



NETWORK RAIL SMD FRAMEWORK: FARNBOROUGH NORTH AND HATCHES LEVEL CROSSINGS CLOSURE

Ecological Constraints Report

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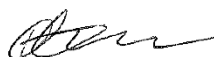
Network Rail SMD Framework: Farnborough North and Hatches Level Crossings Closure

Ecological Constraints Report

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1 Executive Summary

As part of their Route Strategic Plan for the Wessex route, Network Rail propose to permanently close both Farnborough North and Hatches Level Crossings and construct new footbridges in their place. Additional user group access improvements at the The Hatches No.1 Bridge, The Hatches, and Spencer Close also form part of the development proposals for Farnborough North Railway Station.

Arcadis Consulting (UK) Ltd was commissioned in November 2020 by Osborne to produce an Ecological Constraints Report to inform the feasibility studies into each of the user group improvement options identified for the development proposal and present the findings of the ecological constraints study, identify any potential ecological constraints associated with the proposal, recommend appropriate mitigation, and identify any requirement for further surveys.

Table 1 summarises the ecological constraints and recommendations for each element of the improvement works; it is noted that at each location the ecological effects of the various options is similar. Further detail on the ecological effects of the development options is presented in Section 4 ‘Ecological Constraints and Recommendations’.

Table 1: Ecological Constraints for Farnborough North Railway Station Development Proposals

| Site name and option(s) | Potential for construction works to impact: | | | |
|---|--|--------------------------------|----------------------------------|--------------------------|
| | Statutory designated sites | Non-statutory designated sites | Habitats and plants [†] | Protected animal species |
| Farnborough North Level Crossing All options | No | No | Yes | Yes |
| The Hatches No.1 Bridge All options | No | Yes | Yes | Yes |
| The Hatches All options | No | No | Yes | Yes |
| Spencer Close All options | No | No | Yes* | Yes* |
| Key to recommendations: | | | | |
| | Further ecological surveys or checks are recommended to confirm species presence/likely absence, assess habitats, and/or inform mitigation where required. | | | |
| | Specific construction phase mitigation and protection measures are recommended to be implemented to ensure no adverse impacts to ecological receptors. | | | |
| | No impacts are anticipated. However, precautionary measures/best working practices should be implemented where required. | | | |

[†]Additionally, an Arboricultural Assessment is recommended for all sites.

*The Spencer Close site could not be fully assessed for potential to support protected or invasive species due to access restrictions. To address this limitation further ecological survey/checks are recommended to confirm species presence/likely absence, assess habitats, and inform mitigation (see Section 4.4).

The construction phases of all current options have the capacity to impact on certain protected habitats and species if not mitigated for, which could result in contravention of nature conservation legislation. The recommendations in Section 4 aim to address all ecological impacts identified through appropriate mitigation and further survey where necessary.

2 Introduction

2.1 Overview

Arcadis Consulting (UK) Ltd was commissioned in November 2020 by Osborne to produce an Ecological Constraints Report to inform the feasibility studies for the development proposal to improve user group access at Farnborough North Railway Station and The Hatches level crossing in Hampshire.

This report has been prepared to present the findings of any potential/actual ecological constraints associated with the four locations for improvement works (as presented in Sections 2.2 and 2.3). It also provides appropriate mitigation where necessary and identifies any requirement further ecological surveys.

Actual and potential ecological constraints are presented in Section 4 and have been identified based on a preliminary ecological appraisal carried out for each of the four sites in 2020 by Naturally Wild and surveys carried out by Hampshire County Council in 2016. Aerial photographs were also reviewed and professional judgement used.

2.2 Site Locations

2.2.1 Farnborough North Level Crossing

Plate 1 illustrates the location of Farnborough North Level Crossing, located at National Grid Reference (NGR): SU 8774 5662. It is situated to the north of Farnborough town centre in the postcode area of GU14 8AQ and serves the North Downs Line (Reading to Gatwick).

The existing level crossing is a hybrid, acting as both a footpath level crossing with miniature stop lights for pedestrians in conjunction with a user works crossing and attendant to manage the public's safety and to operate the user works crossing for approaching vehicles.

The crossing provides pedestrian/cyclist/authorised vehicle egress/ingress between the station and railway property to the east, including Frimley and Frimley Green residential areas, outdoor recreation sites and private fishing lakes within the Frimley Hatches and the Blackwater Valley. From the east, the crossing enables access to nearby schools, residential areas and the town centre.

Additionally, there are separate proposals to demolish an existing warehouse and depot area, which would be replaced with a housing development (Ref 1).

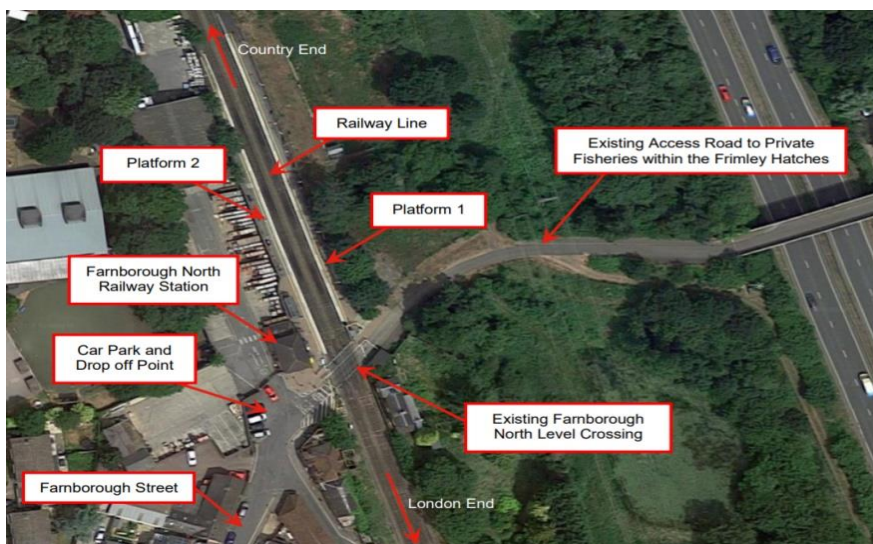


Plate 1: Location of Farnborough North Level Crossing (Ref 1; Google 2020)

2.2.2 The Hatches No.1 Footbridge

Plate 2 illustrates (with an orange dot) the location of the Hatches No.1 Footbridge Bridge (NGR: SU 8756 8873). The footbridge carries the recreational Blackwater Valley Path over the Blackwater River (a tributary of the Loddon and sub-tributary of the Thames) within Frimley Hatches and is located approximately 0.2km east of Farnborough North Level Crossing.

Situated within the Blackwater Valley 'green corridor', existing authorised vehicle access to this area is enabled from the west over the railway line via Farnborough North Level Crossing and then across the A331 carriageway and the Blackwater River via an accommodation bridge. Authorised vehicles include those accessing the private fishing lakes and utility companies.

Measuring a span of 7 m and a deck width of 3 m, the Hatches No.1 Footbridge comprises a single-span deck surfaced with concrete planks, supported by reinforced concrete beams and pre-cast abutments; with timber post and rail parapets.

A structural assessment of the footbridge in 2017 assessment concluded that the inner beams had either failed to provide a 3-tonne live load capacity or just about reached 3-tonnes live load capacity dependent on assumed the reinforcement arrangement (Ref 2).

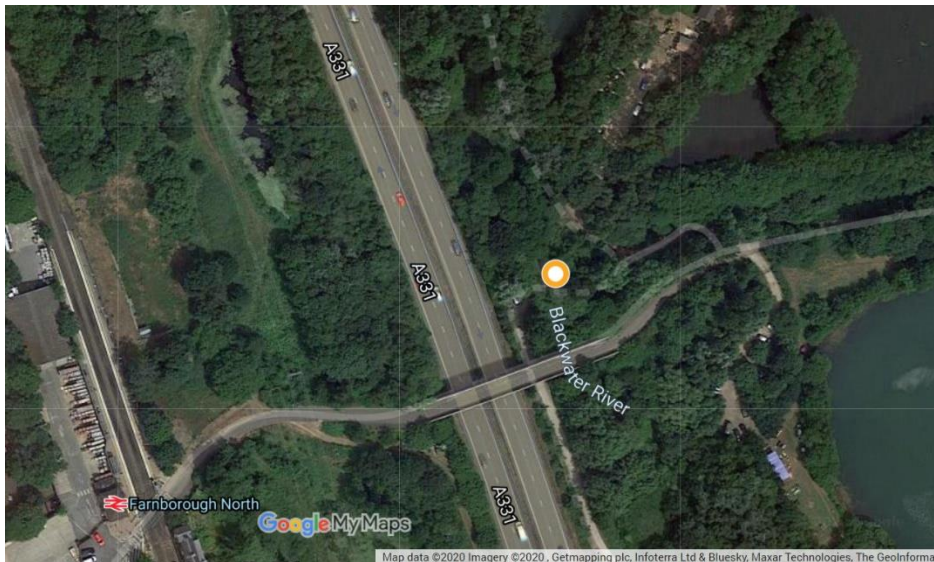


Plate 2: Location of The Hatches No.1 Bridge (Google, 2020)

2.2.3 The Hatches Pedestrian Level Crossing

Plate 3 illustrates (with an orange dot) the location of the Hatches Pedestrian Level Crossing (NGR: SU 8856 3775). The level crossing is situated on the western periphery of The Hatches residential area in Frimley Green; postcode area GU16 6HG. This crossing provides pedestrian access from Frimley Green to Farnborough North Station located approximately 0.6km west, including the Blackwater River amenity areas.

The footpath level crossing at the Hatches is currently the third highest Fatalities and Weighted Injuries (FWI) scoring footpath crossing in Wessex (Ref 2).

The Hatches currently comprises a public footpath crossing with signage, gates and whistleboards on the rail approaches, and is used by the local community including Farnborough North Station commuters, pedestrian and cyclist user groups including school children.



Plate 3: Location of The Hatches Pedestrian Level Crossing (Google, 2020)

2.2.4 Spencer Close

Plate 4 illustrates (with an orange dot) the location of a potential new crossing at Spencer Close (NGR: SU 8856 4657). The close is a residential cul-de-sac in Frimley Green located 0.2km south of The Hatches in the postcode area of GU16 6HN. The option considers the feasibility of constructing a new bridge over the railway line at this location to replace the current pedestrian level crossing at The Hatches.

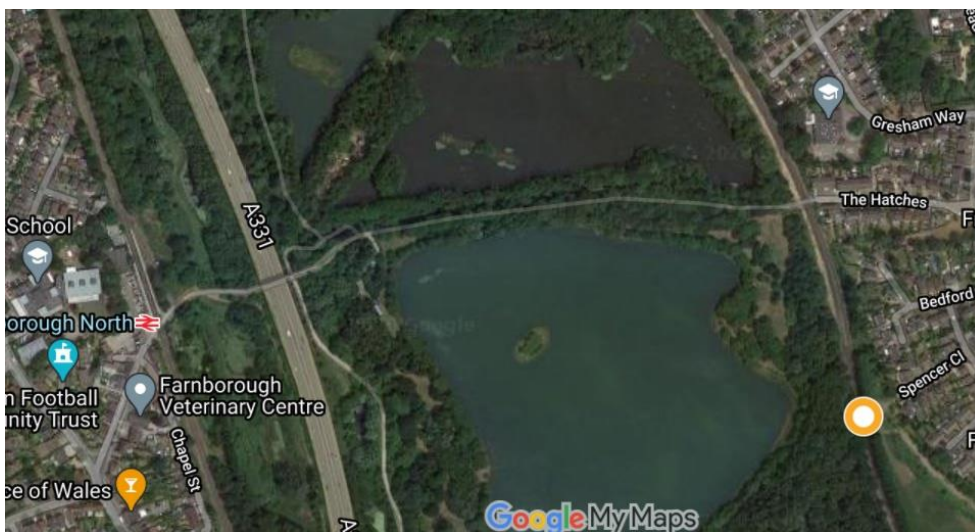


Plate 4: Location of Spencer Close (Google, 2020)

2.3 Proposed Options

2.3.1 Farnborough North Level Crossing

The permanent closure of the existing level crossing and construction of a new station footbridge to provide pedestrian access over the railway line is proposed. However, the closure of the user works level crossing will block the existing vehicular access route linking Farnborough North and the fisheries to the east, and so a permanent vehicle diversion route needs to be considered to provide alternative access. The options considered for the level crossing are presented below.

Table 2: Feasibility Options for Farnborough North Level Crossing

| Option Number | Option Summary |
|---------------|--|
| Option 1B | Remove existing level crossing and replace with a new covered footbridge, staircases and lift shafts. The option proposes the closure of the Farnborough North level crossing, to be replaced with the installation of a new single span covered footbridge with 2 no. staircases and 2 no. lift shafts towards the London End of the platform, near the existing level crossing with the lifts pointing to the south east. |
| Option 2 | Remove existing level crossing and replace with a new covered footbridge, staircases and lift shafts near the centre of the station platform. The option proposes the closure of the Farnborough North level crossing, to be replaced with the installation of a new covered single span footbridge with 2 no. staircases and 2 no. lift shafts near the centre of the station, with the staircases pointing to the south-east and the lifts pointing to the north-west. This option will also require for the demolition of the building in the Builder's Depot to the west and the trees to the east of the station, opening up space for the construction of the new footbridge, staircases and lift shafts. |
| Option 4B(i) | Remove existing level crossing and replace with a new covered footbridge, staircases and lift shafts where the existing level crossing is currently located. Remove existing level crossing and replace with a new covered footbridge, 2 no. staircases and 2 no. lift shafts where the existing level crossing is currently located with all structures offset 4.5 metres from the railway track. |
| Option 4B(ii) | Remove existing level crossing and replace with a new covered footbridge, staircases and lift shafts where the existing level crossing is currently located. Remove existing level crossing and replace with a new covered footbridge, 2 no. staircases and 2 no. lift shafts where the existing level crossing is currently located with all structures offset 2.5 metres from the railway track. |

2.3.2 The Hatches No.1 Footbridge

To facilitate the closure of the Farnborough North Level Crossing, a diversion is required for authorised vehicle users to gain access into The Fisheries. The only viable alternative route for vehicles is from the A331 Coleford Interchange to the south. From this junction the route would take users northward along the Blackwater Valley Route between the A331 and the Blackwater River, before requiring them to cross the river at The Hatches No.1 Bridge into the Fisheries. Maintenance vehicles would then continue on over the A331, via B2075, to the pumping station.

