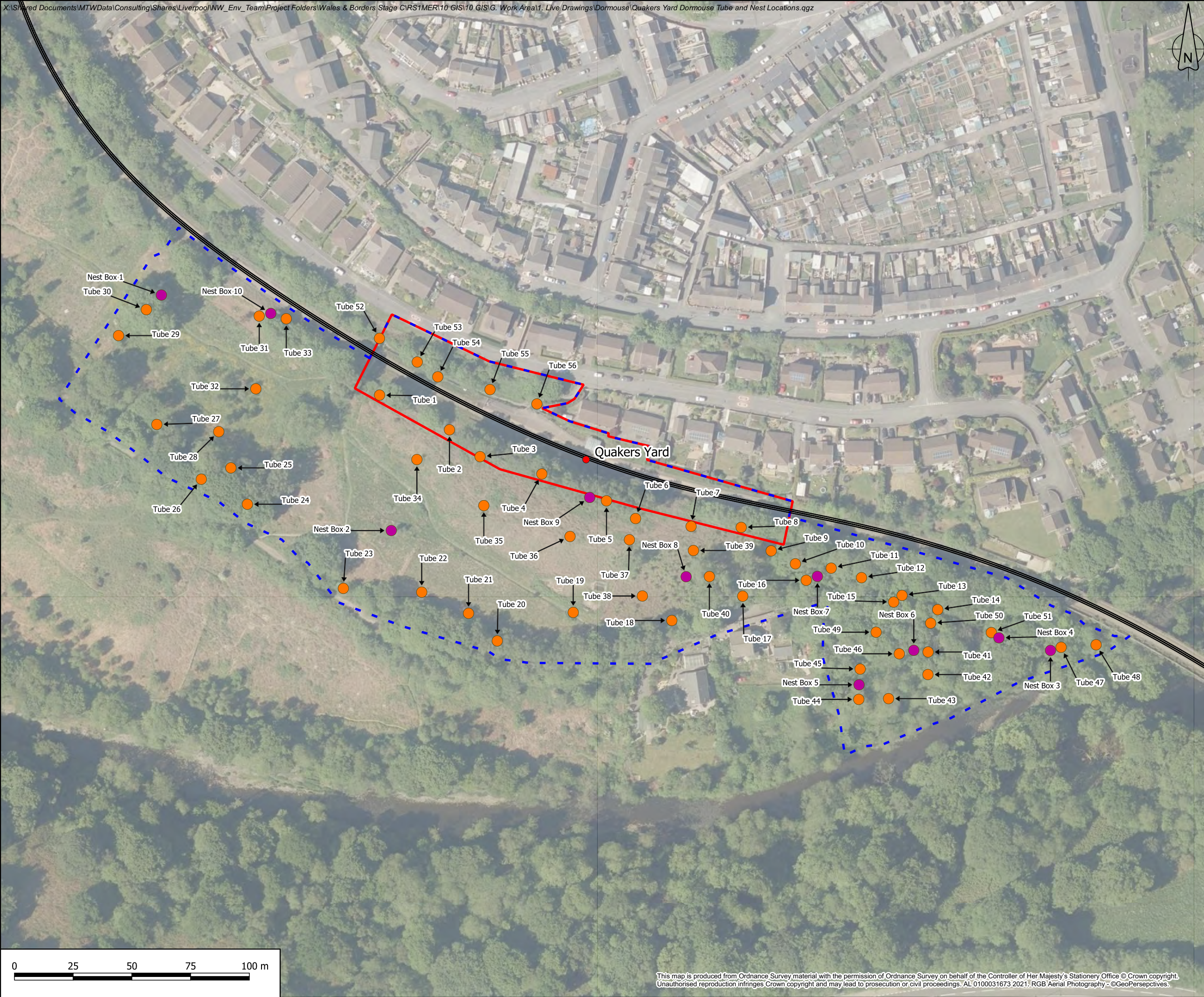


## Appendix A: Figures

**TRAN01-KAW-R1-MER-YPA-Y-EN-000455**



- Legend
- Stations
  - Track Alignment
  - Indicative Site Boundary
  - Indicative Survey Area
  - Nest Box Locations
  - Nest Tube Locations



| Rev | Revision Details | Drwn | Chkd | Appd | Date:            |
|-----|------------------|------|------|------|------------------|
|     | Designed: SC     |      |      |      | Date: 24/03/2021 |
|     | Drawn: ES        |      |      |      | Date: 28/09/2021 |
|     | Checked: SC      |      |      |      | Date: 28/09/2021 |
|     | Approved: ZCM    |      |      |      | Date: 29/09/2021 |



Project Name :

Merthyr Branch  
Wales & Borders

Drawing Title :

Quakers Yard Station  
Dormouse Nest Tube and Nest Box  
Locations

|                        |                 |
|------------------------|-----------------|
| Original Drg Size : A3 | Scale : 1:1,500 |
| Dimensions :           | Page : 1 of 1   |

|                               |             |
|-------------------------------|-------------|
| Drawing Status :              | Suitability |
| Fit for Construction Approval | S4          |

|             |
|-------------|
| Figure No : |
| -           |

|                                   |     |
|-----------------------------------|-----|
| Drawing No :                      | Rev |
| TRAN01-KAW-R1-MER-YPA-Y-EN-000455 | P01 |

