

Reopening of the Grain Branch Line for Passenger Services

GRIP 2 Feasibility Study - Ecology Report



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1 Introduction

██████████ have been commissioned by Medway Council to undertake an Environmental and Ecology Assessment for Medway New Passenger Railway Station GRIP 2 Feasibility Study.

This report provides a high-level study of the ecological constraints identified within the Site and ecological zone of influence of the proposed development.

2 Methodology

2.1 Desk Study

To assess the potential ecological impacts of the scheme, a desktop study has been undertaken to identify the presence of sensitive ecological receptors at the site and within the surrounding area. Data has been obtained from a range of information sources including:

- Multi-Agency Geographic Information for the Countryside (MAGIC);
- National Biodiversity Network (NBN); and
- Kent and Medway Biological Records Centre (KMBRC).

MAGIC maps have been used to obtain information relating to statutory and non-statutory conservation designations within close proximity to the site, with additional information supplied by KMBRC. Ecological data obtained from NBN and KMBRC provides data relating to protected and notable species recorded within the local area.

For the purposes of this report, a 2km search area of the Site was used to ensure sensitive receptor areas were identified.

2.2 Walkover Survey

The walkover survey was completed on the 26th and 27th June 2019 and visited areas identified during the desk study as having higher risks and constraints within the Ecological Zone of Influence. Habitats were noted for their suitability for protected species to be present. Findings of this walkover survey are shown on the Ecological Features Map (Maps 2.1 to 2.3) included in Appendix B of the Environment Report.

The survey was completed using public footpaths and publicly accessible land only, and therefore was limited in its coverage of the Site. This walkover survey was completed for feasibility purposes, and therefore does not constitute a full Extended Phase 1 Habitat Survey.

3 Ecological Constraints

3.1 Desk Study

3.1.1 Statutory Designated Sites

The data search using MAGIC and KMBRC identified that there are 8 statutory designated sites of importance to nature conservation within a 2km buffer of the Site. These are shown on the Natural Designations Map (Maps 1.1) attached in Appendix B of the Environment Report.

The Site search area overlaps with the Thames Estuary and Marshes, which is designated as a Ramsar site and Special Protection Area (SPA).

The Site search area also overlaps the South Thames Estuary and Marshes Site of Special Scientific Interest (SSSI).

Other statutory designations within a 2km buffer of the Site include –

- Dalham Farm SSSI – approximately 180m to the north;
- Chattenham Woods and Lodge Hill SSSI – approximately 420m to the south;
- High Halstow National Nature Reserve (NNR) – approximately 800m to the north;
- Northward Hill SSSI – approximately 800m to the north;
- Medway Estuary and Marshes Ramsar, SPA and SSSI - approximately 900m to the east and 1.4km to the south; and
- Medway Marshes Marine Conservation Zone (MCZ) – approximately 900m to the east.

3.1.2 Non-Statutory designated Sites

Non-statutory designated site information has been returned from KMBRC. These are shown on the Natural Designations (Maps 1.1 and 1.2) included in Appendix B of the Environment Report.

The Site overlaps with the Canal and Grazing Marsh, Higham Local Wildlife Site (LWS) at the western section.

The Site also overlaps with the London Area Greenbelt (Gravesham District) at the western section of the Site.

Other non-statutory designations within a 2km buffer of the Site include –

- RSPB Northward hill – approximately 180m to the north;
- Queens Farm Roadside Nature Reserve – approximately 250m to the south;
- Telegraph Hill LWS – approximately 840m to the south;
- RSPB Shone Marshes – approximately 1.9km to the west; and
- Court Wood, Shorne LWS – approximately 1.7km to the south-west.

There are a number of Ancient Woodlands within a 2km search area of the Site. None of these overlap with the Site and the closest is approximately 400m to the south and 600m to the north of the Site.

3.1.3 Priority Habitats

Habitats listed within the UK Biodiversity Action Plan (BAP) have been identified within the search area including –

- Rivers and streams;
- Arable field margins;
- Hedgerows;
- Broadleaved woodland; and
- Coastal and floodplain grazing marsh.

3.1.4 Tree Preservation Orders

No information has been provided with regards to Tree Preservation Orders within the Site. Therefore, this constraint is considered to be unknown at this stage and should be confirmed by the Local Planning Authority.

3.1.5 Protected and Notable Species Records

KMBRC has returned records for protected and notable species as summarised below. Full details of these records are available on request.

