



P e l l F r i s c h m a n n

**Hoo Station GRIP 3 – Reopening of
the Grain Branch Line for Passenger
Services**

Water Vole Survey Report

Date: October 2020

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1 Introduction

Pell Frischmann have been commissioned by Medway Council to undertake protected species surveys with regards to water voles (*Arvicola amphibius*) for the reopening of the Grain Branch Line for passenger services.

The Hoo Peninsula is currently accessed via a single main highway route which links to other roads in the Chatham and Strood area. There is a proposal to increase housing on the peninsula by 12,100 homes, all of which would need to be served by this highway. The resulting significant increase in traffic would exceed the road network's capacity, even with the planned highway upgrades so a shift to rail usage is being sought.

The existing Network Rail lines in the area are the London to Higham / Strood main line and the Grain Line (also known as the Hoo branch line) a freight line to the Isle of Grain. An investigation is underway as to the viability of running a passenger service on the Grain Line.

The GRIP 2 study investigated the feasibility of the scenarios raised by the GRIP 1 report. This focused on providing a passenger service to Sharnal Street (Phase 1), and also considers the passive provision for doubling of the line by Network Rail (Phase 2) to provide for future expansion of passenger and freight services.

This GRIP 3 Study now considers the options in more detail with a view to recommending options to be taken forward This report forms part of that analysis.

The GRIP 3 study has been divided into the following main elements -

- the enabling works to the existing line including any environmental mitigation and structural upgrades to the existing infrastructure
- permanent way modifications including the creation of passing places
- the creation of a new route south to Higham, Strood and the Medway Towns
- civils works for the replacement of existing at-grade crossings,
- the creation of a new station at Sharnal Street and associated infrastructure.

1.1 Survey Scope

The scope of these surveys was to identify -

- the presence/likely absence of water voles within water bodies within the Site; and
- the presence/likely absence of water voles within the ecological zone of influence.

The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species.

Sufficient ecological information is required to fully inform the site design and the proposed works. Reports will enable the project to satisfy all current UK and European legal wildlife requirements, as well as national and local planning regulations. All public bodies have statutory obligations under the Natural Environment and Rural Communities Act 2006 to conserve and enhance biodiversity.

The scheme should aim to minimise impacts to key ecological receptors wherever possible. The ecological zone of influence includes the land within the Network Rail boundaries, the adjoining land and the length of watercourses up to 200m upstream and downstream from the proposed works area. The study area is set out in Section 1.2 below.

1.2 Site Location and Description

The Site included the existing railway known as the Grain Branch and runs from National grid Reference TQ 70493 73859 at Canal Street to TQ 79295 73975 to the south of Sharnal Street.

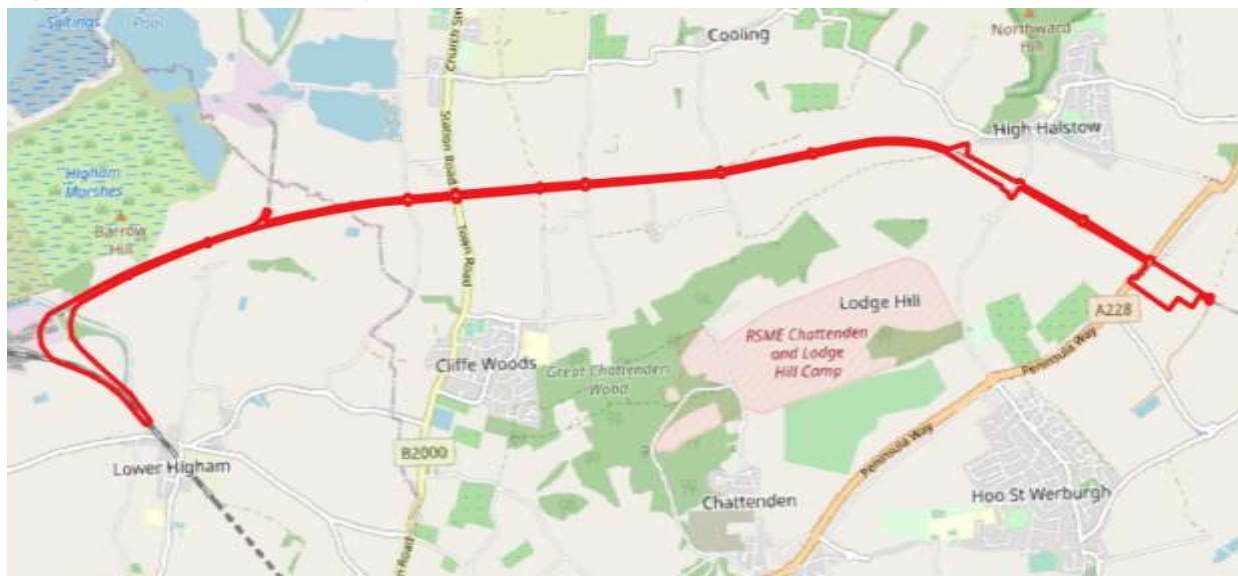
As described above, the Hoo branch line is a single-track line which historically served as a passenger line with a number of stations but there are no remaining stations. There is also evidence that the track was doubled in some locations but only a single line remains. The branch now serves purely as a freight line.