## Appendix B: Dormouse Survey Raw Data

| Tube/Box Number | April 2021                  | May 2021 | June 2021 | July 2021 | August 2021              | September 2021 |
|-----------------|-----------------------------|----------|-----------|-----------|--------------------------|----------------|
| 1               | E                           | E        | E         | E         | E                        | E              |
| 2               | E                           | E        | E         | E         | E                        | E              |
| 3               | E                           | E        | E         | E         | E                        | E              |
| 4               | E                           | E        | E         | E         | E                        | E              |
| 5               | E                           | E        | E         | E         | E                        | E              |
| 6               | E                           | E        | E         | E         | E                        | E              |
| 7               | E                           | E        | E         | E         | E                        | E              |
| 8               | E                           | E        | E         | E         | E                        | E              |
| 9               | E                           | E        | E         | E         | E                        | E              |
| 10              | E                           | E        | E         | E         | E                        | E              |
| 11              | E                           | E        | E         | E         | E                        | E              |
| 12              | E                           | E        | E         | E         | E                        | E              |
| 13              | E                           | E        | E         | E         | E                        | E              |
| 14              | E                           | E        | E         | E         | E                        | E              |
| 15              | E                           | E        | E         | E         | E                        | E              |
| 16              | E                           | E        | E         | E         | E                        | E              |
| 17              | E                           | E        | E         | E         | E                        | Damaged        |
| 18              | E                           | E        | E         | E         | E                        | Damaged        |
| 19              | Insert missing – replaced   | E        | E         | E         | E                        | E              |
| 20              | E                           | E        | E         | E         | Inaccessible - overgrown | E              |
| 21              | Insert on ground - replaced | E        | E         | E         | Inaccessible - overgrown | E              |
| 22              | E                           | E        | E         | E         | Inaccessible - overgrown | E              |
| 23              | E                           | E        | E         | E         | E                        | E              |
| 24              | E                           | E        | E         | E         | Inaccessible - overgrown | E              |
| 25              | E                           | E        | E         | E         | Inaccessible - overgrown | E              |
| 26              | E                           | E        | E         | E         | E                        | E              |
| 27              | E                           | E        | E         | E         | Inaccessible - overgrown | E              |
| 28              | E                           | E        | E         | E         | Inaccessible - overgrown | E              |
| 29              | E                           | E        | E         | E         | E                        | E              |
| 30              | E                           | E        | E         | E         | E                        | E              |
| 31              | E                           | E        | E         | E         | E                        | E              |
| 32              | E                           | E        | E         | E         | E                        | E              |
| 33              | E                           | E        | E         | E         | E                        | E              |
| 34              | E                           | E        | E         | E         | E                        | E              |



| Tube/Box Number | April 2021                    | May 2021 | June 2021 | July 2021                | August 2021              | September 2021         |
|-----------------|-------------------------------|----------|-----------|--------------------------|--------------------------|------------------------|
| 35              | E                             | E        | E         | E                        | Inaccessible - overgrown | E                      |
| 36              | E                             | E        | E         | E                        | Inaccessible - overgrown | E                      |
| 37              | E                             | E        | E         | E                        | Inaccessible - overgrown | E                      |
| 38              | E                             | E        | E         | E                        | Inaccessible - overgrown | E                      |
| 39              | E                             | E        | E         | E                        | Inaccessible - overgrown | E                      |
| 40              | E                             | E        | E         | E                        | E                        | E                      |
| 41              | E                             | E        | E         | E                        | E                        | E                      |
| 42              | E                             | E        | E         | E                        | E                        | E                      |
| 43              | E                             | E        | E         | Inaccessible - overgrown | E                        | E                      |
| 44              | E                             | E        | E         | Inaccessible - overgrown | Missing – area cleared   | Missing – area cleared |
| 45              | E                             | E        | E         | E                        | E                        | E                      |
| 46              | E                             | E        | E         | E                        | E                        | E                      |
| 47              | E                             | E        | E         | E                        | E                        | E                      |
| 48              | E                             | E        | E         | E                        | E                        | E                      |
| 49              | E                             | E        | E         | E                        | E                        | E                      |
| 50              | E                             | E        | E         | E                        | E                        | E                      |
| 51              | E                             | E        | E         | E                        | E                        | E                      |
| 52              | Found on ground - reinstalled | E        | E         | E                        | E                        | E                      |
| 53              | E                             | E        | E         | E                        | E                        | E                      |
| 54              | Insert missing – replaced     | E        | E         | E                        | E                        | E                      |
| 55              | E                             | E        | E         | E                        | E                        | E                      |
| 56              | E                             | E        | E         | E                        | E                        | E                      |
| Box 1           | E                             | E        | E         | E                        | E                        | E                      |
| Box 2           | BN                            | BN       | Old BN    | WM                       | WM                       | E                      |
| Box 3           | BN                            | BN       | E         | E                        | BN                       | E                      |
| Box 4           | E                             | E        | E         | E                        | E                        | E                      |
| Box 5           | E                             | E        | E         | E                        | E                        | WM                     |
| Box 6           | BN                            | BN       | Old BN    | E                        | E                        | E                      |
| Box 7           | E                             | E        | E         | E                        | E                        | E – lid on floor       |
| Box 8           | BN                            | BN       | BN        | BN                       | E                        | WM                     |
| Box 9           | BN                            | Old BN   | E         | E                        | E                        | E                      |
| Box 10          | BN                            | Old BN   | BN        | E                        | E                        | E                      |

DM – Dormouse, WM – Wood Mouse, BN – Birds Nest, E- Empty