The current Hatches No.1 Footbridge is neither of sufficient capacity nor width to carry vehicles. It will require complete replacement in order to carry both the light traffic it previously carried and the additional heavier traffic diverted from the closed Farnborough North level crossing.

The options considered for the Hatches No.1 Footbridge are presented below.

Table 3: Feasibility Options for The Hatches No.1 Footbridge

| Option Number | Option Summary |
|---------------|---|
| Option 1 | <p>Do Nothing. This option would entail leaving the existing bridge structure in its current condition. <u>On the basis that this would require the footbridge to remain closed to vehicles, this option is clearly not viable.</u></p> |
| Option 2 | <p>Repair / Strengthen / Widen Existing Bridge. For widening of the existing bridge to be considered a viable option, the existing portion of the widened deck would be required to carry its share of full highway loading to current standards. However, repairing the existing deck would still only provide up to 3 tonnes live load capacity. Even if the actual concrete strength of the main beams was to be determined by intrusive investigation, it is highly unlikely that this would increase the capacity sufficiently. Furthermore, the geometric and material limitations of the main beams are considered such that strengthening of the existing deck would also fail to provide the required capacity. <u>Therefore, widening of the existing bridge in combination with either repair or strengthening of the existing deck is not considered viable.</u></p> |
| Option 3 | <p>Remove Existing Deck and Build New Deck on Widened Existing Abutments. The construction of the current abutments appears to comprise precast concrete panels with mass concrete backing behind which extends 700mm beyond the rear face of the abutment capping beam. This gives a total abutment thickness of the order of 1m thick it is therefore considered unlikely that they would be able to support their share of a new deck subjected to full highway loading to current standards. In addition, even if the existing abutments did not fail, the risk of differential settlement between the old and widened sections of abutment would be unacceptably high. <u>Based on the above, this option is not considered viable.</u></p> |
| Option 4 | <p>Build New PC Beam and Infill Deck on New Abutments. This option would entail building new abutments behind and extending to the south of the existing abutments. Precast, pre-stressed concrete beams would then be lifted into position on rubber bearing strips on the new abutments and the gaps between the beams sealed. The reinforcement for the infill slab would then be fixed prior to pouring the infill concrete to form a solid, simply supported slab. Upon completion of the slab, stringcourses, waterproofing, backfill, parapets, kerbs and surfacing would finally be added to complete the structure. This option would require a slightly longer span than for the existing structure as the new bridge would effectively over-span the existing abutments.</p> |
| Option 5 | <p>Build New Steel Composite Deck on New Abutments. This option would also entail building new abutments behind and extending to the south of the existing abutments. Fabricated steel beams would then be lifted into position on temporary steel bearing plates on the new abutments and permanent formwork installed between the beams. The reinforcement for the top slab and end diaphragm would then be fixed prior to pouring the deck concrete to form a composite deck integral with the abutments. Upon completion of the slab, stringcourses, waterproofing, backfill, parapets, kerbs and surfacing would finally be added to complete the structure. As for the precast beam and infill option, this would require a slightly longer span than for the existing structure as the new bridge would effectively over-span the existing abutments.</p> |
| Option 6 | <p>Build New Reinforced Concrete (RC) Slab Deck on New Abutments. This option would also entail building new abutments behind and extending to the south of the existing abutments. A falsework structure would then need to be erected, founded on the riverbed, in order to support the formwork for the RC slab, construction of which would then follow. Rubber bearing strips would then be placed on the new abutments prior to fixing the steel reinforcement and then placing the concrete to form a solid, simply supported RC slab. Upon completion of the slab, stringcourses, waterproofing, backfill, parapets, kerbs and surfacing would finally be added to complete the structure. Again, this option would require a slightly longer span than for the existing structure as the new bridge would effectively over-span the existing abutments.</p> |

2.3.3 The Hatches Pedestrian Level Crossing

Site constraints on the level crossing and adjacent residential area are considerations for the two options presented below.

Table 4: Feasibility Options for The Hatches

| Option Number | Option Summary |
|---------------|--|
| Option 1A | <p>New Footbridge at Hatches (Stepped Access Only). Construction of a new footbridge with a stepped only access and cycle gutter at the location of the existing level crossing at Hatches.</p> <p>This option proposes the closure of the Hatches level crossing and installation of a new single span covered footbridge with 2 no. staircases only (including cycling rail), to the North side of the existing level crossing.</p> <p>The existing level crossing is to remain operational while the new footbridge is being constructed, eliminating the need for alternative crossings to be developed or completely disconnecting the local residents from what is on the west side of the tracks. The existing level crossing is to be decommissioned when the bridge is complete and closed off with fence.</p> |
| Option 1B | <p>New Footbridge at Hatches (Ramp Access Only). Construction of a new footbridge with a ramp only access at the location of the existing level crossing at Hatches.</p> <p>This option proposes the closure of the Hatches level crossing and installation of a new single span covered footbridge with 2 no. ramps only, to the North side of the existing level crossing.</p> <p>The existing level crossing is to remain operational while the new footbridge is being constructed, eliminating the need for alternative crossings to be developed or completely disconnecting the local residents from what is on the west side of the rail. The existing level crossing is to be decommissioned when the bridge is complete and closed off with fence.</p> <p>Ramps in this option are to point South and a footpath extension is to be undertaken locally in front both ramps, connecting the existing footpaths to the new structure.</p> |

2.3.4 Spencer Close

If Options 1A and 1B are unviable due to limited space availability, an alternative location for the new crossing has been investigated at Spencer Close, approximately 200m south of The Hatches current crossing. This alternative location aims to avoid any land purchase and demolition of nearby residential properties associated with Options 1A and 1B and as a result reduces the impact on The Hatches residential neighbourhood (Ref 3).

Table 5: Feasibility Options for Proposed Footbridge at Spencer Close

| Option Number | Option Summary |
|---------------|---|
| Option 2 | <p>New Footbridge at Spencer Close (Low Gradient Ramp). Construction of a new footbridge with a stepped and a low gradient ramped access South of the location of the existing level crossing at Spencer Close.</p> <p>This option proposes the closure of the Hatches level crossing and installation of a new single span covered footbridge with 2 no. low gradient ramps and 2no. staircases, South of the existing Hatches level crossing at Spencer Close.</p> <p>The existing level crossing is to remain operational while the new footbridge is being constructed, eliminating the need for alternative crossings to be developed or completely disconnecting the local residents from what is on the west side of the rail. The existing level crossing is to be decommissioned when the bridge is complete and closed off with fence.</p> <p>Ramp on the east side of the track is to point south. Staircase on the east side of the track is to point east. This would allow the staircase and ramp to have a similar starting point. A footpath extension is to be undertaken locally in front of the staircase and ramp, connecting the existing footpath at Spencer Close to the new structure.</p> |
| Option 3 | <p>New Footbridge at Spencer Close (High Gradient Ramp). Construction of a new footbridge with a stepped and a high gradient ramped access South of the location of the existing level crossing at Spencer Close.</p> <p>This option proposes the closure of the Hatches level crossing and installation of a new single span covered footbridge with 2 no. high gradient ramps (overall less long) and 2no. staircases, South of the existing Hatches level crossing at Spencer Close.</p> <p>The existing level crossing is to remain operational while the new footbridge is being constructed, eliminating the need for alternative crossings to be developed or completely disconnecting the local residents from what is on the west side of the rail. The existing level crossing is to be decommissioned when the bridge is complete and closed off with fence.</p> |

3 Ecological Baseline

3.1 Ecological Appraisal: 2016

3.1.1 The Hatches No.1 Footbridge

Hampshire County Council Ecology Team (HCCET) carried out an ecological appraisal in 2016 in relation to the proposal to upgrade The Hatches No.1 Footbridge to facilitate vehicular access. The following baseline summarises the data presented in HCCET's report (Ref 4).

The desk study obtained records held by the Hampshire Biodiversity Information Centre (HBIC) supplemented an extended Phase 1 ecological survey that was carried out in October 2016. The report presented a detailed assessment of the habitats and potential for protected species within the footbridge's study area.

3.1.1.1 Habitats and Plants

The survey identified four habitat types (running water (Blackwater River), marginal vegetation, woodland, and scrub) as well as bare ground.

No protected or notable plant species were identified either through desk study or the site survey. The potential impacts identified were those associated with general ground disturbance during construction and associated structural works over a watercourse.

3.1.1.2 Species

3.1.1.2.1 Desk Study

Desk study returned a small number of protected species records within a 500 m radius of the site, none of which are within the predicted zone of influence. The most relevant species records were for the four common reptile species: adder (*Vipera berus*), grass snake (*Natrix natrix*), slow-worm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*). There were numerous records of grass snake, slow-worm and common lizard from habitats situated within 100 m to 200 m of the site, demonstrating that areas of more open grassland in this immediate landscape provided suitable conditions for these species. The bulk of records were situated to the west of the A331. The various bird species from within the data search were dominated by typical species associated with open water habitats.

The species listed are considered noteworthy on account of their inclusion within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (Ref 5) as species of principal importance or due to their conservation status at national or county level (i.e. are Nationally/County Rare/Scarce).

3.1.1.2.2 Invertebrates

The site supported a moderate diversity of terrestrial and aquatic habitats and therefore it was expected that a good range of invertebrate species would be present. However, there were no known records of nationally rare invertebrate species and the site overall was considered to offer low potential for supporting rare/notable invertebrate species.

3.1.1.2.3 Amphibians

Overall, the site was considered to offer high potential for supporting common amphibians such as common toad (*Bufo bufo*) and common frog (*Rana temporaria*). There were no records of great crested newt (*Triturus cristatus*) within the HBIC database and research using online sources did not reveal any records of the species in the Farnborough area.

3.1.1.2.4 Reptiles

The surveyed area supported very limited suitable reptile habitat and the woodland-type setting was broadly unsuitable due to shading. There are many existing records of common reptile species locally and it was considered likely that more mobile species such as grass snake would occur within proximity to the footbridge occasionally. Overall, the surveyed area was considered to offer low potential for supporting reptiles.

3.1.1.2.5 Birds

Areas of dense woodland and scrub adjacent to the footbridge were considered to offer high potential for supporting a small number of common and widespread breeding bird species. The presence of old bird nests beneath the footbridge itself indicated that species such as grey wagtail (*Motacilla cinerea*) have bred there in the past. The river was suitable for supporting kingfisher (*Alcedo atthis*), but the banks within the surveyed area were not of sufficient height to provide nesting opportunities.

3.1.1.2.6 Bats

Footbridge: The footbridge offered minimal potential for supporting roosting bats. Overall, the footbridge was considered to offer negligible potential for supporting roosting bats.

Trees: All trees within the immediate survey area were considered to offer negligible suitability for supporting bat roosts. The most substantial tree was a crack willow (*Salix fragilis*) situated immediately south-west of the footbridge. However, this specimen had no features with potential to support roosting bats.

Foraging and Commuting: The entire surveyed area and immediate surrounds were considered suitable for supporting foraging and commuting bats. Overall, the site was considered to offer moderate potential for supporting small numbers of commuting/foraging bats, highly likely to be common and widespread species or urban/suburban habitats.

3.1.1.2.7 Hazel Dormouse

There were no records of hazel dormouse (*Muscardinus avellanarius*) within the surrounding landscape and the habitat, being of relatively recent origin and lacking a diverse, dense understorey, was sub-optimal. Overall, the site was considered to offer negligible-low potential for supporting hazel dormouse.

3.1.1.2.8 Otter and Water Vole

No evidence of otter (*Lutra lutra*) or water vole (*Arvicola amphibius*) presence was noted along either side of the river channel within the surveyed area.

There were no potential resting places or holts within the surveyed area and it was considered that the surveyed area was of low potential for supporting otters. Discussions with the local countryside ranger revealed that there were no records of otter within proximity to these works.

No evidence of water vole activity was noted within the surveyed area and it is considered that there was low potential for water voles to occur. Discussions with the local countryside ranger revealed that there are no records of water vole within proximity to these works.

3.1.1.2.9 Badger

No evidence of badger (*Meles meles*) activity was recorded and the surveyed area did not contain any active setts, latrines or well-worn mammal tracks. Overall, the site of the footbridge itself was considered to offer low potential for supporting badger.

3.2 Ecological Appraisal: 2020

Ecological scoping assessments of the four sites were undertaken by Naturally Wild during September 2020 (Appendix A). Information from Naturally Wild's reports have been used together with the data supplied by HCCET with due recognition to compile the ecological constraints tables in Section 4.

The ecological scoping assessment data is considered to be valid for between 12 and 24 months since the survey and desk studies were undertaken. Depending on the time elapsed between the September 2020 ecological survey and the commencement of construction, an update assessment may be necessary if the Scoping Assessment becomes outdated.

4 Ecological Constraints and Recommendations

4.1 Farnborough North Level Crossing

The table below identifies the ecological constraints and mitigation associated with Farnborough North Level Crossing proposal (Ref 6). Relevant supporting ecological legislation and policy is presented in Appendix B.