The Site also includes the land to the south of the existing Grain Branch at Canal Street which includes a mix of arable and marshy grassland.

1.2.1 Study Area

The study area for water voles included drains and wet ditches that intersected with the Site, which were surveyed up to 200m upstream and downstream from the crossing point with the proposed route where access permitted. Ponds within 500m of the Site were also surveyed in tandem with the great crested newt (*Triturus cristatus*) (GCN) surveys during June 2020.

Figure 1 Site Red Line Boundary



Map Data Contains © OpenStreetMap Contributors

2 Legislation

The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species.

It is an offence to:

- Intentionally capture, kill or injure water voles;
- Damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care);
- Disturb them in a place of shelter or protection (on purpose or by not taking enough care); and
- Possess, sell, control or transport live or dead water voles or parts of them (not water voles bred in captivity)

In most cases, harm or disturbance of water voles can be avoided by protecting access to their habitat. If disturbance cannot be avoided, a licence will be required. Planning permission must be granted prior to making an application to Natural England. Negative effects can be avoided by *“avoiding works to areas where there are water voles, avoiding habitat fragmentation and isolation by ensuring connectivity of habitat, limiting damage to water vole habitat”*.

3 Assessment Methodology

3.1 Desktop Study

To accurately assess the potential ecological impacts of the scheme, a desktop study was undertaken to identify the presence of sensitive ecological receptors at the site and within the surrounding area.

The Kent and Medway Biological Records Centre (KMBRC) were commissioned to undertake a data search for protected and notable species and sites of conservation importance within a 2km radius of the central point of the site.

In addition, the National Biodiversity Network (NBN) database was searched for local records for notable and protected species from 2km of the site boundary within the last 20 years.

Full details of the desktop study (including relevant legal and policy issues) can be found within the Preliminary Ecological Appraisal (PEA) report (103223-PEL-G3-H01-REP-EVV-0001) and details relevant to water vole have been summarised in Section 4 of this report.

3.2 Field Surveys

Water vole surveys were undertaken following the standard methodology as outlined in the Water Vole Mitigation Guidelines (The Mammal Society, 2016) and Natural England.

Waterways and pond banks up to 200m upstream and downstream from the proposed works area (as shown in Appendix A) were closely examined for the following signs of water vole:

- Droppings – approx. 8-12mm long, cylindrical with blunt ends and symmetrical, varying from greenish, brown and black.
- Latrines – deposits of droppings, often near the nest, at range boundaries, and where they leave or enter the water. Established and maintained from February to November. Often found as a flattened mass topped with fresh droppings.
- Feeding stations – neat piles of chewed lengths of vegetation, typically up to 10cm showing large incisor marks.
- Burrows – typically with a diameter of 4-8cm, water vole burrows are wider than they are high. Occasionally appearing larger at the water's edge due to erosion of the entrance. They appear as a set of holes, some at or just above the water level on steep banks, some below the water line and others up to 5m from the water within vegetation.
- Tracks (footprints) – often found along the water margin in soft mud. These show 4 toes in a star shape on the fore legs and 5 toes on the hind legs. Typically, the hind foot is 26-34mm and show a pad arrangement that appears at the water edge leading into vegetation cover.
- Runs or pathways – found within 2m of the water's edge or burrow entrances, these may branch out leading to the water's edge, feeding station or burrow.

3.3 Surveyors

All surveys were completed by suitably qualified ecologists from Pell Frischmann.

3.4 Accurate Lifespan of Ecological Data

The majority of ecological data remains valid for only short periods due to the inherently transient nature of the subject. Local water vole populations are highly susceptible to periodic flooding on these rivers. The survey results contained in this report are considered accurate for approximately 2 years, notwithstanding any considerable changes to the site conditions. Beyond this, updated surveys may be required to ascertain if the status of the Site with respect to water vole has changed.

