



Deighton STW

Preliminary Ecological Appraisal

April 2024

Mott MacDonald Bentley
7th Floor
26 Whitehall Road
Leeds LS12 1BE
United Kingdom

T +44 (0)113 394 6700
mottmacbentley.co.uk

Deighton STW

Preliminary Ecological Appraisal

April 2024

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A1	29/08/2023	MW	VA	GM	
A2	08/11/2023	MW/TG	VA	GM	
A3	10/04/2024	MW/FM	PR	GM	

Document reference: HUDD-MMB-WWT-SED-SU-J-0002 AC.P03 | A3 |

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

Executive Summary	8
1 Introduction	10
1.1 Background	10
1.2 Aims and Objectives	10
1.3 Zone of Influence	11
1.4 Legislative and Policy Framework	11
2 Methods	12
2.1 Desk Study	12
2.2 UKHab and Protected Species Survey	12
2.3 Assessment of Conservation Importance	12
2.4 Limitations	13
3 Results	14
3.1 Desk Study	14
3.1.1 Statutory designated sites for nature conservation	14
3.1.2 Non-statutory designated sites for nature conservation	14
3.2 Priority Habitat	14
3.3 Waterbodies	14
3.4 UKHab Survey	15
3.4.1 (u1f 81) Ruderal/ephemeral on rocky substrate	15
3.4.2 (u1b) Developed land – sealed surface	15
3.4.3 (g3c) Other neutral grassland	15
3.4.4 (h3h) Dense mixed scrub	15
3.4.5 (u1b5) Buildings	15
3.4.6 (u1b6 852) STW infrastructure	16
3.5 Protected and Notable Plant Species	16
3.6 Invasive Non-native Plant Species	16
3.6.1 Desk Study	16
3.6.2 Survey	16
3.7 Protected and Notable Animal Species	16
3.7.1 Breeding birds	16
3.7.2 Bats	17
3.7.3 Otter	18
3.7.4 Water vole	19
3.7.5 Badger	19
3.7.6 Other mammals	19
3.7.7 Great crested newt	19
3.7.8 Other amphibians	20
3.7.9 Widespread reptiles	20
3.7.10 White-clawed crayfish	20

3.7.11	Fish	20
4	Interpretation and Recommendations	21
4.1	Designations	21
4.2	Habitats	21
4.3	Invasive Species	21
4.4	Birds	21
4.5	Bats	22
4.6	Otter	22
4.7	Water vole	22
4.8	Badger	23
4.9	Other mammals	23
4.10	Great crested newt and other amphibians	23
4.11	Reptiles	23
4.12	White-clawed crayfish	24
4.13	Fish	24
5	Conclusion	25
6	References	26
	Appendices	28
A.	Summary of Assessment Methods	29
A.1	Bats	29
A.2	Great crested newts	29
A.3	Badger	30
A.4	Otter	30
A.5	Water Vole	30
B.	UKHab Survey Map	31
C.	Photographs	33
D.	Condition Assessments	34
E.	Baseline habitats	35
	Tables	
Table 3.1:	Summary of statutory sites for nature conservation	14
Table 3.2:	Summary of non-statutory sites for nature conservation	14
Table 3.3:	Summary of bird species records returned and their protection within a 2km radius of the Site	16

Table 3.4:	Historical records of bats recorded within 2 km of the Site	17
Table A.1:	Structures and trees criteria for roosting bats	29

Figures

Figure 1.1:	Site – planning boundary (red) and wider works boundary (blue).	10
-------------	---	----

Executive Summary

Mott MacDonald Bentley (MMB) was instructed by Yorkshire Water (YW) to carry out a Preliminary Ecological Appraisal Report (PEAR) at Deighton Sewage Treatment Works (STW), north Huddersfield, West Yorkshire. The planning boundary is an existing hardstanding access track and small area (0.0122ha) of sparsely vegetated urban land, hereafter referred to as 'the Site'. The rest of the works are considered Permitted Development and are referred to as 'the works area'.

This PEAR was commissioned to identify whether there are known or potential ecological features (nature conservation designations and protected and notable habitats and species) that may constrain or influence any works at the Site. In order to deliver the PEAR, a desk study, UK Habitat classification survey and protected species survey were undertaken by suitably qualified ecologist, to identify ecological features associated with the Site and in the wider potential zone of influence (Zoi).