Table 6: Farnborough North Level Crossing Ecological Constraints

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|--|--|-------------------------|--|
| Statutory designated sites (within 2 km of the site) | | | |
| | Thames Basin Heaths Special Protection Area (SPA) and Special Area of Conservation (SAC) surrounds the site, closest point 1.7 km south-east | No impacts anticipated. | N/A |
| | Basingstoke Canal Site of Special Scientific Interest (SSSI) - south and east, closest point 1.6 km east | | |
| | Ash to Brookwood Heaths SSSI - 1.9 km east | | |
| Non-statutory designated sites (within 2 km of the site) | | | |
| | Hay Meadow West of Coleford Bridge Site of Nature Conservation Interest (SNCI) - NGR: SU883560 85 m south-east | No impacts anticipated. | N/A |
| | Coleford Bridge SNCI - NGR: SU883560 85 m south-east | | |
| | Frimley Hatches SNCI (including Frimley reedbeds) - NGR: SU881568 319 m east | | |
| Habitats and plants | | | |
| | All habitats | Habitat loss. | Retained habitats should be protected and maintained in their existing pre-construction condition. New planting should be provisioned to replace any habitats lost, to ensure no net loss to biodiversity as required by policy. |

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| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|--------------------------|--|---|---|
| Trees | A variety of tree species were present within the site. | Loss of or damage to trees during enabling works. | An Arboricultural Assessment should be undertaken. Trees and woodland habitats located adjacent to the works should be maintained in their existing pre-construction condition and not encroached upon by site vehicles and personnel. New planting should be provisioned to replace any trees/shrubs lost. |
| Blackwater River | Runs north to south approximately 490 m east of the site. | Indirect and temporary construction impacts such as noise and dust. | Appropriate pollution prevention control should be included within Method Statements for the works ensuring protection of the natural environment. These should be included within the Construction Environmental Management Plan (CEMP) or similar document for the development proposal. |
| Fishing lakes | Present 50 m west of the site. | Indirect and temporary construction impacts such as noise and dust. | Method Statements for the works ensuring protection of the natural environment should be included within the CEMP or similar document for the development proposal. |
| Protected animal species | | | |
| Great crested newt | Five ponds were present within 500 m of the site, closest c.70 m east. Great crested newt was considered unlikely to be present on site. | No impacts anticipated. | N/A |
| Reptiles | The site was considered to be of high suitability for all common species of reptiles. The data search returned records of adder, grass snake, slow-worm and common lizard within 1 km of the site. | Loss of habitat, injury, and/or mortality during enabling works. | Based on the likely limited footprint of the proposed development within suitable habitat no further survey is recommended. Instead a precautionary approach with respect to vegetation clearance should be taken whereby an ecological method statement is prepared and an Ecological Clerk of Works (ECoW) employed. An ECoW should oversee the implementation of a two-stage vegetation clearance methodology using hand tools to encourage reptiles to leave the works area of their own accord. Removal of any potential hibernation sites should be avoided where possible, or where necessary undertaken during the summer months (potential hibernation sites should be left undisturbed during winter months; November to February inclusive). |

Network Rail SMD Framework: Farnborough North and Hatches Level Crossings Closure

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|---|---|---|--|
| Breeding birds | The site was considered to be of moderate suitability for breeding birds. | Damage to or loss of nests, and loss of habitat. | Where possible, all vegetation clearance should be undertaken between September and February, inclusive (i.e. outside of the bird breeding season). Should this not be possible, all vegetation to be cleared should be surveyed by an ECoW for breeding birds no more than 48 hours ahead of the proposed clearance. Replacement habitat should be provided to mitigate for the loss of nest sites. |
| Bats | One mature alder (<i>Alnus glutinosa</i>) tree (approximate NGR: SU 87765 56638) within the site was identified as having low bat roost potential due to being covered with ivy (<i>Hedera helix</i>). The vegetation on and surrounding the site provided some suitable foraging habitat for bats. | Disturbance to bats, and/or damage or destruction of a roost. Fragmentation and loss of foraging habitat. | Works to or in proximity to this tree should be avoided. If this is not possible, the tree should be soft felled (or whatever other works are required to the tree) under the oversight of an ECoW. New planting should be provisioned to replace any habitats lost. |
| Hazel dormouse | It was considered unlikely that hazel dormouse was using the site. | No impacts anticipated. | N/A |
| Water vole | The habitats on site were not suitable to support water vole. | No impacts anticipated. | N/A |
| Otter | The habitats on site were not suitable to support otter. | No impacts anticipated. | N/A |
| Badger | There was no evidence of use of the site by badger. However, badgers are a highly mobile species and range widely when foraging. | Entrapment. | Any trenches or excavations should be covered overnight or a ramp provided for escape of any animals that may otherwise become trapped. |
| Hedgehog (<i>Erinaceus europaeus</i>) | Habitats on site were considered suitable for hedgehog. | Disturbance, injury, and/or mortality during enabling works and construction. | Any dense vegetation/log-brash piles within areas to be cleared should be checked by an ECoW for hedgehog presence prior to removal. If an active hedgehog is encountered it should be allowed to safely vacate the area or be placed in a suitable and safe area of habitat by the ECoW. If a hibernating hedgehog is encountered it should be left undisturbed with a suitable buffer of undisturbed vegetation until their hibernation period is over and the nest vacated. |

4.2 The Hatches No.1 Footbridge

The table below identifies the ecological constraints and mitigation associated with The Hatches No.1 Footbridge proposal (Ref 7). Relevant supporting ecological legislation and policy is presented in Appendix B.

Table 7: The Hatches No.1 Bridge Ecological Constraints

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|--|---|---|--|
| Statutory designated sites (within 2 km of the site) | | | |
| | Thames Basin Heaths SPA and SAC surrounds the site, closest point 1.6 km south-east | No impacts anticipated. | N/A |
| | Thursley, Ash, Pirbright, and Chobham SAC - 1.6 km south-east | | |
| | Basingstoke Canal SSSI - 1.4 km east | | |
| | Ash to Brookwood Heaths SSSI - 1.6 km south-east | | |
| Non-statutory designated sites (within 2 km of the site) | | | |
| | Frimley Hatches SNCI (including Frimley reedbeds) - NGR: SU881568 60 m west | Indirect and temporary construction impacts such as noise and dust. | Method Statements for the works ensuring protection of the natural environment should be included within the CEMP or similar document for the development proposal. |
| | Hay Meadow West of Coleford Bridge SNCI - NGR: SU883560 842 m south-east | No impacts anticipated. | N/A |
| | Coleford Bridge SNCI - NGR: SU883560 842 m south-east | | |
| Habitats and plants | | | |
| | All habitats | Habitat loss. | Retained habitats should be protected and maintained in their existing pre-construction condition. New planting should be provisioned to replace any habitats lost, to ensure no net loss to biodiversity as required by policy. |

Network Rail SMD Framework: Farnborough North and Hatches Level Crossings Closure

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|---|--|--|---|
| Trees and woodland | A variety of tree species within woodland were present within the site. | Loss of or damage to trees during enabling works. | An Arboricultural Assessment should be undertaken. Trees and woodland habitats located adjacent to the works should be maintained in their existing pre-construction condition and not encroached upon by site vehicles and personnel. New planting should be provisioned to replace any trees/shrubs lost. |
| Blackwater River | The footbridge crosses Blackwater River. | Direct temporary and potentially permanent adverse construction impacts such as noise, watercourse pollution from dust including uncontrolled surface water run-off, and increased turbidity and suspended solids. | Appropriate pollution prevention control should be included within Method Statements for the works ensuring protection of the natural environment. These should be included within the CEMP or similar document for the development proposal. |
| Fishing lakes | Present 50 m east of the site. | Indirect and temporary construction impacts such as noise and dust. | Method Statements for the works ensuring protection of the natural environment should be included within the CEMP or similar document for the development proposal. |
| Indian (Himalayan) balsam (<i>Impatiens glandulifera</i>) | Present in several places, particularly on the riverbanks. This species is non-native and highly invasive and is listed under Schedule 9 of the Wildlife and Countryside Act (WCA) 1981 (as amended; Ref 14). It is an offence to cause any species listed on Schedule 9 of the Act to spread in the wild. | Spread of invasive non-native species leading to biodiversity loss. | A Method Statement for treatment, eradication, and prevention of spread of Indian (Himalayan) Balsam should be included within the CEMP or similar document for the development proposal. |
| Protected animal species | | | |
| Great crested newt | Five ponds and five fishing lakes within 500 m of the site (two of which within 250 m of the site). Great crested newt was considered unlikely to be present on site. | No impacts anticipated. | N/A |

Network Rail SMD Framework: Farnborough North and Hatches Level Crossings Closure

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|-----------------------|--|--|---|
| Reptiles | The site was considered to be of moderate suitability for all common species of reptiles. The data search returned records of adder, grass snake, slow-worm and common lizard within 1 km of the site. | Loss of habitat, injury, and/or mortality during enabling works. | Based on the likely limited footprint of the proposed development within suitable habitat no further survey is recommended. Instead a precautionary approach with respect to vegetation clearance should be taken whereby an ecological method statement is prepared and an Ecological Clerk of Works (ECoW) employed. An ECoW should oversee the implementation of a two-stage vegetation clearance methodology using hand tools to encourage reptiles to leave the works area of their own accord. Removal of any potential hibernation sites should be avoided where possible, or where necessary undertaken during the summer months (potential hibernation sites should be left undisturbed during winter months; November to February inclusive). |
| Breeding birds | The site was considered to be of high suitability for nesting birds, with the trees and shrubs providing suitable nesting habitat for a variety of bird species. | Damage to or loss of nests, and loss of habitat. | Where possible, all vegetation clearance should be undertaken between September and February, inclusive (i.e. outside of the bird breeding season). Should this not be possible, all vegetation to be cleared should be surveyed by an ECoW for breeding birds no more than 48 hours ahead of the proposed clearance. Replacement habitat should be provided to mitigate for the loss of nest sites. |
| Bats | None of the trees on site were considered to be suitable for roosting bats. However, the site and immediate surroundings provided good and well-connected foraging habitat for a range of bat species. | Fragmentation and loss of foraging habitat. | New planting should be provisioned to replace any habitats lost. |
| Hazel dormouse | It was considered unlikely that hazel dormouse was using the site. | No impacts anticipated. | N/A |
| Water vole | The habitats on site were not suitable to support water vole. | No impacts anticipated | N/A |

Network Rail SMD Framework: Farnborough North and Hatches Level Crossings Closure

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|-----------------------|--|---|--|
| Otter | The habitats on site were not considered suitable to support otter holts. However, the river may be used for foraging and commuting. Otters are a highly mobile species and range widely within their large territories. | Entrapment. | Any trenches or excavations should be covered overnight or a ramp provided for escape of any animals that may otherwise become trapped. |
| Badger | There was no evidence of use of the site by badger. However, badgers are a highly mobile species and range widely when foraging. | Entrapment. | Any trenches or excavations should be covered overnight or a ramp provided for escape of any animals that may otherwise become trapped. |
| Hedgehog | Habitats on site were considered suitable for hedgehog. | Disturbance, injury, and/or mortality during enabling works and construction. | Any dense vegetation/log-brash piles within areas to be cleared should be checked by an ECoW for hedgehog presence prior to removal. If an active hedgehog is encountered it should be allowed to safely vacate the area or be placed in a suitable and safe area of habitat by the ECoW. If a hibernating hedgehog is encountered it should be left undisturbed with a suitable buffer of undisturbed vegetation until their hibernation period is over and the nest vacated. |

4.3 The Hatches

The table below identifies the ecological constraints and mitigation associated with The Hatches development footprint (Ref 8). Relevant supporting ecological legislation and policy is presented in Appendix B.

Table 8: The Hatches Ecological Constraints

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|--|---|---|---|
| Statutory designated sites (within 2 km of the site) | | | |
| | Thames Basin Heaths SPA and SAC surrounds the site, closest point 1.2 km south-east | No impacts anticipated. | N/A |
| | Thursley, Ash, Pirbright, and Chobham SAC, closest point 1.8 km south-east | | |
| | Basingstoke Canal SSSI - 990 m east | | |
| | Ash to Brookwood Heaths SSSI - 1.2 km south-east | | |
| Habitats and plants | | | |
| | All habitats | Habitat loss. | Retained habitats should be protected and maintained in their existing pre-construction condition. New planting should be provisioned to replace any habitats lost, to ensure no net loss to biodiversity as required by policy. |
| Trees | A variety of tree species were present within the site. | Loss of or damage to trees during enabling works. | An Arboricultural Assessment should be undertaken. Trees and woodland habitats located adjacent to the works should be maintained in their existing pre-construction condition and not encroached upon by site vehicles and personnel. New planting should be provisioned to replace any trees/shrubs lost. |
| Blackwater River | Runs north to south approximately 160 m west of the site. | Indirect and temporary construction impacts such as noise and dust. | Appropriate pollution prevention control should be included within Method Statements for the works ensuring protection of the natural environment. These should be included within the CEMP or similar document for the development proposal. |

Network Rail SMD Framework: Farnborough North and Hatches Level Crossings Closure

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|--|---|---|---|
| Fishing lakes | Present 275 m east of the site. | Indirect and temporary construction impacts such as noise and dust. | Method Statements for the works ensuring protection of the natural environment should be included within the CEMP or similar document for the development proposal. |
| Russian Vine (<i>Fallopia baldschuanica</i>) | Russian Vine is present on site directly east of the running line, north of the pedestrian crossing in a strip of unimproved grassland. Although this species is not listed under Schedule 9 of the WCA 1981 (as amended; Ref 14) it is still a highly invasive non-native species. | Spread of invasive non-native species leading to biodiversity loss. | A Method Statement for treatment, eradication, and prevention of spread of Russian Vine should be included within the CEMP or similar document for the development proposal. |
| Protected animal species | | | |
| Great crested newt | One pond (c.460 m west) and four fishing lakes were located within 500 m of the site. Great crested newt was considered unlikely to be present on site. | No impacts anticipated. | N/A |
| Reptiles | The site was considered to be of high suitability for all common species of reptiles. The data search returned records of adder, grass snake, slow-worm and common within 1 km of the site. | Loss of habitat, injury, and/or mortality during enabling works. | Based on the likely limited footprint of the proposed development within suitable habitat no further survey is recommended. Instead a precautionary approach with respect to vegetation clearance should be taken whereby an ecological method statement is prepared and an Ecological Clerk of Works (ECoW) employed. An ECoW should oversee the implementation of a two-stage vegetation clearance methodology using hand tools to encourage reptiles to leave the works area of their own accord. Removal of any potential hibernation sites should be avoided where possible, or where necessary undertaken during the summer months (potential hibernation sites should be left undisturbed during winter months; November to February inclusive). |

Network Rail SMD Framework: Farnborough North and Hatches Level Crossings Closure

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|-----------------------|--|---|--|
| Breeding birds | The site was considered to be of moderate-high suitability for nesting birds, with the trees, shrubs, and scrub providing suitable nesting habitat for a variety of bird species. | Damage to or loss of nests, and loss of habitat. | Where possible, all vegetation clearance should be undertaken between September and February, inclusive (i.e. outside of the bird breeding season). Should this not be possible, all vegetation to be cleared should be surveyed by an EcoW for breeding birds no more than 48 hours ahead of the proposed clearance. Replacement habitat should be provided to mitigate for the loss of nest sites. |
| Bats | None of the trees on site were considered to be suitable for roosting bats. However, the site and immediate surroundings provided good and well-connected foraging habitat for a range of bat species. | Fragmentation and loss of foraging habitat. | New planting should be provisioned to replace any habitats lost. |
| Hazel dormouse | It was considered unlikely that hazel dormouse was using the site. | No impacts anticipated. | N/A |
| Water vole | The habitats on site were not suitable to support water vole. | No impacts anticipated. | N/A |
| Otter | The habitats on site were not suitable to support otter. | No impacts anticipated. | N/A |
| Badger | There was no evidence of use of the site by badger. However, badgers are a highly mobile species and range widely when foraging. | Entrapment. | Any trenches or excavations should be covered overnight or a ramp provided for escape of any animals that may otherwise become trapped. |
| Hedgehog | Habitats on site were considered suitable for hedgehog. | Disturbance, injury, and/or mortality during enabling works and construction. | Any dense vegetation/log-brash piles within areas to be cleared should be checked by an ECoW for hedgehog presence prior to removal. If an active hedgehog is encountered it should be allowed to safely vacate the area or be placed in a suitable and safe area of habitat by the ECoW. If a hibernating hedgehog is encountered it should be left undisturbed with a suitable buffer of undisturbed vegetation until their hibernation period is over and the nest vacated. |

4.4 Spencer Close

The table below identifies the ecological constraints and mitigation associated with the proposed Spencer Close footbridge proposal (Ref 9). Relevant supporting ecological legislation and policy is presented in Appendix B.