3.5 Ecological Survey Constraints and Limitations

Not all sections of the wet ditch network could be closely examined due to the depth of water or access permissions at the time of the surveys. However, where possible, binoculars and a spotter scope were also used to examine for signs and this method is considered to provide valid survey results.

Surveys within the ponds were completed only once in June due to access permissions. As none of the ponds present within 500m of the Site will be directly impacted, it is not considered that the presence of water voles within these water bodies will impact on the scheme.

4 Results

4.1 Desk Study

A total of 157 records for water vole were returned within 2km of the Site. The closest of these records were located in a watercourse at Beckley Hill, Higham within the western section of the Site and within Higham Marshes, directly adjacent to the north of the Site.

4.2 Field Survey Results

Signs of water voles were identified with the wet ditches along Canal Road and adjacent to the Ratcliffe Highway.

Ponds within a 500m buffer of the Site were also surveyed for water voles in tandem with the GCN surveys. No signs of water voles were identified; however, suitable habitat for water vole was present and local landowners have provided anecdotal evidence that water voles have previously been present within ponds to the east of Canal Road.

4.2.1 Initial Walkover Survey – June 2019

An initial walkover survey was completed in June 2019 and visited areas identified during the desk study as having higher risks and constraints within the Ecological Zone of Influence. The survey was completed using public footpaths and publicly accessible land only, and therefore was limited in its coverage of the Site and was completed for feasibility purposes only.

Water vole burrows and latrines were identified within wet ditches to the west of Ratcliffe Highway at approximate grid reference TQ 78608 74366 and referenced WV-RCH1 on the map shown in Appendix A.

4.2.2 Spring Survey – May and June 2020

The wet ditch adjacent to the Ratcliffe Highway identified during 2019 was overgrown during these surveys and no signs of water voles were visible.

No signs of water voles were identified within any of the ponds surveyed during the GCN surveys; however suitable habitat for water vole was identified in the vicinity of several of these ponds.

Discussion with local landowners also identified anecdotal evidence of the presence of water voles within the wet ditches and ponds within the vicinity of Canal Road. No fields signs were observed; however, landowner observations were in line with the data records returned and detailed above.

No other signs of water voles were recorded.

4.2.3 Autumn Survey – September 2020

A potential water vole burrow was identified within the wet ditch alongside Canal Road as well as water vole droppings at approximate grid reference TQ7074873824 (ref WV-CR1).

The water vole burrow previously identified in the ditch adjacent to the Ratcliffe Highway was visible during the autumn survey and droppings were also identified in proximity to the burrow

(grid reference TQ 78608 74366). An additional burrow and droppings were identified at approximate grid reference TQ7869274330 (ref WV-RCH2). Discussion with the landowner also provided anecdotal evidence that water voles are present within the ditch leading to the farm and have been observed previously.

No other signs of water voles were recorded.

5 Likely Impacts and Key Constraints

Water vole burrows and potential feeding stations have been identified within wet ditches along Canal Road and the Ratcliffe Highway. Due to the interconnecting nature of the ditches along the length of the Site, it must be assumed that water voles are present throughout the construction footprint in some capacity (largely considered to be foraging and commuting).

No direct impacts to known burrows are considered likely due to the distance of known burrows from the Site boundary; however, works to construct the proposed curve and the new station will both require crossing of wet ditches and therefore have the potential for:

- Loss and disturbance of water vole habitat;
- Disturbance to foraging and commuting habitat due to construction works; and
- Potential water contamination

Due to the potential impacts on water vole from the works, mitigation requirements are set out in section 6.

6 Mitigation for Protected Species

The ecological impact hierarchy requires that all steps are taken to avoid adverse impacts to habitats and species. Only where impacts cannot be avoided, steps should be taken to mitigate for any losses within the scheme boundary. In cases where all options for on-site mitigation have been exhausted, offsite compensation measures can be considered.

If any protected species, including birds' nests, are found during the works, construction in that area should stop immediately and an ecological specialist should be consulted, in line with UK legislation.

Construction workers must be informed that protected species are present within the wet ditches that cross the Site. Care should be taken to ensure the Site is left in a tidy condition and that no food is left out overnight that might attract water voles onto the site.

Best practice should be followed to prevent water contamination from concrete, or construction material, into the ditch network and a suitable Construction Environmental Management Plan (CEMP) produced.