Bats

A total of 11 species of bat have been recorded within 5km of the Site including serotine (*Eptesicus serotinus*), Daubenton's (*Myotis daubentonii*), whiskered (*Myotis mystacinus*), natterer's (*Myotis nattereri*), Leislars (*Nyctalus leisler*), noctule (*Nyctalus noctula*), nathusius' pipistrelle (*Pipistrellus nathusii*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and brown long-eared bat (*Plecotus auritus*).

A number of bat roosts have been identified within 2km of the Site, including 4 roosts adjacent to the Site.

A search using NBN has also identified the presence of bat species including brown long-eared, common pipistrelle, Leislars, soprano pipistrelle, and whiskered/Brandt's.

Great Crested Newts

A total of 78 records for great crested newt (*Triturus cristatus*) (GCN) have been returned with 45 of these being since 1999. The closest of these records are approximately 720m and 800m to the south, with further records approximately 1.5km to the south.

A search using NBN has also identified the presence of GCN within 1km of the Site.

Birds

A total of 73,415 bird records from 366 species have been returned within a 2km search area of the Site. Based on the close proximity to the River Thames and River Medway and estuaries, this search includes a high number of water birds. Of the species recorded, 74 are listed on Schedule 1 of the Wildlife and Countryside Act (WCA) 1981 as amended; 58 on the Birds of Conservation Concern (BoCC) Red List; and 46 on the UK Biodiversity Action Plan (BAP).

A search using NBN has also identified the presence of bird species listed on Schedule 1, Part 1 of the WCA.

Reptiles and Common Amphibians

A total of 91 records for common lizard (*Zootoca vivipara*) have been returned with many being within private residence approximately 1km to the south of the Site. Records have also been identified approximately 700m to the north and 1km to the south. The closest records are at Lower Higham within the southern section of the Site.

A total of 100 records for slow worm (*Anguis fragilis*) have been returned with the closest being in Lower Higham within the southern section of the Site.

A total of 90 records have been returned for grass snake (*Natrix helvetica*) with the closest being in Lower Higham within the southern section of the Site.

A total of 17 records for adder (*Vipera berus*) have been returned with the majority of records being from Cliffe Quarry approximately 480m to the north.

Palmate newt (*Lissotriton helveticus*) records are mostly historical, with two recent records identified in 2017 and 2011, 1.6km to the north and 1km to the south respectively.

A total of 119 records for smooth newt (*Lissotriton vulgaris*) have been returned, with 34 of these being since 1999. Most records appear to be to the west of the Site at RSPB Shorne Marshes (approx. 1.9km to the west) as well as at an undisclosed location within 2km of the Site, 830m to the north and 600m to the south at Kingsnorth Power Station. The most recent records are from 2018 approximately 1.8km to the south.

Common toad (*Bufo bufo*) and common frog (*Rana temporaria*) have been identified within 2km of the Site.

Mammals

A total of 157 records for water vole (*Arvicola amphibius*) have been returned. The closest of these records was in a watercourse at Beckley Hill, Higham within the western section of the Site and within Higham Marshes, directly adjacent to the north of the Site.

Eurasian badgers (*Meles meles*) have been recorded within 2km of the Site. No records for badger setts have been returned.

A total of 87 records for west European hedgehog (*Erinaceus europaeus*) have been returned within 2km of the Site. A search using NBN has also identified the presence of hedgehog.

A single hazel dormouse (*Muscardinus avellanarius*) record has been returned from 1963.

There are historical records for European otter (*Lutra lutra*) from the 1960's and from 1972.

Invertebrates

Stag beetle (*Lucanus cervus*) have been recorded to the south and west of the Site, most recently in 2011.

Swallowtail (*Papilio machaon*), purple emperor (*Apatura iris*) and white letter hairstreak (*Satyrrium w-album*) have been recorded to the north and south of the Site.

Chalk hill blue (*Polyommatus coridon*) have been recorded 200m to the south of the western section of the Site of the Hoo junction most recently in in 2017.

A number of invertebrate records listed on the UK BAP have also be returned.

Invasive Species

Marsh frog (*Pelophylax ridibundus*) has been recorded, most recently in 2017 within 2km of the Site, with 152 records in total including historical records.

3.1.6 Granted European Protected Species Licences

Granted European Protected Species Licenses (EPSL) have been identified through MAGIC for bats and great crested newts within 2km of the Site. It should be noted that these records have not been updated since 2016. Additional licences may have been granted for other species since then.

3.2 Site survey findings

The walkover survey identified habitats suitable for a range of protected and notable species, however it was limited to public footpaths and accessible land. These findings have been summarised in Table 1 below.