Table 9: Spencer Close Ecological Constraints

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|--|---|---|---|
| Statutory designated sites (within 2 km of the site) | | | |
| | Thames Basin Heaths SPA and SAC surrounds the site, closest point 1 km south-east | No impacts anticipated. | N/A |
| | Thursley, Ash, Pirbright, and Chobham SAC, closest point 1.6 km south-east | | |
| | Basingstoke Canal SSSI - 990 m east | | |
| | Ash to Brookwood Heaths SSSI - 1 km south-east | | |
| Habitats and plants | | | |
| | All habitats | Habitat loss. | Retained habitats should be protected and maintained in their existing pre-construction condition. New planting should be provisioned to replace any habitats lost, to ensure no net loss to biodiversity as required by policy. |
| Trees | A variety of tree species were present within the site. | Loss of or damage to trees during enabling works. | An Arboricultural Assessment should be undertaken. Trees and woodland habitats located adjacent to the works should be maintained in their existing pre-construction condition and not encroached upon by site vehicles and personnel. New planting should be provisioned to replace any trees/shrubs lost. |

Network Rail SMD Framework: Farnborough North and Hatches Level Crossings Closure

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|-----------------------------------|--|---|--|
| Invasive non-native plant species | As access to the site was not obtained, it is unknown if any invasive species are present on the site. | Spread of invasive non-native species leading to biodiversity loss. | If this site is taken forward a survey should be undertaken by an Ecologist to identify whether or not invasive plant species are present. If this is not possible due to railway health and safety considerations, an ECoW should be present to oversee any vegetation clearance works. However, this could result in programme delays if any invasive non-native plant species be identified. |
| Protected animal species | | | |
| Great crested newt | Three fishing lakes were located within 500 m of the site. Great crested newt was considered unlikely to be present on site. | No impacts anticipated. | N/A |
| Reptiles | The site is considered to be of moderate-high suitability for reptiles. The data search returned records of adder, grass snake, slow-worm and common lizard within 1 km of the site. | Loss of habitat, injury, and/or mortality during enabling works. | Based on the likely limited footprint of the proposed development within suitable habitat no further survey is recommended. Instead a precautionary approach with respect to vegetation clearance should be taken whereby an ecological method statement is prepared and an Ecological Clerk of Works (ECoW) employed. An ECoW should oversee the implementation of a two-stage vegetation clearance methodology to encourage reptiles to leave the works area of their own accord. Removal of any potential hibernation sites should be avoided where possible, or where necessary undertaken during the summer months (potential hibernation sites should be left undisturbed during winter months; November to February inclusive). |
| Breeding birds | The site was considered to be of moderate suitability for nesting birds, with the trees on site providing suitable nesting habitat for a variety of bird species. | Damage to or loss of nests, and loss of habitat. | Where possible, all vegetation clearance should be undertaken between September and February, inclusive (i.e. outside of the bird breeding season). Should this not be possible, all vegetation to be cleared should be surveyed by an ECoW for breeding birds no more than 48 hours ahead of the proposed clearance. Replacement habitat should be provided to mitigate for the loss of nest sites. |

Network Rail SMD Framework: Farnborough North and Hatches Level Crossings Closure

| Ecological constraint | Constraint details | Potential impacts | Recommendations |
|-----------------------|--|---|--|
| Bats | None of the trees on site that could be viewed from Spencer Close were considered to be suitable for roosting bats. However, as access to the site was not obtained, it is possible that other trees on the site could be suitable for roosting bats. The site offered high suitability for foraging and commuting bats. | Disturbance to bats, and/or damage or destruction of a roost. Fragmentation and loss of foraging habitat. | If this site is taken forward a survey should be undertaken by an Ecologist to identify whether or any trees suitable for use by roosting bats would be affected by the development proposals. If this is not possible due to railway health and safety considerations, an ECoW should inspect the trees prior to any tree works. However, this could result in programme delays should any bat roosts be identified. New planting should be provisioned to replace any habitats lost. |
| Hazel dormouse | It was considered unlikely that hazel dormouse was using the site. | No impacts anticipated. | N/A |
| Water vole | The habitats on site were not suitable to support water vole. | No impacts anticipated. | N/A |
| Otter | The habitats on site were not suitable to support otter. | No impacts anticipated. | N/A |
| Badger | As access to the site was not obtained, it was not possible to confirm presence or absence of badger on the site. Badgers are a highly mobile species and range widely when foraging. | Disturbance, damage or destruction of a sett, and entrapment. | If this site is taken forward a survey should be undertaken by an Ecologist to identify whether or not badger is present. If possible, the site should be surveyed by an Ecologist as soon as possible. If this is not possible due to railway health and safety considerations, an ECoW should be present during any tree felling or scrub clearance works. However, this could result in programme delays should any badger setts be identified. Any trenches or excavations should be covered overnight or a ramp provided for escape of any animals that may otherwise become trapped. |
| Hedgehog | Habitats on site were considered suitable for hedgehog. | Disturbance, injury, and/or mortality during enabling works and construction. | Any dense vegetation/log-brash piles within areas to be cleared should be checked by an ECoW for hedgehog presence prior to removal. If an active hedgehog is encountered it should be allowed to safely vacate the area or be placed in a suitable and safe area of habitat by the ECoW. If a hibernating hedgehog is encountered it should be left undisturbed with a suitable buffer of undisturbed vegetation until their hibernation period is over and the nest vacated. |

4.5 Enhancement

It is recommended that consideration be given to the creation of appropriate habitat replacement and enhancement opportunities in line with Network Rail's Environment Policy (Ref 10) and the duty of public bodies to have regard to the purpose of conserving biodiversity under the NERC Act 2006 (Ref 5).

Where feasible, refuges for herpetofauna and small mammals could be constructed from logs, brash, rocks and cut vegetation (not to include non-native invasive species). The ECoW can advise of suitable locations to site these refuges (Ref 11).

5 References

- Ref 1. Arcadis (2020). *Farnborough North Footpath and User Worked Level Crossing Closure – Feasibility Report*. Report Number: 10011731-ARC-FBN-LX-OS-C-FS1001. Arcadis, Croydon.
- Ref 2. Engineering Consultancy (2017). *The Hatches No.1 Footbridge Upgrade/Replacement Scheme – Feasibility Report*. 2017. Engineering Consultancy, Winchester.
- Ref 3. Arcadis (2020). *Wessex Framework Hatches Footpath and User Worked Level Crossing Closure*. Report Number: 036395-ARC-1700-HAT-REP-ECV-001003. 2020. Arcadis, Croydon.
- Ref 4. Hampshire County Council (2016) *Ecological Appraisal for Footbridge FB569, The Hatches, Farnborough*. Hampshire County Council, Winchester.
- Ref 5. *Natural Environment and Rural Communities Act 2006*. Available at: <https://www.legislation.gov.uk/ukpga/2006/16/contents> [Accessed 4 December 2020].
- Ref 6. Naturally Wild (2020). *Ecological Scoping Assessment – Farnborough North*. Naturally Wild, Stockton on Tees.
- Ref 7. Naturally Wild (2020). *Ecological Scoping Assessment – Blackwater River Bridge*. Naturally Wild, Stockton on Tees.
- Ref 8. Naturally Wild (2020). *Ecological Scoping Assessment – The Hatches*. Naturally Wild, Stockton on Tees.
- Ref 9. Naturally Wild (2020). *Ecological Scoping Assessment – Spencer Close*. Naturally Wild, Stockton on Tees.
- Ref 10. Network Rail (2017). *Environment Policy 2017*. [online]. Available at: <https://www.networkrail.co.uk/wp-content/uploads/2016/11/Network-Rail-Environment-Policy.pdf> [Accessed 10 December 2020].
- Ref 11. Edgar, P., Foster, J. and Baker, J. (2010). *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth. [online]. Available at: <http://downloads.gigl.org.uk/website/Reptile%20Habitat%20Management%20Handbook.pdf> [Accessed 10 December 2020].
- Ref 12. *The Conservation of Habitats and Species Regulations 2017*. Available at: <http://www.legislation.gov.uk/uksi/2017/1012/contents/made> [Accessed 10 December 2020].
- Ref 13. *National Parks and Access to the Countryside Act 1949*. Available at: <https://www.legislation.gov.uk/ukpga/Geo6/12-13-14/97> [Accessed 10 December 2020].
- Ref 14. *Wildlife and Countryside Act 1981 (as amended)*. Available at: <https://www.legislation.gov.uk/ukpga/1981/69/contents> [Accessed 04 December 2020].
- Ref 15. *Countryside and Rights of Way Act 2000*. Available at: <https://www.legislation.gov.uk/ukpga/2000/37/contents> [Accessed 10 December 2020].
- Ref 16. Defra (2011). *Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services*. [online] Available at: <https://www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services> [Accessed 15 December 2020].
- Ref 17. *Wild Mammals (Protection) Act 1996*. [online] Available at: <https://www.legislation.gov.uk/ukpga/1996/3/contents> [Accessed 10 December 2020].
- Ref 18. *Protection of Badgers Act 1992*. [online]. Available at: <https://www.legislation.gov.uk/ukpga/1992/51/contents> [Accessed 10 December 2020].

APPENDIX A

Naturally Wild Ecological Scoping Assessments, 2020

1. Farnborough North
2. The Hatches No. 1 Footbridge (referred to by Naturally Wild as 'Blackwater River Bridge')
3. The Hatches
4. Spencer Close

ECOLOGICAL SCOPING ASSESSMENT



| | | | |
|------------------------|-------------------|----------------------------|------------|
| Site Name: | Farnborough North | Location (Address): | GU14 8AQ |
| Grid Reference: | SU 87754 56613 | Report Date: | 14/10/2020 |

RELEVANT LEGISLATION

| | |
|--|---|
| Wildlife & Countryside Act 1981 (as amended) https://www.legislation.gov.uk/ukpga/1981/69 | The Conservation of Habitats and Species Regulations 2017 http://www.legislation.gov.uk/ukxi/2017/1012/contents/made |
|--|---|

SCOPE OF WORKS *(Briefly describe the extent of works planned to be undertaken at the site):*

Due to health and safety concerns it has been proposed that a footbridge should be installed to replace the current pedestrian level crossing. In accordance with Network Rail's environmental policy and relevant UK legislation, an ecological assessment was required to determine any ecological constraints to the proposed works.

A Preliminary Ecological Appraisal of the site and adjacent habitats (where access was available) was conducted by Ecologist Ben Willers BSc (Hons) on 20th September 2020. The purpose of the survey was to determine the value of the site and surrounding areas for protected and notable species and check for any evidence of their presence, as well as the presence of any protected or notable habitats. The survey was carried out with specific regard for the presence or otherwise of badgers (*Meles meles*), bats, hazel dormice (*Muscardinus avellanarius*), great crested newts (GCNs) (*Triturus cristatus*), nesting birds, and reptiles, as well as the potential for any other protected or notable species or any invasive species to be present. In addition, as part of the desktop study forming part of the overall assessment, the presence of any statutory or non-statutory ecological designations on or adjacent to the site was determined using the Multi-Agency Geographic Information for the Countryside (MAGIC) resource and records of protected and notable species and any non-statutory designated sites not available through MAGIC for a 1 km radius surrounding the site were also requested from Surrey Biodiversity Information Centre (SBIC).

SITE DESCRIPTION AND NOTES *(Description of ecological features identified on site):*

Overview

Farnborough North station is in the town of Farnborough, Hampshire. The immediate surroundings consist of a school to the west; shops, business properties and residential properties to the south; and a strip of ruderal vegetation with patches of trees such as sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*), ash (*Fraxinus excelsior*), and holly (*Ilex aquifolium*) to the north and east. A footpath is situated directly south of the station and runs east to Frimley Green. A community garden and an area of tall ruderal vegetation, bramble (*Rubus fruticosus*) scrub, ivy (*Hedera helix*), and alder (*Alnus glutinosa*), hawthorn (*Crataegus monogyna*), and sycamore (*A. pseudoplatanus*) trees is present to the east, south of the footpath. A treeline and area of unimproved grassland are situated south of the station east and west of the running line respectively.

In the wider landscape the urban area of Farnborough extends to the north, south, and west; the main road (A331) and fishing lakes are present to the east followed by the villages of Frimley Green and Mytchett. There are several large blocks of woodland approximately 2 km east, 2.8 km north-west, 4.5 km south-west, and 5 km north of the site. In addition, Blackwater River runs north to south approximately 160 m west of the site.

Biodiversity Baseline Units

3.52

Designated Sites

There are no statutory designated ecological sites located on or adjacent to the proposed work site, according to MAGIC. However, there are several statutory designated sites within 5km of the site. These are shown in Table 1.