While basic detail of the proposals is known, including duelling of areas of the track and a proposed curve, detailed design was not available at the time of the survey. The following mitigation sets out requirements for several construction options, but these recommendations should be reviewed by a suitably qualified ecologist when the final proposals are available and amended as required.

The due date for works to commence is currently unknown. Therefore, it is recommended that pre-commencement surveys for water voles are completed prior to works commencing to check that no additional burrows or signs have established within the construction footprint during the intervening period.

6.1 Mitigation for Water Voles

The following recommendations and mitigation are set out without detailed proposals being known. The final design proposals, when available, should be reviewed by a suitably qualified ecologist and amended as required in line with the confirmed proposals.

Construction works should aim to avoid negative impacts on water voles wherever possible.

Works to construct the proposed curve and new station are likely to impact upon water vole habitat in the form of vegetation clearance, disturbance during construction, and potential water contamination. Therefore, the following mitigation will be required –

- Avoid the requirement to culvert any watercourses during construction. In the event that culverts must be installed, they should be as minimum in length as possible and details should be discussed with an ecologist throughout the design process.
- Pre-commencement checks – a suitably qualified ecologist should complete checks of all wet ditches within the construction footprint once this has been finalised and prior to works commencing. This will include surveying for sign of any additional water vole burrows, latrines or feeding stations.

- Habitat manipulation (up to 50m in length) – An ecological clerk of works must be present throughout bankside habitat manipulation. In the event that a water vole burrow, latrine or feeding station is identified within the construction footprint during the pre-commencement checks, all works must stop immediately, and an ecologist consulted. A licenced ecologist may then use habitat manipulation to encourage water voles to move further from the scheme. **This must be carried out by an ecologist with the suitable Class License and can only be completed between 15th February to 15th April inclusive. This method can be used for a maximum of up to 50m of continuous vegetation clearance.**
- Habitat manipulation (over 50m in length) - other displacement operations require a site-specific licence and the project must deliver a net benefit for water voles (this is due to the licence being issued for the purpose of conservation rather than development).

Note - Translocation of water voles can only be used if there is no reasonable alternative. It is not considered that translocation will be required for this scheme at this stage due to the anticipated nature of the proposed works and impacts to water voles predicted. Therefore, this method is not detailed further.

7 Summary

Water vole surveys were undertaken in May, June and September 2020 by Pell Frischmann to inform the design team of the presence and location of water voles.

Signs of water voles were identified within wet ditches adjacent to Canal Road and the Ratcliffe Highway, including burrows and droppings. The closest of these were located 10m to the south of the Site red line boundary.

No signs of water voles were identified within any of the ponds surveyed, however suitable habitat is present and local landowners have provided anecdotal evidence that water voles have previously been present within ponds to the east of Canal Road.

Due to the interconnecting nature of the ditches along the length of the Site, it must be assumed that water voles are present throughout the construction footprint.

Suitable mitigation has been outlined to avoid impacts to water voles, though these recommendations should be reviewed once full proposals have been determined. It is considered that construction works can be completed without the requirement for a site-specific water vole licence from Natural England provided the mitigation outlined is followed.

The due date for works to commence is currently unknown. Therefore, it is recommended that pre-commencement surveys for water voles are completed to check no additional burrows or signs of water voles establish within the construction footprint in the intervening period between these surveys and construction starting.

The survey results contained in this report are considered accurate for approximately 2 years, beyond which updated surveys may be required to ascertain if the status of the Site with respect to water voles has changed.

8 Ecological Report Limitations

The information reported herein is based only on the interpretation of data collected during the protected species survey visits. This work pertains specifically to the identification of protected species on the proposed site. Information provided to Pell Frischmann has been accepted as being accurate and valid.

This report has been prepared by Pell Frischmann with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client.

The evaluation and conclusions do not preclude the existence of other protected species, which could not reasonably have been revealed by the comprehensive desk studies, site visit and protected species surveys. Hence, this report should be used for information purposes only and should not be construed as a comprehensive characterisation of all site habitats.

In addition, this report details only the conditions on site, at the time of reporting. The dynamic nature of the natural environment will result in changes to the surrounding environment as seasons change. No responsibility is taken by Pell Frischmann to the existence of additional species identified on this site at a later date.

This report has been prepared solely for the use of Medway Council and may not be relied upon by other parties without written consent from Pell Frischmann. In addition, it must be understood that this report does not constitute legal advice.