Two statutory sites Dalton Bank Local Nature Reservice (LNR) and John Ramsden Canal Local Wildlife Site (LWS) were both over 80m from the works areas of the STW and will not be impacted.

Habitats across the Site include ruderal/ephemeral and developed land – sealed surface; of which ruderal/ephemeral habitat will be impacted only. Within the works area there is other neutral grassland (g3c), dense mixed scrub (h3h), developed land (sealed surface) (u1b), ruderal/ephemeral on rocky substrate (u1f 81), buildings (u1b5) and sewage treatment infrastructure (u1b6 852).

Invasive species (Indian balsam *Impatiens glandulifera*) was recorded adjoining the eastern boundary of the works on the River Colne banks. Due to the balsam stands being located 10m below the works on the other side of a high river wall a precautionary approach will be taken using toolbox talks. The works area provided grassland, dense scrub and STW infrastructure for a range of birds. No vegetation clearance suitable for nesting birds is planned under the scope of works. However if required, vegetation clearance should take place between October and February, inclusive, outside of the core breeding bird season. Some birds nest outside the core breeding season, and should nests be found, a demarcation zone will be implemented by the ecologist (species specific but typically no less than a five-metre radius from the nest), within which no works can take place until the chicks have fledged (to be confirmed by the ecologist).

The adjacent river corridor habitat is suitable for roosting and foraging bats. The works will not directly affect the woodland or river corridor. Night-time working should be avoided, where possible, to minimise the impacts to foraging and commuting bats within the area. All construction and operational phases of the proposed works should avoid artificially lighting trees, however if this is not possible an ecologist should be consulted for advice.

The River Colne and connected canal network adjacent to the east of the Site provided habitat for otter holts and water voles, foraging and resting, a precautionary approach should be taken on Site with excavated areas and lighting.

Scrub and grassland areas also provided habitat for hedgehog *Erinaceus europaeus*, so a precautionary approach should be taken before any possible vegetation clearance of dense scrub on the east boundary of the works area.

There were no records of great crested newt *Triturus cristatus* (GCN) and no suitable ponds within 500 m of the Site so it is unlikely GCN are present within the works boundary. There is the possibility of common toad *Bufo* using the grassland and scrubby areas of the STW so a precautionary approach should be taken before any possible vegetation clearance. The River Colne and connected canal system provided habitat for breeding white-clawed crayfish and egg laying brown trout *Salmo trutta*. As the River Colne is located adjacent to the east of the Site a precautionary approach should be taken with any spillages of chemicals and removal of water from the sludge tanks.

1 Introduction

1.1 Background

Mott MacDonald Bentley (MMB) was instructed by Yorkshire Water (YW) to undertake a Preliminary Ecological Appraisal Report (PEAR) of the Deighton Sewage Treatment Works (STW) Site, which is located in north Huddersfield, Yorkshire, at National Grid Reference (NGR SE 17193 19223).

An overview of the works area is shown in Figure 1.1. The total works area (permitted development and planning) is shown in blue, the area subject to planning shown in red. This report is to inform on the ecological constraints of the works within the planning red line boundary, hereafter referred to as 'the Site'.

Figure 1.1: Site – planning boundary (red) and wider works boundary (blue).



Source: MMB, 2023.

1.2 Aims and Objectives

The aim of this report is to provide an assessment of the protected and/or notable habitats and species which occur or have the potential to occur on or near the Site which may be impacted by the proposed works. The report follows the 'Guidelines for Preliminary Ecological Appraisal' (CIEEM, 2017).

The objectives are to:

- Identify any designated sites for natural conservation and habitats on, near and adjacent to the Site;
- Identify any notable and/or protected plant or animal species of conservation value, which may occur on or near the Site;
- Identify the presence of any invasive plant species on or adjacent to the Site;
- Provide a habitat map with target notes of ecological features as identified above;
- Undertake a preliminary assessment of the potential impacts on any ecological receptors of conservation value identified on, near or adjacent to the Site; and,
- Recommend further surveys, mitigation and enhancement measures as appropriate.

1.3 Zone of Influence

The current guidance on ecological assessments (CIEEM, 2019) recommends that all ecological features that occur within a 'zone of influence' (Zol) for a proposed development are investigated. The Zol includes:

- Areas directly within the land take for the proposed development and access;
- Areas which will be temporarily affected during construction;
- Areas likely to be impacted by hydrological disruption; and,
- Areas where there is a risk of pollution and noise disturbance during construction and/or operation.