Table 1. Statutory designated sites within 5 km of the site and non-statutory sites within 1 km of the site.

| Level of designation | Designation | Name | Approximate Distance & direction from site |
|----------------------|------------------|---|--|
| International | SPA | Thames Basin Heaths | 1770m south-east |
| | | Thames Basin Heaths | 2840 m north-west |
| | | Thames Basin Heaths | 4020 m north-east |
| | | Thames Basin Heaths | 4130 m south-west |
| | Ramsar | N/A | N/A |
| | SAC | Thames Basin Heaths | 1770 m south-east |
| | | Thursley, Ash, Pirbright, and Coghham | 2430 m south-east |
| | | Thames Basin Heaths | 2840 m north-west |
| | | Thursley, Ash, Pirbright, and Coghham | 4020 m north-east |
| | | Thames Basin Heaths | 4130 m south-west |
| National | SSSI | Basingstoke Canal | 1610 m east & 4390 m south |
| | | Ash to Brookwood Heaths | 1920 m east |
| | | Castle Bottom to Yateley and Hawley Commons | 2880 m north-west |
| | | Foxlease and Ancells Meadows | 3660 m west |
| | | Colony Bog at Bagshot Heath | 4150 m east |
| | | Blackwater Valley | 4150 m north-west |
| | | Eelmoor Marsh | 4200 m south-west |
| | NNR | N/A | N/A |
| County | LNR | Snaky Lane | 2660 m south |
| | | Lakeside Park | 4910 m south |
| Local | Ancient woodland | N/A | N/A |

Due to the distance of the work site from these designated sites and the small-scale, localised nature of the works, it is expected that any potential impacts (either direct or indirect) to these or any other statutory designated sites in the wider area will be negligible.

Non-Statutory Designated Sites

There are no non-statutory designated ecological sites located on or adjacent to the proposed work site, according to MAGIC. However, the following non-statutory designated sites are located within a 1km radius of the site:

- Hay Meadow west of Coleford Bridge Site of Nature Conservation Interest (SNCI);
- Coleford Bridge SNCI;
- Frimley Hatches (including Frimley reedbeds) SNCI.

Due to the distance of the work site from these designated sites and the small-scale, localised nature of the works, it is expected that any potential impacts (either direct or indirect) to these or any other non-statutory designated sites in the wider area will be negligible.

Badgers

No evidence of badger was identified during the survey. Furthermore, the site contains suboptimal habitat for badger sett creation. However, the area of ruderal vegetation east of the station, north of the footpath could provide some suitable foraging habitat. Due to these factors it is expected that any significant impacts to local badger populations as a result of the works will be negligible.

Great Crested Newts

The area of ruderal vegetation east of the station, north of the footpath provides suitable terrestrial habitat for GCNs. In addition, the area of tall ruderal vegetation and scrub also provides suitable terrestrial habitat for GCNs.

The desktop study found five ponds within 500m of the site (c.70 m east; c.130 m north; c.200 m south-east; c.260m south-east; c.270 m north). In addition, the desktop study found four fishing lakes within 500 m of the site. Although the fishing lakes are within the roaming range of GCNs, the lakes provide unsuitable breeding habitat for GCNs due to the presence of large numbers of fish. Therefore, a Habitat Suitability Index (HSI)

assessment (Oldham *et al.*, 2000¹; ARG UK, 2010²) was not undertaken on these lakes. Of the five ponds, three were located within 250 m of the site. Research³ has found that, while 500 m is considered to be the typical maximum roaming range of GCNs from a pond which they occupy, in reality they will rarely roam further than 250 m from a pond which they occupy if suitable terrestrial habitat is present within this radius. For this reason, the two ponds outside of a 250 m radius of the site did not undergo a HSI assessment. The three ponds within a 250 m radius of the site did not undergo a HSI assessment due to a lack of access.

However, the data search conducted by SBIC found no records of GCNs within 1 km of the site. Furthermore, according to MAGIC there have been no granted EPS licences for GCNs within 5 km of the site; the closest pond on record surveyed for GCNs (c.920 m north) found them to be absent; and data collected from Class Survey Licence returns shows the closest record of GCNs is 4240 m east from the site. This is substantially outside of the GCN roaming range and is separated from the site by an urbanised landscape, including busy roads.

Based on a combination of the above factors, GCNs are considered unlikely to be encountered on site and, in turn, any impacts to them as a result of the works are expected to be negligible.

Reptiles

The site is considered to be of high suitability for reptiles. The area of ruderal vegetation east of the station, north of the footpath provides excellent habitat for a wide variety of reptile species. Furthermore, the area of unimproved grassland and the area of tall ruderal vegetation with bramble scrub provide suitable habitat for a wide variety of reptile species. In addition, the data search conducted by SBIC found records of adder (*Vipera berus*), grass snake (*Natrix natrix*), slow-worm (*Anguis fragilis*), and common lizard (*Zootoca vivipara*) within 1 km of the site.

Providing mitigation measures are incorporated into the works, any impacts to reptiles are expected to be low.

Nesting Birds

The site was considered to be of moderate suitability for nesting, with the trees and bramble scrub providing suitable nesting habitat, but with a sub-optimal vegetation structure overall to provide high suitability for nesting birds.

Providing basic mitigation measures are implemented, any impacts to nesting birds as a result of the works are expected to be low.

Dormice

No evidence of dormice was observed during the survey. In addition, the habitat on site was suboptimal for dormice. Additionally, according to MAGIC there have been no EPS licences granted for dormice within a 5 km radius of the site. Furthermore, the data search conducted by SBIC found no records of dormice within 1 km of the site.

Due to the above factors, it is unlikely that dormice will be using the site. Therefore, any impacts to local dormouse populations is thought to be negligible.

Bats

The majority of trees on site were identified as having negligible bat roost potential. However, one mature Alder (*A. glutinosa*) tree situated in the area of tall ruderal vegetation east of the station, south of the footpath (approximate grid reference SU 87765 56638) was identified as having low bat roost potential due to being covered with ivy (*H. helix*). In addition, the vegetation on and surrounding the site provides some suitable foraging habitat for bats.

Although roosting and foraging habitat has been identified on site, providing mitigation measures are implemented, any impacts to bats as a result of the works are expected to be negligible-low.

¹Oldham *et al.* (2010) Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal*, 10(4), pp. 143 – 155.

²Amphibian and Reptile Groups of the UK (2010) *ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index*. Available: <http://www.arguk.org/download-document/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5>

³Cresswell, W. and Whitworth, R. (2004) *An assessment of the efficiency of capture techniques and the value of different habitats for great crested newts*. English Nature Research Reports 576. English Nature, Peterborough.

| ISSUES IDENTIFIED | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | <i>If yes, describe below</i> |
|---|-----|-------------------------------------|----|--------------------------|-------------------------------|
| <ul style="list-style-type: none"> • High suitability for reptiles; • Moderate suitability for nesting birds; • Alder tree with low suitability for roosting bats; • Suitable foraging habitat for bats. | | | | | |
| FURTHER ACTION REQUIRED? | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | <i>If yes, describe below</i> |
| <p>Although no evidence of badger was observed during the survey if any active badger setts are found prior to or during works, appropriate mitigation would need to be implemented. Mitigation would be likely to include exclusion of the badgers and closure of the sett(s) under licence if significant impacts resulting from the works could not be avoided.</p> <p>If the tree identified as having low potential for roosting bats is to be felled or have any other work undertaken on it then this should be carried out under ecological supervision. The trees should be soft felled, and the sections of the tree should be left overnight to allow any potential roosting bats to disperse.</p> <p>If any night works are required at any stage, a sensitive lighting regime should be implemented to minimise unnecessary light spill and consequent disturbance of any foraging or commuting bats present in the area.</p> <p>Any vegetation clearance works should ideally be timed to commence outside of the nesting season, which is defined as running from March to August, inclusive. If this is not feasible for any reason, a nesting bird survey must be carried out by a suitably qualified ecologist (SQE) shortly prior to the start of works to confirm the absence of any active nests. In the event that any active nests are found during this check or at any point during the works, a suitable exclusion zone must be put in place around the nest, with no work taking place in the area until the nest can be confirmed as no longer active by a SQE. In addition, if works take place during the nesting season, they should be carried out under a watching brief by a SQE.</p> <p>As the site has been identified as having high potential to support reptiles, reptile surveys should be carried out to establish whether reptiles are present. This is in line with Natural England's standing advice: (https://www.gov.uk/reptiles-protection-surveys-and-licences). Standard methods involving a SQE placing 50x50cm sheets of heavy-duty roofing felt (artificial refugia) in areas where they are most likely to be used by reptiles (e.g. in the areas of ruderal vegetation and at the edges of bramble scrub). So far as possible, the artificial refugia should be placed on slightly uneven ground so as not to lie completely flat (to create a varied microclimate).</p> <p>GCNs are considered unlikely to be present on site. However, in the unlikely event that any are encountered during the works, it is a legal requirement to stop work until appropriate discussions have taken place and an alternative work strategy has been agreed, which may include consultation with Natural England.</p> <p>Depending on the time elapsed between the September 2020 ecological survey and any further work to be carried out on site, an update assessment is likely to be required to determine any significant changes in habitat composition and how this may alter the findings discussed above.</p> | | | | | |



Figure 1. Site location plan.

(Image taken from Google Earth Pro ©2020 Google).



Image 1. Area of tall ruderal vegetation east of the station, north of the footpath.

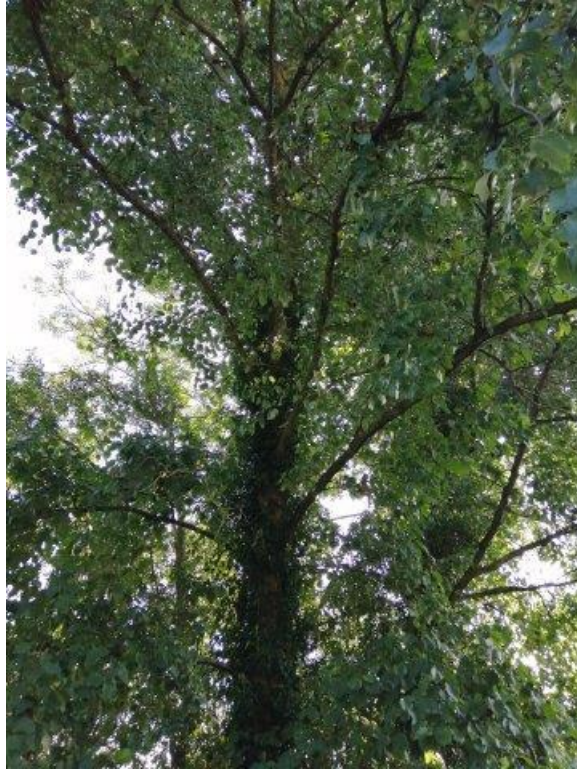


Image 2. Alder tree with low bat roost potential.



Image 3. Area of tall ruderal vegetation and scrub east of the station, south of the footpath.



Image 4. View of the footpath and railway crossing standing east of the station facing west.



Image5. View of the footpath standing east of the station facing east.



Image 6. Treeline and area of unimproved grassland south of the station.

ECOLOGICAL SCOPING ASSESSMENT



| | | | |
|------------------------|-------------------------|----------------------------|------------|
| Site Name: | Blackwater River Bridge | Location (Address): | GU16 6HG |
| Grid Reference: | SU 87873 56722 | Report Date: | 12/10/2020 |

RELEVANT LEGISLATION

| | |
|--|---|
| Wildlife & Countryside Act 1981 (as amended) https://www.legislation.gov.uk/ukpga/1981/69 | The Conservation of Habitats and Species Regulations 2017 http://www.legislation.gov.uk/ukxi/2017/1012/contents/made |
|--|---|

SCOPE OF WORKS (Briefly describe the extent of works planned to be undertaken at the site):

Due to health and safety concerns it has been proposed that a new footbridge should be installed to replace the existing footbridge. In accordance with Network Rail's environmental policy and relevant UK legislation, an ecological assessment was required to determine any ecological constraints to the proposed works.

A Preliminary Ecological Appraisal of the site and adjacent habitats (where access was available) was conducted by Ecologist Ben Willers BSc (Hons) on 20th September 2020. The purpose of the survey was to determine the value of the site and surrounding areas for protected and notable species and check for any evidence of their presence, as well as the presence of any protected or notable habitats. The survey was carried out with specific regard for the presence or otherwise of badgers (*Meles meles*), bats, great crested newts (GCNs) (*Triturus cristatus*), nesting birds, hazel dormice (*Muscardinus avellanarius*), and reptiles, as well as the potential for any other protected or notable species or any invasive species to be present. In addition, as part of the desktop study forming part of the overall assessment, the presence of any statutory or non-statutory ecological designations on or adjacent to the site was determined using the Multi-Agency Geographic Information for the Countryside (MAGIC) resource and records of protected and notable species and any non-statutory designated sites not available through MAGIC for a 1 km radius surrounding the site were also requested from Surrey Biodiversity Information Centre (SBIC).

SITE DESCRIPTION AND NOTES (Description of ecological features identified on site):

Overview

The footbridge crosses Blackwater River and is situated within deciduous woodland approximately 20 m east of the A331. The plant species on site include pedunculata oak (*Quercus robur*), a species of willow (*Salix sp.*), sycamore (*Acer pseudoplatanus*), hazel (*Corylus avellana*), wild privet (*Ligustrum vulgare*), hawthorn (*Crataegus monogyna*), dogwood (*Cornus sanguinea*), a species of apple (*Malus sp.*) a species of rose (*Rosa sp.*), ivy (*Hedera helix*), and patches of common nettle (*Urtica dioica*). In addition, Himalayan balsam (*Impatiens glandulifera*) is present in several places, particularly on the riverbanks. This species is highly invasive and is listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WACA).

Biodiversity Baseline Units

1.73

Designated Sites

There are no statutory designated ecological sites located on or adjacent to the proposed work site, according to MAGIC. However, the following designated sites are located within a 5km radius of the site. These are shown in Table 1.