Pell Frischmann disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

9 References

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Available: http://www.searchnbn.net/index_homepage/index.jsp





Water voles: surveys and mitigation for development projects [online]

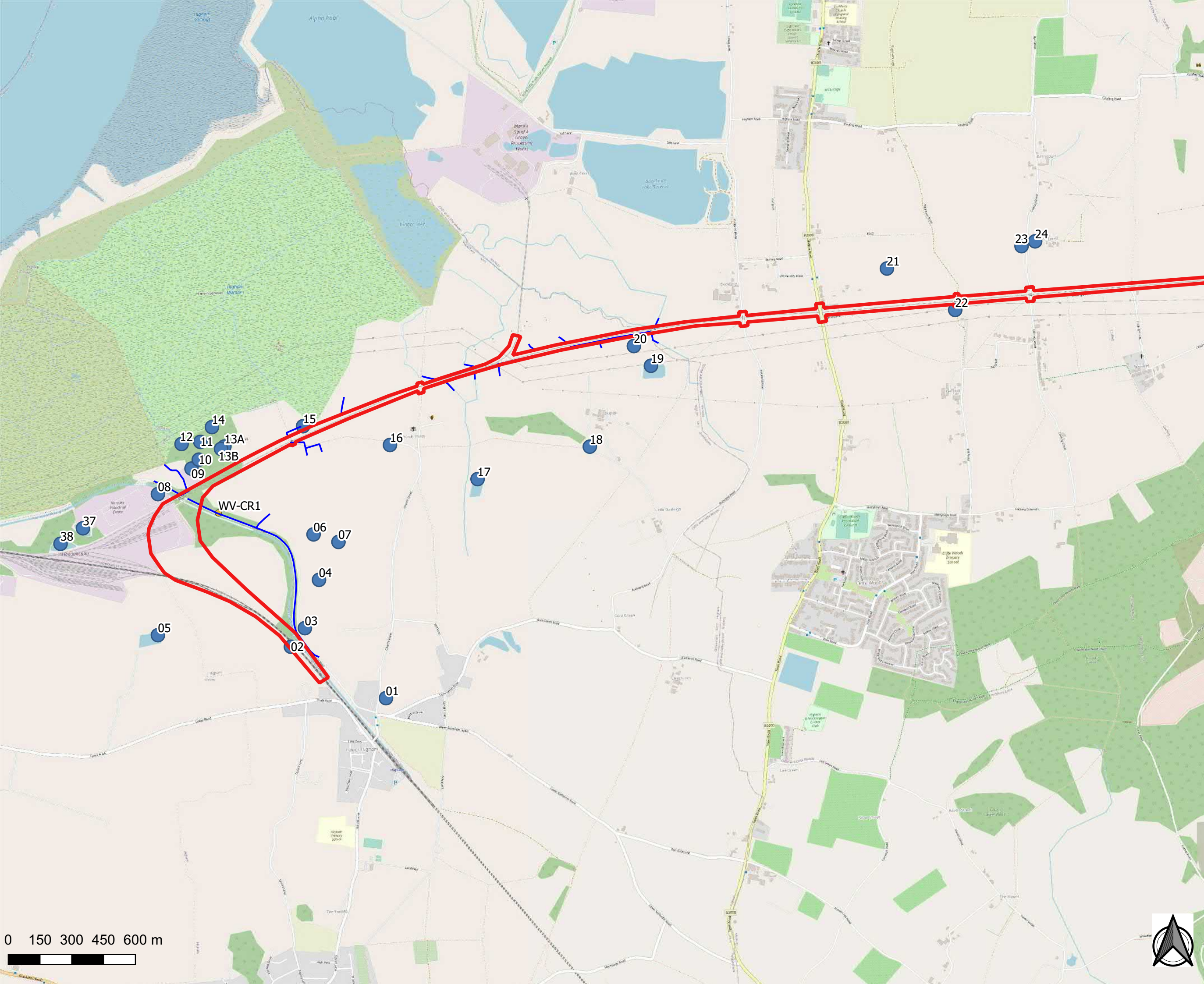
Available: <https://www.gov.uk/guidance/water-voles-protection-surveys-and-licences>

Appendix A

Water Vole Survey Map and Results

Legend





-  Site Red Line Boundary
-  Water Courses Surveyed for Water Voles
-  Pond Locations and Reference
-  Water Vole Locations