The Zol is variable depending on the ecological receptors affected. With respect to this report, it is considered to be all land within the Site boundary unless stated otherwise.

1.4 Legislative and Policy Framework

The construction and operational activities for the proposed works must comply with UK nature conservation legislation and with national and local biodiversity policies. The main pieces of legislation in the UK are the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). The biodiversity policies which are most relevant are the National Planning Policy Framework (NPPF, 2019), Biodiversity 2020 and the Kirklees Biodiversity Action Plan.

Under the Natural Environment and Rural Communities (NERC) Act 2006, all public bodies are required to have regard to biodiversity conservation when carrying out their function. Under this act a list of habitats and species that are of principal importance for the conservation of biodiversity in England are published under Section 41 (S41).

2 Methods

2.1 Desk Study

A desk study was undertaken of the designated sites for nature conservation, habitats of conservation importance and protected and notable species which occur within 2km of the Site. Data was obtained from the West Yorkshire Ecology Service as well as relevant publications, reports and online databases. These included data from Defra's MAGIC maps website (<https://magic.defra.gov.uk/>), Joint Nature Conservation Committee (JNCC) and the Kirklees BAP.

2.2 UKHab and Protected Species Survey

An ecology survey at Deighton STW was undertaken on 01 August 2023 by a senior ecologist from Mott MacDonald, during which all habitats within the Zol were surveyed using standard UK Habitat Classification methodology (UKHab, 2023). Habitats were classified to level 4 where possible.

The Zol is defined as the area of works and immediate surrounding habitat which could potentially be affected by the works shown in Figure 1.1. In addition, any potential for, or evidence of protected species or invasive non-native species were recorded. Where suitable habitat existed, the Zol was extended for certain protected and notable species which could potentially be affected by the proposed works. Results from the walkover are reported using the DAFOR (Dominant, Abundant, Frequent, Occasional, Rare) scale, indicating the cover of vegetation.

Dominant plant species were noted, as were any protected, uncommon or invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

2.3 Assessment of Conservation Importance

The conservation importance was assessed for each of the main ecological features (designated sites, habitats and species) that occur within the Zol. The following are some of the criteria that are used in the assessment of the conservation importance:

- Designation of the site;
- Rarity of the species or habitats;
- Presence of Red Data Book (RDB) or endemic species;
- Presence of diverse assemblages of plants or animals;
- Plant communities typical of natural/semi-natural habitats;
- Habitat diversity; and,

- Connectivity and presence of large populations of animals which are uncommon or threatened in a wider context.

The assessment of conservation importance in this report makes reference to the geographical scale of International, National, Regional, County, Local and Zol only (CIEEM, 2019).

2.4 Limitations

Ecological records obtained during the desk study do not represent a comprehensive list of species potentially found in the area. Records from within the last 10 years only were discussed, with records earlier than this being considered historic and therefore less relevant.

Ecological surveys are limited to factors which affect the presence of plants and animals, such as time of year, migration patterns, weather, and behaviour. With a single site visit, it is possible that certain species may have been overlooked or under-recorded during the assessment, as optimal survey periods vary from species to species. This report therefore cannot be considered to provide a wholly comprehensive account of the ecological features of the scheme area. It should be noted that this report does not constitute an Ecological Impact Assessment. The survey does, however, provide a snapshot of the ecological features present on the day of the survey.

3 Results

3.1 Desk Study

3.1.1 Statutory designated sites for nature conservation

There is one statutory designated site within 2km of the Site. Dalton Bank Local Nature Reserve (LNR) designated for native woodland, which is located approximately 80m southeast of the Site.

It is not likely that this designated site will be directly impacted by the works due to being the east side of the river from the works.

Dalton Bank LNR is of County importance.

Table 3.1: Summary of statutory sites for nature conservation

Site name	Designation	Minimum distance from site	Site description
Dalton Bank	Local Nature Reserve (LNR)	80m	Designated for the mix of conifer plantations, native woodlands and grasslands

Source: MAGIC, 2023.

3.1.2 Non-statutory designated sites for nature conservation

There is one non-statutory designated site within 2km and 114m east of the Site (Sir John Ramsden Canal Lower Wildlife Site LWS).

This LWS is deemed to be of Local importance and are far enough away from the current works to not be directly affected.