Table 1. Statutory designated sites within 5 km of the site.

| Level of designation | Designation | Name | Approximate distance & direction from site |
|----------------------|-------------|---------------------------------------|--|
| International | SPA | Thames Basin Heaths | 1610 m south-east |
| | | Thames Basin Heaths | 2880 m north-west |
| | | Thames Basin Heaths | 3820 north-east |
| | | Thames Basin Heaths | 4290 m south-west |
| | Ramsar | N/A | N/A |
| | SAC | Thames Basin Heaths | 1610 m south-east |
| | | Thursley, Ash, Pirbright, and Chobham | 2280 m south-east |
| Thames Basin Heaths | | 2880 m north-west | |

| | | | |
|----------|------|---|-------------------|
| National | SSSI | Thames Basin Heaths | 4290 m south-west |
| | | Basingstoke Canal | 1450 m east |
| | | Ash to Brookwood Heaths | 1610 m south-east |
| | | Castle Bottom to Yateley and Hawley Commons | 2970 m north-west |
| | | Foxlease and Ancells Meadows | 3770 m west |
| | | Colony Bog and Bagshot Heath | 3820 m north-east |
| | | Blackwater Valley | 4070 m north-west |
| | | Eelmoor Marsh | 4230 m south-west |
| | NNR | N/A | N/A |
| County | LNR | N/A | N/A |

Due to the distance of the work site from these designated sites and the small-scale, localised nature of the works, it is expected that any potential impacts (either direct or indirect) to these or any other statutory designated sites in the wider area will be negligible.

Non-Statutory Designated Sites

There are no non-statutory designated ecological sites located on or adjacent to the proposed work site, according to MAGIC. However, the following non-statutory designated sites are located within a 1km radius of the site:

- Hay Meadow west of Coleford Bridge Site of Nature Conservation Interest (SNCI);
- Coleford Bridge SNCI;
- Frimley Hatches (including Frimley reedbeds) SNCI.

Due to the distance of the work site from these designated sites and the small-scale, localised nature of the works, it is expected that any potential impacts (either direct or indirect) to these or any other non-statutory designated sites in the wider area will be negligible.

Badgers

The site does provide suitable foraging habitat for badgers. However, no evidence of badger was identified during the survey. Furthermore, the site contains suboptimal habitat for badger sett creation. Due to these factors it is expected that if basic mitigation is implemented, any significant impacts to local badger populations as a result of the works will be negligible.

Great Crested Newts

The site provides moderate value terrestrial habitat for GCNs. The desktop study found five ponds and five fishing lakes within 500 m of the site. Although the fishing lakes are within the roaming range of GCNs, the lakes provide unsuitable breeding habitat for GCNs due to the presence of large numbers of fish. Therefore, a Habitat Suitability Index (HSI) assessment (Oldham *et al.*, 2000¹; ARG UK, 2010²) was not undertaken on these lakes. Of the five ponds, two were located within 250 m of the site. Research³ has found that, while 500 m is considered to be the typical maximum roaming range of GCNs from a pond which they occupy, in reality they will rarely roam further than 250 m from a pond which they occupy if suitable terrestrial habitat is present within this radius. Although two ponds are situated within 250 m of the site, a HSI index was not undertaken on these ponds due to a lack of access. Furthermore, the A331 is situated between these ponds and the site. It is highly improbable that GCNs would be able to successfully cross this busy road.

The desktop study found that there have been no European protected species (EPS) licences granted for GCNs within a 5 km radius of the site according to MAGIC. In addition, the data search conducted by SBIC found no records of GCNs within 1 km of the site.

Based on a combination of the above factors, the chances of encountering GCNs are unlikely and any impacts to GCN as a result of the works are expected to be negligible.

Reptiles

The site is considered to be of moderate suitability for reptiles. Although the vegetation on site provides suitable coverage which affords reptiles protection from predators, much of the site is shaded due to the canopy layer.

¹Oldham *et al.* (2010) Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal*, 10(4), pp. 143 – 155.

²Amphibian and Reptile Groups of the UK (2010) *ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index*. Available: <http://www.arguk.org/download-document/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5>

³Cresswell, W. and Whitworth, R. (2004) *An assessment of the efficiency of capture techniques and the value of different habitats for great crested newts*. English Nature Research Reports 576. English Nature, Peterborough.

This is not ideal for reptiles as they require suitable areas to bask. However, some areas for basking are available. In addition, the data search conducted by SBIC found records of adder (*Vipera berus*), grass snake (*Natrix natrix*), slow-worm (*Anguis fragilis*), and common lizard (*Zootoca vivipara*) within 1 km of the site.

Providing mitigation measures are incorporated into the works, any impacts to reptiles are expected to be low.

Nesting Birds

The site was considered to be of high suitability for nesting birds, with the trees and shrubs providing suitable nesting habitat for a variety of bird species.

Providing basic mitigation measures are implemented, any impacts to nesting birds as a result of the works are expected to be low.

Dormice

No evidence of dormice was observed during the survey. In addition, the habitat on site was suboptimal for dormice. Additionally, according to MAGIC there have been no EPS licences granted for dormice within a 5 km radius of the site. Furthermore, the data search conducted by SBIC found no records of dormice within 1 km of the site.

Due to the above factors, it is unlikely that dormice will be using the site. Therefore, any impacts to local dormouse populations is thought to be negligible.

Bats

None of the trees on site were considered to be suitable for roosting bats. However, the woodland provides good sheltered bat foraging habitat in the immediate vicinity of the site. The woodland connects to lines of trees which in turn connect to high quality foraging habitat such as further patches of woodland. In addition, the river and nearby fishing lakes provide good foraging habitat for a range of bat species.

For the reasons discussed above, the site is considered to have negligible suitability for roosting bats and high suitability for foraging and commuting bats. Although foraging habitat has been identified on and adjacent to the site, providing mitigation measures are implemented, any impacts to bats as a result of the works are expected to be negligible.

Invasive Species

Himylayan balsam (*I. glandulifera*) was identified growing in several patches on site. This species is listed on Schedule 9 of the WACA. It is an offence under this act to cause any species listed on *Schedule 9* to spread in the wild. Therefore, it should be removed to avoid spreading to the remainder of the site or off-site.

| ISSUES IDENTIFIED | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | If yes, describe below |
|---|-----|-------------------------------------|----|--------------------------|------------------------|
| <ul style="list-style-type: none"> • Moderate suitability for reptiles; • High suitability for nesting birds; • High quality foraging habitat for bats; • Himylayan balsam (<i>I. glandulifera</i>), a species listed on Schedule 9 of the WACA, is present. | | | | | |
| FURTHER ACTION REQUIRED? | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | If yes, describe below |
| <p>The site is considered to be suboptimal for badger sett creation. However, if any active badger setts were found prior to or during works, appropriate mitigation would need to be implemented. Mitigation would be likely to include exclusion of the badgers and closure of the sett(s) under licence if significant impacts resulting from the works could not be avoided.</p> <p>If any night works are required at any stage, a sensitive lighting scheme should be implemented to minimise unnecessary light spill and consequent disturbance of any foraging or commuting bats present in the area.</p> <p>Vegetation clearance works should ideally be timed to commence outside of the nesting season, which is defined as running from March to August, inclusive. If this is not feasible for any reason, a nesting bird survey must be carried out by a suitably qualified ecologist (SQE) shortly prior to the start of works to confirm the absence of any active nests. In the event that any active nests were found during this check or at any point during the works, a suitable exclusion zone must be put in place around the nest, with no work taking place in the area until the nest can be confirmed as no longer active by a SQE. In addition, if works take place during the nesting season, they should be carried out under a watching brief by a SQE.</p> <p>As the site is considered to be of moderate suitability for reptiles overall and four species of reptile have been recorded within 1 km of the site, reptile surveys should be carried out to establish whether reptiles are present. This is in line with Natural England's standing advice: (https://www.gov.uk/reptiles-protection-surveys-and-</p> | | | | | |

[licences](#)). Standard methods involving a SQE placing 50x50cm sheets of heavy-duty roofing felt (artificial refugia) in areas where they are most likely to be used by reptiles. So far as possible, the artificial refugia should be placed on slightly uneven ground so as not to lie completely flat (to create a varied microclimate).

GCNs are considered unlikely to be present on site. However, in the improbable event that any GCNs are encountered during works, it is a legal requirement to stop work until appropriate discussions have taken place and an alternative work strategy has been agreed, which may include consultation with Natural England.

To comply with the law, the Himalayan balsam (*I. glandulifera*) should be controlled and eradicated so not to cause the plant to spread on this or other sites as a result of earth moving, soil/rubble removal or other operations. Two main options exist: mechanical removal and chemical treatment. The removal of this species should be completed by appropriately qualified contractors prior to any earth-moving operations. Whilst the invasive species is still present on site, works must not take place within 10 m of it. A clearly visible 10 m exclusion zone should be put in place surrounding the invasive species to ensure works do not take place within this zone. In addition, to prevent the spread of this species, work personnel should not enter the exclusion zone.

Depending on the time elapsed between the September 2020 ecological survey and any further work to be carried out on site, an update assessment is likely to be required to determine any significant changes in habitat composition and how this may alter the findings discussed above.



Figure 1. Site location plan.

(Image taken from Google Earth Pro ©2020 Google).



Image 1. The footbridge.



Image 2. View of the habitat south of the footbridge.



Image 3. Himalayan balsam on the east riverbank.



Image 4. Himalayan balsam on the west riverbank.



Image5. Himalayan balsam approximately 30 m east of the footbridge.



Image 6. Typical view of the habitat on site.



Image 7. Typical view of the habitat on site.

ECOLOGICAL SCOPING ASSESSMENT



| | | | |
|------------------------|----------------|----------------------------|------------|
| Site Name: | The Hatches | Location (Address): | GU16 6HG |
| Grid Reference: | SU 88372 56752 | Report Date: | 13/10/2020 |

RELEVANT LEGISLATION

| | |
|--|---|
| Wildlife & Countryside Act 1981 (as amended) https://www.legislation.gov.uk/ukpga/1981/69 | The Conservation of Habitats and Species Regulations 2017 http://www.legislation.gov.uk/uksi/2017/1012/contents/made |
|--|---|

SCOPE OF WORKS (Briefly describe the extent of works planned to be undertaken at the site):

Due to health and safety concerns it has been proposed that a footbridge should be installed to replace the current pedestrian level crossing. In accordance with Network Rail's environmental policy and relevant UK legislation, an ecological assessment was required to determine any ecological constraints to the proposed works.

A Preliminary Ecological Appraisal of the site and adjacent habitats (where access was available) was conducted by Ecologist Ben Willers BSc (Hons) on 20th September 2020. The purpose of the survey was to determine the value of the site and surrounding areas for protected and notable species and check for any evidence of their presence, as well as the presence of any protected or notable habitats. The survey was carried out with specific regard for the presence or otherwise of badgers (*Meles meles*), bats, great crested newts (GCNs) (*Triturus cristatus*), nesting birds, hazel dormice (*Muscardinus avellanarius*), and reptiles, as well as the potential for any other protected or notable species or any invasive species to be present. In addition, as part of the desktop study forming part of the overall assessment, the presence of any statutory or non-statutory ecological designations on or adjacent to the site was determined using the Multi-Agency Geographic Information for the Countryside (MAGIC) resource and records of protected and notable species and any non-statutory designated sites not available through MAGIC for a 1 km radius surrounding the site were also requested from Surrey Biodiversity Information Centre (SBIC).

SITE DESCRIPTION AND NOTES (Description of ecological features identified on site):

Overview

The site is located at the western end of The Hatches, a residential road situated within the village of Frimley Green. The site consists of a length of track running north to south; a pedestrian crossing which is located between the end of The Hatches and a footpath that leads to Farnborough North train station; and the onsite habitats which include unimproved grassland, bare ground, bramble scrub, the edge of a deciduous woodland, a deciduous treeline, and a coniferous treeline.

Directly east of the running line, north of the pedestrian crossing adjacent to the cess is a strip of unimproved grassland with a long sward. A strip of shrub and scrub habitat is also present which contains species such as bramble (*Rubus fruticosus*), hazel (*Corylus avellana*), holly (*Ilex aquifolium*), and Russian vine (*Fallopia baldschuanica*). Towards the northern end of the site the shrub/ scrub habitat changes to a treeline of pedunculate oak (*Quercus robur*), and beech (*Fagus sylvatica*).

Directly west of the running line, north of the pedestrian crossing adjacent to the cess is a strip of unimproved grassland with a long sward which contains several log piles and patches of bramble (*R. fruticosus*). Adjacent to the unimproved grassland is strip of woodland. Species here include scots pine (*Pinus sylvestris*), ash (*Fraxinus excelsior*), and pedunculate oak (*Q. robur*).

Directly east of the running line, south of the pedestrian crossing adjacent to the cess is a strip of unimproved grassland and bramble (*R. fruticosus*) scrub. Adjacent to this habitat is a patch of deciduous woodland which includes the species pedunculate oak (*Q. robur*), ash (*F. excelsior*), hazel (*C. avellana*), silver birch (*Betula pendula*), holly (*I. aquifolium*), bramble (*R. fruticosus*), and bracken (*Pteridium sp.*).

Directly west of the running line, south of the pedestrian crossing is an area of shrub/ scrub habitat measuring approximately 60 m in length. Species here include ash (*F. excelsior*), sycamore (*Acer pseudoplatanus*), hazel (*C. avellana*), hawthorn (*Crataegus monogyna*), young pedunculate oak (*Q. robur*), a species of honeysuckle (*Lonicera*), bramble (*R. fruticosus*), a species of rose (*Rosa*), and common nettle (*Urtica dioica*). A large pile of

garden waste is also present here. South of this habitat the vegetation adjacent to the cess ends and is replaced by bare ground with a strip of coniferous trees to the east.

In the wider landscape the village of Frimley Green extends to the north and east; fishing lakes are present to the west; and the village of Mytchett is to the south. There are several large blocks of woodland approximately 1 km east, 1 km south-east, and 3.4 km north-west of the site.

Biodiversity Baseline Units

1.01

Designated Sites

There are no statutory designated ecological sites located on or adjacent to the proposed work site, according to MAGIC. However, the following designated sites are located within a 5km radius of the site. These are shown in Table 1.