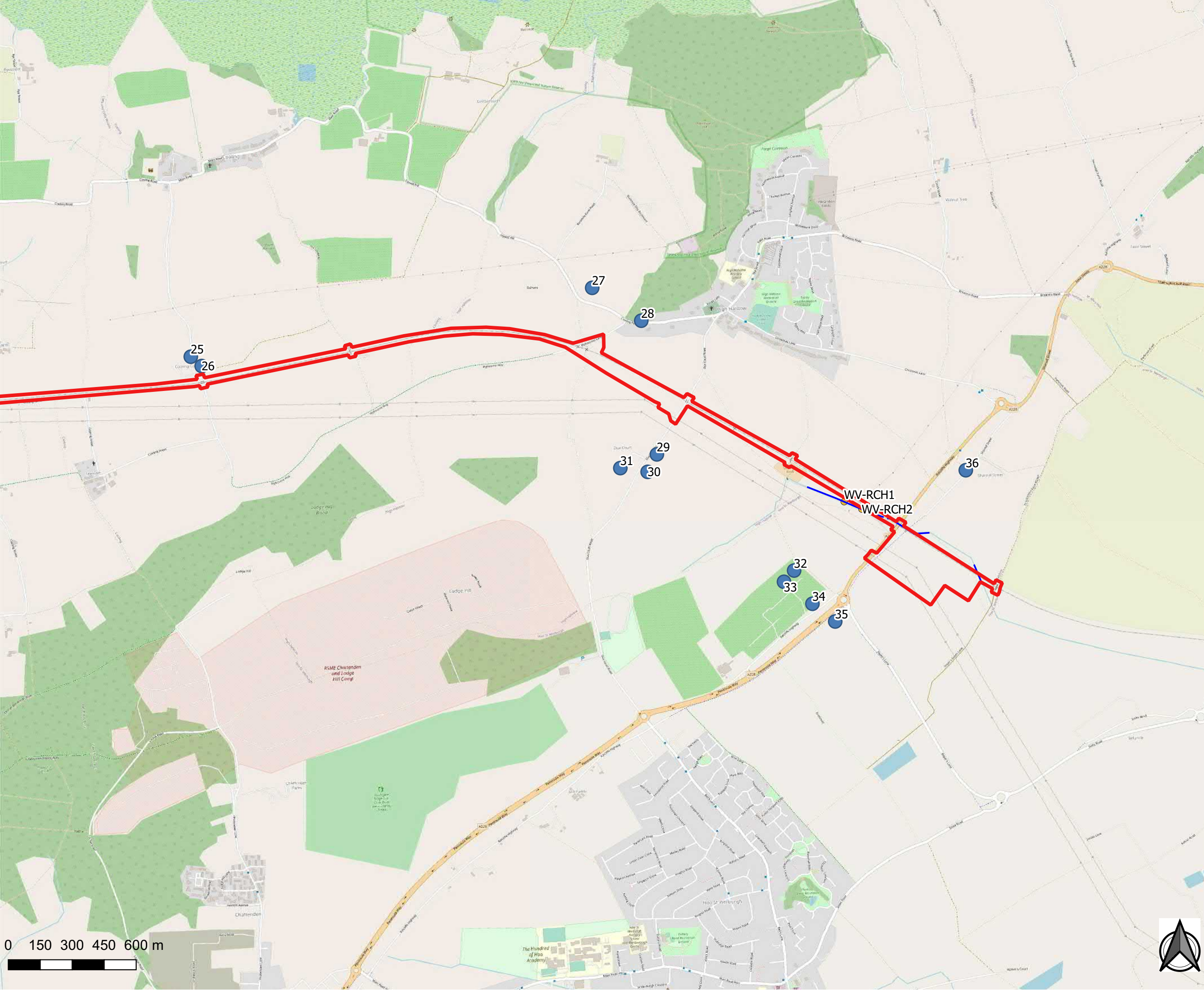


Hoo Station GRIP 3-
Reopening of the Grain
Branch Line for
Passenger Services

Water Vole Survey
Map - (Sheet 1 of 2)

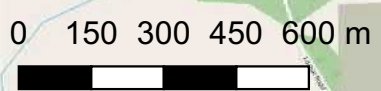
Legend

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Hoo Station GRIP 3-
Reopening of the Grain
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Water Vole Survey
Map - (Sheet 2 of 2)



Appendix B

Photographs

Photographs taken during the Water Vole Surveys



Signs of water voles were identified within wet ditches to the south of the railway west of Ratcliffe Highway in June 2019 (ref WV-RCH1)



Confirmation of presence of water burrows previously identified in 2019 (ref WV-RCH1)



Water vole dropping alongside Canal Road (ref WV-CR1)



Potential water vole burrow and droppings (ref WV-RCH2)