Table 1: Site Walkover Survey Summary

Ecological Feature Likely to be Present (data records exist)	Site Observations	Additional Work/Surveys Required and Seasonal Constraints	Permission required if species found during surveys /Time Constraint
Habitats	Habitats listed within the UK BAP were identified during the walkover survey including Rivers and streams, arable field margins, hedgerows, broadleaved woodland, and coastal and floodplain grazing marsh.	<p>A detailed Extended Phase 1 Habitat Survey should be undertaken once the development areas have been finalised.</p> <p>Survey can be completed at any time of the year. Land access will be required to complete the full extended phase 1 habitat survey.</p>	<p>SSSI, Ramsar, SPA and LWS are likely to be impacted during works both directly and indirectly.</p> <p>Impacts to the SSSI, Ramsar and SPA should be discussed with Natural England and the Local planning Authority. A Habitats regulations Assessment (HRA) will be required to assess the impacts to the Ramsar and SPA sites.</p> <p>Impacts to the LWS should be discussed with the Local Planning Authority.</p>
Amphibians including GCN	Open water bodies are present adjacent to the central and western sections of the Site which could be suitable for GCN and common amphibians. Suitable terrestrial habitat is also present. There are a number of data records for GCN within the search area.	<p>Ponds within 500m of the construction zone should have Habitat Suitability Index (HSI) surveys undertaken. Those identified as suitable for GCN should have presence/absence survey undertaken. If construction is not to start within the same year then eDNA surveys may be used to determine presence/absence. Population studies will be required within 12 months of construction on ponds identified as positive for GCN.</p> <p>Survey season is between early March and the end of June only.</p>	<p>If GCN are found within the Site, an EPSL may be required from Natural England before construction works begin. Mitigation will be dependent on survey results and final scheme layout.</p> <p>EPSL will only be issued once planning permission is granted.</p> <p>EPSL generally taken a minimum of 60 to write and submit following the surveys.</p>
Bats	Habitats suitable for foraging and commuting bats has been identified along hedgerows, woodlands, and watercourses. Mature trees can provide suitable roosting potential and a number of mature trees have been identified including those covered in dense ivy within the western section of the Site.	Further roosting surveys must be undertaken where trees and woodland habitats are to be removed. Activity surveys should also be undertaken to determine how bats currently use the landscape and how development may impact on this activity. Mitigation for lighting may be required.	<p>If bats are found roosting in trees to be removed, an EPSL may be required from Natural England before construction works begin. Mitigation will be dependent on survey results and final scheme layout.</p> <p>EPSL will only be issued once planning permission is granted.</p>

Ecological Feature Likely to be Present (data records exist)	Site Observations	Additional Work/Surveys Required and Seasonal Constraints	Permission required if species found during surveys /Time Constraint
		Bat activity and roosting surveys can be undertaken between April and October.	EPSL generally taken a minimum of 60 to write and submit following the surveys. Note – this is now a chargeable service from Natural England
Badgers	Habitats have been identified during the walkover survey that are suitable for badgers. No setts were identified within the areas surveyed; however, the walkover survey was limited to public footpaths and therefore did not cover all field margins and woodland areas within the search area.	Locations of badger setts should be identified within the extended phase 1 habitat survey.	If a badger sett is identified within the construction area, a licence to interfere with the sett for development will be required from Natural England. Mitigation will be dependent on survey results and final scheme layout. Licences generally take a minimum of 60 to write and submit following the surveys.
Breeding Birds	Habitat for breeding birds has been identified including trees, hedgerows and woodlands. Birds species recorded singing, calling or flying over the Site during the walkover survey included house sparrow (<i>Passer domesticus</i>), black headed gull (<i>Chroicocephalus ridibundus</i>), wood pigeon (<i>Columba palumbus</i>), carrion crow (<i>Corvus corone</i>), goldfinch (<i>Carduelis carduelis</i>), chiffchaff (<i>Phylloscopus collybita</i>), blackbird (<i>Turdus merula</i>), magpie (<i>Pica pica</i>) and juvenile coot (<i>Fulica atra</i>). Singing or calling birds are associated with likely nesting within the proximity of the calls.	Breeding bird surveys should be completed to identify the species assemblage of nesting birds within the Site at key locations, in particular within the western section of the Site. Surveys can be completed between March and June.	Where possible vegetation clearance should be completed outside of the breeding bird survey. If this is not possible a pre-commencement survey should be completed and an ecological watching brief present during clearance works. Mitigation will be dependent on survey results and final scheme layout.
Invasive Species	Himalayan balsam has been identified along Canal Road within the western section of the Site and is a scheduled invasive species. Buddleja has also been identified and is locally invasive.	Locations of further invasive species should be identified within the extended phase 1 habitat survey. Where this is completed outside of the optimal flowering season for certain species, a further dedicated invasive species survey should be completed. Details of	Method statement must be produced and agreed with the Local Planning Authority.