Table 1. Statutory designated sites within 5 km of the site.

| Level of designation | Designation | Name | Distance & direction from site |
|----------------------|-------------|---|---------------------------------------|
| International | SPA | Thames Basin Heaths | 1200 m south-east |
| | | Thames Basin Heaths | 3360 m west |
| | | Thames Basin Heaths | 4660 m south-west |
| | Ramsar | N/A | N/A |
| | SAC | Thames Basin Heaths | 1200 m south-east |
| | | Thursley, Ash, Pirbright, and Chobham | 1870 m south-east & 3480 m north-east |
| | | Thames Basin Heaths | 3360 m west |
| Thames Basin Heaths | | 4660 m south-west | |
| National | SSSI | Basingstoke Canal | 990 m east & 4550 m south |
| | | Ash to Brookwood Heaths | 1290 m south-east |
| | | Castle Bottom to Yateley and Hawley Commons | 3360 m north-west |
| | | Colony Bog and Bagshot Heath | 3450 m east |
| | | Blackwater Valley | 4340 m north-west |
| | | Eelmoor Marsh | 4630 m south-west |
| | | Broadmoor to Bagshot Woods and Heaths | 4890 m north |
| | NNR | N/A | N/A |
| County | LNR | Snaky Lane | 2570 m south |
| | | Lakeside Park | 4930 m south |

Due to the distance of the work site from these designated sites and the small-scale, localised nature of the works, it is expected that any potential impacts (either direct or indirect) to these or any other statutory designated sites in the wider area will be negligible.

Badgers

The site does provide suitable foraging habitat for badgers. However, no evidence of badger was identified during the survey. Furthermore, the site contains suboptimal habitat for badger sett creation. Due to these factors it is expected that if basic mitigation is implemented, any significant impacts to local badger populations as a result of the works will be negligible.

Great Crested Newts

The site provides high value terrestrial habitat for GCNs. The desktop study found one pond (c.460 m west) and four fishing lakes within 500 m of the site. Although the fishing lakes are within the roaming range of GCNs, the lakes provide unsuitable breeding habitat for GCNs due to the presence of large numbers of fish. Therefore, a Habitat Suitability Index (HSI) assessment (Oldham *et al.*, 2000¹; ARG UK, 2010²) was not undertaken on these lakes. In addition, a HSI assessment was not carried out on the pond approximately 460 m west of the site.

¹Oldham *et al.* (2010) Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal*, 10(4), pp. 143 – 155.

²Amphibian and Reptile Groups of the UK (2010) ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Available: <http://www.arguk.org/download-document/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5>

Research³ has found that, while 500 m is considered to be the typical maximum roaming range of GCNs from a pond which they occupy, in reality they will rarely roam further than 250 m from a pond which they occupy if suitable terrestrial habitat is present within this radius.

The desktop study found that there have been no European protected species (EPS) licences granted for GCNs within a 5 km radius of the site. Additionally, the data search conducted by SBIC found no records of GCNs within 1 km of the site.

Based on a combination of the above factors, GCNs are considered unlikely to be encountered on site and, in turn, any impacts to them as a result of the works are expected to be negligible.

Reptiles

The site is considered to be of high suitability for reptiles. The unimproved grassland and patches of bramble scrub provide good foraging habitat. In addition, there are several log piles on site that provide suitable hibernation habitat. Furthermore, the data search conducted by SBIC found records of adder (*Vipera berus*), grass snake (*Natrix natrix*), slow-worm (*Anguis fragilis*), and common lizard (*Zootoca vivipara*) within 1 km of the site.

Providing mitigation is incorporated into the works, any impacts to reptiles are expected to be low.

Nesting Birds

The site was considered to be of moderate-high suitability for nesting birds, with the trees, shrubs, and scrub providing suitable nesting habitat for a variety of bird species.

Providing basic mitigation measures are implemented, any impacts to nesting birds as a result of the works are expected to be low.

Dormice

The site offers some low suitability habitat for dormice. However, no evidence of dormice was observed during the survey. In addition, the data search conducted by SBIC found no records of dormice within 1 km of the site; and according to MAGIC there have been no EPS licences granted for dormice within a 5 km radius of the site.

Due to the above factors, it is unlikely that dormice will be using the site. Therefore, any impacts to local dormouse populations is thought to be negligible.

Bats

None of the trees on site were considered to be suitable for roosting bats. However, the woodland provides good, sheltered bat foraging habitat in the immediate vicinity of the site. The woodland connects to lines of trees which in turn connect to high quality foraging habitat such as further patches of woodland. In addition, the nearby fishing lakes provide good foraging habitat for a range of bat species.

For the reasons discussed above, the site is considered to have negligible suitability for roosting bats and high suitability for foraging and commuting bats. Although foraging habitat has been identified, providing basic mitigation measures are implemented, any impacts to bats as a result of the works are expected to be negligible.

Invasive Species

Russian Vine is present on site. Although this species is not listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) it is still a highly invasive species.

| ISSUES IDENTIFIED | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | <i>If yes, describe below</i> |
|---|-----|-------------------------------------|----|--------------------------|-------------------------------|
| <ul style="list-style-type: none"> • High suitability for reptiles; • Moderate-high suitability for nesting birds; • High quality foraging habitat for bats; • Russian Vine is present on site. | | | | | |
| FURTHER ACTION REQUIRED? | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | <i>If yes, describe below</i> |

³ Cresswell, W. and Whitworth, R. (2004) *An assessment of the efficiency of capture techniques and the value of different habitats for great crested newts*. English Nature Research Reports 576. English Nature, Peterborough.

The site is considered to be suboptimal for badger sett creation. However, if any active badger setts were found prior to or during works, appropriate mitigation would need to be implemented. Mitigation would be likely to include exclusion of the badgers and closure of the sett(s) under licence if significant impacts resulting from the works could not be avoided.

If any night works are required at any stage, a sensitive lighting regime should be implemented to minimise unnecessary light spill and consequent disturbance of any foraging or commuting bats present in the area.

Vegetation clearance works should ideally be timed to commence outside of the nesting season, which is defined as running from March to August, inclusive. If this is not feasible for any reason, a nesting bird survey must be carried out by a suitably qualified ecologist (SQE) shortly prior to the start of works to confirm the absence of any active nests. In the event that any active nests were found during this check or at any point during the works, a suitable exclusion zone must be put in place around the nest, with no work taking place in the area until the nest can be confirmed as no longer active by a SQE. In addition, if works take place during the nesting season, they should be carried out under a watching brief by a SQE.

As the works will impact suitable reptile habitat, reptile surveys should be carried out to establish whether reptiles are present. This is in line with Natural England's standing advice: (<https://www.gov.uk/reptiles-protection-surveys-and-licences>). Standard methods involving a SQE placing sheets of heavy-duty roofing felt (artificial refugia) in areas where they are most likely to be used by reptiles (e.g. at the edges of bramble scrub, in the unimproved grassland with long sward, next to the log piles). So far as possible, the artificial refugia should be placed on slightly uneven ground so as not to lie completely flat (to create a varied microclimate).

GCNs are considered unlikely to be present on site. However, in the improbable event that any are encountered during works, it is a legal requirement to stop work until appropriate discussions have taken place and an alternative work strategy has been agreed, which may include consultation with Natural England.

Russian Vine is present on site. Although this species is not listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) it is still a highly invasive species. Therefore, great care should be taken to prevent the spread of this species to other areas of the site and into the wild.

Depending on the time elapsed between the September 2020 ecological survey and any further work to be carried out on site, an update assessment is likely to be required to determine any significant changes in habitat composition and how this may alter the findings discussed above.



Figure 1. Site location plan.

(Image taken from Google Earth Pro ©2020 Google).



Image 1. East of the running line, north of the pedestrian crossing facing north.



Image 2. View of the Russian vine (plant with white flowers).



Image 3. Area of unimproved grassland with long sward – west of the running line, north of the pedestrian crossing.



Image 4. Several log piles – west of the running line, north of the pedestrian crossing.



Image5. Stood at the southern end of the site facing north.



Image 6. Stood approximately 70 m south of the pedestrian crossing facing north.



Image 7. Pile of garden waste south of the pedestrian crossing.

ECOLOGICAL SCOPING ASSESSMENT



| | | | |
|------------------------|----------------|----------------------------|------------|
| Site Name: | Spencer Close | Location (Address): | GU16 6HN |
| Grid Reference: | SU 88455 56559 | Report Date: | 22/10/2020 |

RELEVANT LEGISLATION

| | |
|--|---|
| Wildlife & Countryside Act 1981 (as amended) https://www.legislation.gov.uk/ukpga/1981/69 | The Conservation of Habitats and Species Regulations 2017 http://www.legislation.gov.uk/ukxi/2017/1012/contents/made |
|--|---|

SCOPE OF WORKS *(Briefly describe the extent of works planned to be undertaken at the site):*

Due to health and safety concerns it has been proposed that a footbridge should be installed to replace the current pedestrian level crossings at The Hatches and Farnborough North train station. In order to carry out these works it is proposed that a compound is to be created on an area of land adjacent to the western end of Spencer Close. In accordance with Network Rail's environmental policy and relevant UK legislation, an ecological assessment was required to determine any ecological constraints to the proposed works.

A Preliminary Ecological Appraisal of the site and adjacent habitats (where access was available) was conducted by Ecologist Ben Willers BSc (Hons) on 20th September 2020. The purpose of the survey was to determine the value of the site and surrounding areas for protected and notable species and check for any evidence of their presence, as well as the presence of any protected or notable habitats. The survey was carried out with specific regard for the presence or otherwise of badgers (*Meles meles*), bats, great crested newts (GCNs) (*Triturus cristatus*), nesting birds, hazel dormice (*Muscardinus avellanarius*), and reptiles, as well as the potential for any other protected or notable species or any invasive species to be present. In addition, as part of the desktop study forming part of the overall assessment, the presence of any statutory or non-statutory ecological designations on or adjacent to the site was determined using the Multi-Agency Geographic Information for the Countryside (MAGIC) resource and records of protected and notable species and any non-statutory designated sites not available through MAGIC for a 1 km radius surrounding the site were also requested from Surrey Biodiversity Information Centre (SBIC).

SITE DESCRIPTION AND NOTES *(Description of ecological features identified on site):*

Overview

The site could not be assessed in detail as access to the site could not be gained. However, a small area of the site could be viewed from the western end of Spencer Close. The site is located at the western end of Spencer Close, a residential road situated within the village of Frimley Green. The site consists of deciduous trees, ruderal vegetation, unimproved grassland, and large patches of bare ground. A bank is present along the eastern boundary of the site which has been colonised by species such as immature pedunculate oak (*Quercus robur*), common nettle (*Urtica dioica*), and bramble (*Rubus fruticosus*). Along the western boundary of the site is a line of coniferous trees. Adjacent to these trees, to the west, is the running line.

Biodiversity Baseline Units

Due to a lack of access, a biodiversity baseline survey could not be conducted.

Designated Sites

There are no statutory designated ecological sites located on or adjacent to the proposed work site, according to MAGIC. However, the following designated sites are located within a 5km radius of the site. These are shown in Table 1.

Table 1. Statutory designated sites within 5 km of the site.

| Level of designation | Designation | Name | Distance & direction from site |
|----------------------|-------------|---------------------|--------------------------------|
| International | SPA | Thames Basin Heaths | 1000 m south-east |
| | | Thames Basin Heaths | 3360 m west |
| | | Thames Basin Heaths | 4460 m south-west |
| | Ramsar | N/A | N/A |
| | SAC | Thames Basin Heaths | 1000 m south-east |

| | | | |
|----------|------|---|---------------------------------------|
| | | Thursley, Ash, Pirbright, and Chobham | 1670 m south-east & 3680 m north-east |
| | | Thames Basin Heaths | 3360 m west |
| | | Thames Basin Heaths | 4460 m south-west |
| National | SSSI | Basingstoke Canal | 990 m east & 4350 m south |
| | | Ash to Brookwood Heaths | 1090 m south-east |
| | | Castle Bottom to Yateley and Hawley Commons | 3560 m north-west |
| | | Colony Bog and Bagshot Heath | 3460 m east |
| | | Blackwater Valley | 4540 m north-west |
| | | Eelmoor Marsh | 4830 m south-west |
| | | Broadmoor to Bagshot Woods and Heaths | 4990 m north |
| | NNR | N/A | N/A |
| County | LNR | Snaky Lane | 2370 m south |
| | | Lakeside Park | 4730 m south |

Due to the distance of the work site from these designated sites and the small-scale, localised nature of the works, it is expected that any potential impacts (either direct or indirect) to these or any other statutory designated sites in the wider area will be negligible.

Badgers

The site provides some suitable foraging habitat for badgers. Furthermore, the bank along the eastern boundary offers suitable habitat for sett creation. However, in order to classify the potential of the bank for sett creation (low, moderate, high), access to the bank would be required.

Great Crested Newts

The site provides low value terrestrial habitat for GCNs due to the vast areas of bare ground. The desktop study found three fishing lakes within 500 m of the site (c.80 m west; c.240 m north-west; and c.250 m south). Although the fishing lakes are within the roaming range of GCNs, the lakes provide unsuitable breeding habitat for GCNs due to the presence of large numbers of fish. Therefore, a Habitat Suitability Index (HSI) assessment (Oldham *et al.*, 2000¹; ARG UK, 2010²) was not undertaken on these lakes.

The desktop study found that there have been no European protected species (EPS) licences granted for GCNs within a 5 km radius of the site. Additionally, the data search conducted by SBIC found no records of GCNs within 1 km of the site.

Based on a combination of the above factors, GCNs are considered unlikely to be encountered on site and, in turn, any impacts to them as a result of the works are expected to be negligible.

Reptiles

The site is considered to be of moderate-high suitability for reptiles as the areas of ruderal vegetation provide good foraging habitat. In addition, the railway adjacent to the site provides a wildlife corridor that connects the site to suitable reptile habitat in the wider landscape. Furthermore, the data search conducted by SBIC found records of adder (*Vipera berus*), grass snake (*Natrix natrix*), slow-worm (*Anguis fragilis*), and common lizard (*Zootoca vivipara*) within 1 km of the site.

Providing mitigation is incorporated into the works, any impacts to reptiles are expected to be low.

Nesting Birds

The site was considered to be of moderate suitability for nesting birds, with the trees on site providing suitable nesting habitat for a variety of bird species.

Providing basic mitigation measures are implemented, any impacts to nesting birds as a result of the works are expected to be low.

¹Oldham *et al.* (2010) Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal*, 10(4), pp. 143 – 155.

²Amphibian and Reptile Groups of the UK (2010) ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Available: <http://www.arguk.org/download-document/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5>

Dormice

The habitats on site are suboptimal for the requirements of dormice. In addition, the data search conducted by SBIC found no records of dormice within 1 km of the site; and according to MAGIC there have been no EPS licences granted for dormice within a 5 km radius of the site.

Due to the above factors, it is highly unlikely that dormice will be using the site. Therefore, any impacts to local dormouse populations is thought to be negligible.

Bats

None of the trees on site that could be viewed from Spencer Close were considered to be suitable for roosting bats. However, as the site could not be fully accessed, it is possible that trees are present that could be suitable for roosting bats.

The trees and ruderal vegetation provide suitable bat foraging habitat in the immediate vicinity of the site. Bats follow linear landscape features, such as the coniferous treeline along the western boundary of the site, to commute from their roost sites to their feeding grounds. Likewise, they use these features to navigate between feeding areas and alternative roosts. In addition, the nearby fishing lakes and woodland provide good foraging habitat for a range of bat species.

For the reasons discussed above, the site could not be assessed for its potential to support roosting bats. However, the site offers high suitability for foraging and commuting bats.

Invasive Species

As access to the site could not be gained, it is unknown if any invasive species are present on the site.

| ISSUES IDENTIFIED | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | <i>If yes, describe below</i> |
|---|-----|-------------------------------------|----|--------------------------|-------------------------------|
| <ul style="list-style-type: none"> • A biodiversity baseline survey could not be conducted; • A score could not be given for the site's potential to support badgers; • A score could not be given for the site's potential to support roosting bats; • High quality bat foraging habitat is present on site; • Moderate-high reptile habitat is present on site; • It is unknown whether invasive species are present on site. | | | | | |

| FURTHER ACTION REQUIRED? | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | <i>If yes, describe below</i> |
|--------------------------|-----|-------------------------------------|----|--------------------------|-------------------------------|
|--------------------------|-----|-------------------------------------|----|--------------------------|-------------------------------|

As the site could not be fully assessed for its suitability for sett creation due to lack of access it is recommended that a walkover of the site is conducted by a suitably qualified ecologist (SQE) prior to the commencement of any works. This walkover will allow the ecologist to search for any evidence of badgers, and to assess and score the site (negligible, low, moderate, high) for its suitability for sett creation. If any active badger setts were found prior to or during works, appropriate mitigation would need to be implemented. Mitigation would be likely to include exclusion of the badgers and closure of the sett(s) under licence if significant impacts resulting from the works could not be avoided.

If any night works are required at any stage, a sensitive lighting regime should be implemented to minimise unnecessary light spill and consequent disturbance of any foraging or commuting bats present in the area.

As the site could not be fully assessed for its suitability for roosting bats, it is recommended that the site is visited by a SQE to carry out this assessment before works commence. Alternatively, if no trees are to be felled or affected in any other way by the proposed works, works are free to continue. However, if trees are to be felled or affected in any other way, they must first be inspected by a SQE.

If any vegetation clearance works are to take place, this should ideally be timed to commence outside of the nesting season, which is defined as running from March to August, inclusive. If this is not feasible for any reason, a nesting bird survey must be carried out by a suitably qualified ecologist (SQE) shortly prior to the start of works to confirm the absence of any active nests. In the event that any active nests were found during this check or at any point during the works, a suitable exclusion zone must be put in place around the nest, with no work taking place in the area until the nest can be confirmed as no longer active by a SQE. In addition, if works take place during the nesting season, they should be carried out under a watching brief by a SQE.

As the works will impact suitable reptile habitat, reptile surveys should be carried out to establish whether reptiles are present. This is in line with Natural England's standing advice: (<https://www.gov.uk/reptiles-protection-surveys-and-licences>). Standard methods involving a SQE placing sheets of heavy-duty roofing felt (artificial refugia) in areas where they are most likely to be used by reptiles. So far as possible, the artificial refugia should be placed on slightly uneven ground so as not to lie completely flat (to create a varied microclimate).

GCNs are considered unlikely to be present on site. However, in the improbable event that any are encountered during works, it is a legal requirement to stop work until appropriate discussions have taken place and an alternative work strategy has been agreed, which may include consultation with Natural England.

As the site could not be fully assessed for the presence of invasive species due to lack of access, it is recommended that a walkover of the site is conducted by a SQE before the commencement of works to determine whether or not any invasive species are present.

Depending on the time elapsed between the September 2020 ecological survey and any further work to be carried out on site, an update assessment is likely to be required to determine any significant changes in habitat composition and how this may alter the findings discussed above.



Figure 1. Site location plan.

(Image taken from Google Earth Pro ©2020 Google).



Figure 2. Aerial view closeup of the site

(Image taken from Google Earth Pro ©2020 Google).



Image 1. View of the site standing at the entrance looking west.



Image 2. View of the bank on the western boundary.

APPENDIX B

Relevant Ecological Legislation and Policy

| Ecological Constraint | Relevant Legislation | Details |
|--------------------------------------|--|---|
| Designated nature conservation sites | <p>Conservation of Habitats and Species Regulations 2017 (as amended; Ref 12)</p> <p>National Parks and Access to the Countryside Act 1949 (Ref 13)</p> <p>Wildlife and Countryside Act (WCA) 1981 (as amended; Ref 14)</p> <p>Countryside and Rights of Way (CRoW) Act 2000 (Ref 15)</p> <p>NERC Act 2006 (Ref 5)</p> | <p>SAC, SPA and Ramsar sites</p> <p>An assessment is required where a plan or project may give rise to significant effects upon 'European Sites' including SACs, SPAs, and Ramsar sites. The process of assessing the implications of development on European Sites is known as Habitats Regulations Assessment (HRA). The first stage in this process is screening.</p> <p>SSSIs</p> <p>Works on, or adjacent to, a SSSI requires assent from Natural England before they can legally proceed.</p> <p>National Parks and AONBs</p> <p>The relevant authority should be consulted regarding works in or near National Parks or AONBs.</p> <p>Local Nature Reserves</p> <p>The relevant authority should be consulted regarding works in or near LNRs.</p> <p>Undesignated nature reserves</p> <p>The relevant authority should be consulted regarding works in or near undesignated nature reserves.</p> |
| Habitats | <p>NERC Act 2006 (Ref 5)</p> <p>Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (Ref 16)</p> | <p>Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of habitats that are of principal importance for the conservation of biodiversity, and to take, and promote others (including public bodies) to take, such steps to further the conservation of these habitats.</p> |
| Invasive species | <p>WCA 1981 (as amended; Ref 14)</p> | <p>Section 14 of the WCA 1981 (as amended) makes it illegal to plant or otherwise cause to grow in the wild any plant listed in Schedule 9 of the Act.</p> |

| Ecological Constraint | Relevant Legislation | Details |
|-----------------------|---|--|
| Great crested newt | <p>Conservation of Habitats and Species Regulations 2017 (Ref 12)</p> <p>WCA 1981 (as amended; Ref 14)</p> <p>NERC Act 2006 (Ref 5)</p> <p>Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (Ref 16)</p> | <p>It is an offence to deliberately kill or injure a great crested newt, to destroy a pond or refugia which are used as a breeding/ resting sites, or to deliberately disturb great crested newts and affect their ability to survive, breed or hibernate.</p> <p>It is an offence to intentionally or recklessly disturb a great crested newt whilst it is in a place of shelter, or to obstruct access to a place of shelter.</p> <p>Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of species that are of principal importance for the conservation of biodiversity, and to take, and promote others (including public bodies) to take, such steps to further the conservation of these species. These species will be considered by Planning Authorities in regard to the National Planning Policy Framework to conserve and enhance the natural environment.</p> |
| Reptiles | <p>WCA 1981 (as amended; Ref 14)</p> <p>NERC Act 2006 (Ref 5)</p> <p>Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (Ref 16)</p> | <p>It is an offence to kill, injure, capture, to intentionally or recklessly disturb a species listed on Schedule 5 of the W&CA whilst it is in a place of shelter, or to intentionally or recklessly obstruct access to a place of shelter.</p> <p>Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of species that are of principal importance for the conservation of biodiversity, and to take, and promote others (including public bodies) to take, such steps to further the conservation of these species. These species will be considered by Planning Authorities in regard to the National Planning Policy Framework to conserve and enhance the natural environment.</p> |
| Birds | <p>Wildlife and Countryside Act 1981 (as amended; Ref 14)</p> <p>Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (Ref 16)</p> | <p>It is an offence to damage or destroy a wild bird's nest whilst it is in use, and to kill or injure a wild bird or destroy a wild bird's egg. For some species, their nests are protected year-round whether in use or not, and it is also an offence to disturb these species while they are nesting or to disturb their dependant young.</p> <p>Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of species that are of principal importance for the conservation of biodiversity in England, and to take, and promote others (including public bodies) to take, such steps to further the conservation of these species. These are listed in 'Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services'. These species will be considered by Planning Authorities in regard to the National Planning Policy Framework to conserve and enhance the natural environment.</p> |

| Ecological Constraint | Relevant Legislation | Details |
|-----------------------|--|---|
| Bats | <p>Conservation of Habitats and Species Regulations 2017 (Ref 13)</p> <p>Wildlife and Countryside Act 1981 (as amended; Ref 14)</p> <p>NERC Act 2006 (Ref 5)</p> <p>Wild Mammals (Protection) Act (Ref 17)</p> <p>Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (Ref 16)</p> | <p>It is an offence to deliberately kill or injure a European Protected Species (EPS), to destroy breeding/resting sites, or to deliberately disturb these species and affect their ability to survive, rear young, breed, or hibernate.</p> <p>It is an offence to intentionally or recklessly disturb a species listed on Schedule 5 whilst it is in a place of shelter, or to obstruct access to a place of shelter.</p> <p>Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of species that are of principal importance for the conservation of biodiversity, and to take, and promote others (including public bodies) to take, such steps to further the conservation of these species. These species will be considered by Planning Authorities in regard to the National Planning Policy Framework to conserve and enhance the natural environment.</p> <p>It is an offence to inflict unnecessary suffering to any wild mammal with intent.</p> |
| Hazel dormouse | <p>Conservation of Habitats and Species Regulations 2017 (Ref 12)</p> <p>Wildlife and Countryside Act 1981 (as amended; Ref 14)</p> <p>NERC Act 2006 (Ref 5)</p> <p>Wild Mammals (Protection) Act (Ref 17)</p> <p>Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (Ref 16)</p> | <p>It is an offence to deliberately kill or injure an EPS, to destroy breeding/resting sites, or to deliberately disturb these species and affect their ability to survive, rear young, breed, or hibernate.</p> <p>It is an offence to intentionally or recklessly disturb a species listed on Schedule 5 whilst it is in a place of shelter, or to obstruct access to a place of shelter.</p> <p>Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of species that are of principal importance for the conservation of biodiversity, and to take, and promote others (including public bodies) to take, such steps to further the conservation of these species. These species will be considered by Planning Authorities in regard to the National Planning Policy Framework to conserve and enhance the natural environment.</p> <p>It is an offence to inflict unnecessary suffering to any wild mammal with intent.</p> |

| Ecological Constraint | Relevant Legislation | Details |
|-----------------------|--|---|
| Water vole | <p>Wildlife and Countryside Act 1981 (as amended; Ref 14)</p> <p>NERC Act 2006 (Ref 5)</p> <p>Wild Mammals (Protection) Act (Ref 17)</p> <p>Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (Ref 16)</p> | <p>It is an offence to kill, injure, capture, to intentionally or recklessly disturb a species listed on Schedule 5 of the W&CA whilst it is in a place of shelter, or to intentionally or recklessly obstruct access to a place of shelter.</p> <p>Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of species that are of principal importance for the conservation of biodiversity in England, and to take, and promote others (including public bodies) to take, such steps to further the conservation of these species. These are listed in 'Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services'. These species will be considered by Planning Authorities in regard to the National Planning Policy Framework to conserve and enhance the natural environment.</p> <p>It is an offence to inflict unnecessary suffering to any wild mammal with intent.</p> |
| Otter | <p>Conservation of Habitats and Species Regulations 2017 (Ref 12)</p> <p>Wildlife and Countryside Act 1981 (as amended; Ref 14)</p> <p>NERC Act 2006 (Ref 5)</p> <p>Wild Mammals (Protection) Act (Ref 17)</p> <p>Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (Ref 16)</p> | <p>It is an offence to deliberately kill or injure a European Protected Species (EPS), to destroy breeding/resting sites, or to deliberately disturb these species and affect their ability to survive, rear young, breed, or hibernate.</p> <p>It is an offence to intentionally or recklessly disturb a species listed on Schedule 5 whilst it is in a place of shelter, or to obstruct access to a place of shelter.</p> <p>Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of species that are of principal importance for the conservation of biodiversity, and to take, and promote others (including public bodies) to take, such steps to further the conservation of these species. These species will be considered by Planning Authorities in regard to the National Planning Policy Framework to conserve and enhance the natural environment.</p> <p>It is an offence to inflict unnecessary suffering to any wild mammal with intent.</p> |
| Badger | <p>Protection of Badgers Act (1992; Ref 18)</p> <p>Wild Mammals (Protection) Act (Ref 17)</p> | <p>It is an offence to damage or destroy a badger sett; obstruct any entrance of a badger sett; and disturb a badger whilst it is occupying a badger sett.</p> <p>It is an offence under to inflict unnecessary suffering to any wild mammal with intent.</p> |

| Ecological Constraint | Relevant Legislation | Details |
|-----------------------|--|---|
| Hedgehog | <p>NERC Act 2006 (Ref 5)</p> <p>Wild Mammals (Protection) Act (Ref 17)</p> <p>Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (Ref 16)</p> | <p>Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of species that are of principal importance for the conservation of biodiversity, and to take, and promote others (including public bodies) to take, such steps to further the conservation of these species. These species will be considered by Planning Authorities in regard to the National Planning Policy Framework to conserve and enhance the natural environment.</p> <p>It is an offence to inflict unnecessary suffering to any wild mammal with intent.</p> |

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