Ecological Feature Likely to be Present (data records exist)	Site Observations	Additional Work/Surveys Required and Seasonal Constraints	Permission required if species found during surveys /Time Constraint
		locations must be included within the Construction Management Plan or similar.	
Reptiles	Habitats suitable for reptiles have been identified within the Site and ecological zone of influence. A number of data records have also been returned and it is therefore considered likely that common reptile species will be present along the railway corridor.	Further presence/absence surveys should be completed. These consist of 8 survey visits between April and September (July and August are generally sub-optimal due to high temperatures).	A method statement and potential Site exclusion will need to be agreed with the local Planning Authority. Translocation generally takes 60 days and a suitable receptor Site will need to be identified. Further mitigation will be dependent on survey results and final scheme layout.
Water Voles	A number of water courses including drains and small streams cross the Site at various points. Open water bodies are present adjacent to the central and western sections of the Site. A number of data records for water voles have also been returned. Water vole burrows and latrines were identified during the walkover survey within shall water courses near Sharnal Street within the eastern section of the Site.	Further water course surveys should be completed to determine the presence of water voles within the Site once the development areas have been determined. Surveys should be completed between April and October.	A method statement must be produced to limit the impacts to water vole habitat. Where impacts cannot be avoided, a licence may be issued from Natural England, however these are generally not issued for the specific purpose of development. Licences are only issued once planning permission has been granted.

4 Conclusion and Recommendations

A review of the final scheme and associated works, including construction compounds and access tracks, will be required to create a detailed impact assessment within the Site.

The route passes through, and close to, a series of designated sites of international importance for over wintering and breeding birds. Construction work and additional train movements could have an adverse effect on bird breeding or the foraging value of parts of these sites. Bird surveys, as well as noise and air quality surveys will all need to be undertaken before these potentially adverse impacts can be assessed.

If adverse effects are found to occur, there are limits to how these can be adequately mitigated, which should be seen as a potential risk to the Scheme as a whole.

Consultation with the Local Planning Authority and Natural England should therefore commence at the earliest convenience to address the following constraints relating to designated sites -

- The western section of the scheme currently impacts directly on Ramsar and SSSI designated sites. Consultation with Natural England is required to determine the feasibility of this scheme and to explore alternative options.
- Due to the proximity of the Site to the Thames Estuary and Marshes SPA, it is also likely that the scheme will be subject to a Habitats Regulation Assessment (HRA) to assess the potential impacts on this European Protected Site as well as for the Ramsar designation.
- Consultation will be required with Natural England for the entire scheme as it lays within the SSSI Impact Risk Zone for several SSSI's.

While the final scheme layout is being determined, it is recommended that ecological surveys are commissioned to commence to gather further ecological information for the Site. The following will be required to secure planning permission and obtain the appropriate licence applications –

- Extended Phase 1 Habitat Survey – required to map key habitats and identify further areas required for species surveys. This can be completed at any time of the year, however, should be completed at the earliest opportunity to help inform the protected species surveys.
- Great Crested Newt – HSI surveys to evaluate the suitability of ponds within 500m of the scheme for GCN. Suitable ponds should then be surveyed for presence/absence of GCN (4-6 survey visits from April - June).
- Bats (roosting and activity) – mature trees to be impacted by the scheme should be identified and surveyed for roosting bats. Activity surveys should be completed to determine how bats are currently using the landscape, in particular within the western section of the Site where the greatest impacts are likely. These surveys can be completed between April and October.
- Badgers - Locations of badger setts should be identified within the Extended Phase 1 Habitat Survey.

- Breeding Birds - surveys should be completed to identify the species assemblage of nesting birds within the Site at key locations, in particular within the western section of the Site. Surveys can be completed between March and June.
- Invasive Species – invasive species should be identified within the Extended Phase 1 Habitat Survey. A suitable method statement should be produced.
- Reptiles – presence/absence surveys consisting of 8 survey visits should be completed. These can be completed between April and September (July and August being sub-optimal months).
- Water Voles - Further water course surveys should be completed to determine the presence of water voles within the Site once the development areas have been determined. Surveys should be completed between April and October.

5 Ecological Report Limitations

The information reported herein is based only on the interpretation of data collected during the desk study investigations and the high-level site visit. This work pertains specifically to the identification of protected species on the proposed site. Information provided to Pell Frischmann by Kent and Medway Biological Records Centre (KMBRC) and other statutory information sources has been accepted as being accurate and valid.

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

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

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

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

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

6 References

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