Table 3.2: Summary of non-statutory sites for nature conservation

Site name	Designation	Minimum distance from site	Site description
Sir John Ramsden Canal Lower Wildlife Site	Local Wildlife Site	Adjacent to full Site, 114m from works boundary	This site is designated for its species rich standing open water and value for appreciation of nature.

Source: West Yorkshire Ecology Service, 2023.

3.2 Priority Habitat

A review of Natural England's Priority Habitat Inventory (PHI) has identified Habitats of Principal Importance (HPI) within 1km of the Site boundary including five blocks of deciduous woodland. Deciduous woodland is located approximately 24m southeast of the Site boundary. However, no deciduous woodland is located within the works footprint and there will be no land take/removal of this habitat.

A review of Natural England's Ancient Woodland Inventory has returned one area of ancient woodland approximately 92m north-west of the STW.

it is assumed there will be no direct or indirect impact to the woodland and therefore no further recommendations are required.

3.3 Waterbodies

The River Colne flows to east of the Site boundary and the Sir John Ramsden Canal also known as the Huddersfield Canal flows to the west boundary of the Site separating the main

Site from other woodland areas associated with the STW. Each of these waterbodies flow eventually into the River Calder to the north.

The River Colne is of County importance.

3.4 UKHab Survey

The locations of all habitats are shown on the habitat map in Appendix B, with associated Target Notes and photographs in Appendix C. Target Notes are referred to as TN1, TN2 etc. in the following section.

Habitats recorded within the Site are (u1f 81) ruderal/ephemeral plant species on rocky substrate and (u1b) developed land – sealed surface. All other habitats were recorded in the wider works area and are as follows: (g3c) other neutral grassland, (h3h) dense mixed scrub, (u1b5) buildings and (u1b6 852) STW infrastructure.

The biodiversity net gain habitats baseline for the Site can be found in Appendix E.

3.4.1 (u1f 81) Ruderal/ephemeral on rocky substrate

There were several areas of ruderal or ephemeral species growing off the stoney areas of the STW infrastructure. Species included: redshank *Persicaria maculosa*, black medick *Medicago lupulina*, dandelion *Taraxacum sp. agg.*, cranesbill *Geranium pratense*, sticky groundsel *Senecio viscosus*, ragwort *Senecio jacobaea*, common hogweed *Heracleum sphondylium*, creeping buttercup *Ranunculus repens*, broad-leaved plantain *Plantago major*, ribwort plantain *Plantago lanceolata*, prickly lettuce *Lactuca serriola*, hawkweed *Pilosella officinarum*, fat hen *Chenopodium album*, spiny sowthistle *Sonchus asper*, hairy willowherb *Epilobium hirsutum*, tall fescue *Festuca arundinacea*, common nettle *Urtica dioica*, creeping thistle *Cirsium arvense*, bramble *Rubus fruticosus agg.*, elder *Sambucus nigra*, and buddleia *Buddleja davidii*.

3.4.2 (u1b) Developed land – sealed surface

Large areas of the STW consisted of concrete infrastructure including, roads and walkways. The access track consists of existing sealed surface road only.

3.4.3 (g3c) Other neutral grassland

There were small patches of other neutral grassland in the east and south of the works area around the STW infrastructure. The grassland consisted of ribwort plantain, broad-leaved plantain, yarrow *Achillea millefolium*, dandelion, black medick, bird's-foot trefoil *Lotus corniculatus*, white clover *Trifolium repens*, red clover *Trifolium pratense*, creeping buttercup, mullein *Verbascum thapsus*, hogweed, ragwort, ox-eye daisy *Leucanthemum vulgare*, hairy willowherb, sticky groundsel, perennial rye grass *Lolium perenne*, tall fescue, Yorkshire fog *Holcus lanatus*, cock's foot *Dactylus glomerata*, common nettle, creeping thistle, teasel *Dipsacus fullonum*, broad-leaved dock *Rumex obtusifolius*, bramble, buddleia and goat willow *Salix caprea*.

3.4.4 (h3h) Dense mixed scrub

There was an area of dense scrub to the east of the works area alongside the River Colne wall. Species included: bramble, gorse *Ulex europaeus*, elder, dog rose *Rosa canina*, hawthorn *Crataegus monogyna*, goat willow, sycamore saplings, English oak saplings and ash saplings.

3.4.5 (u1b5) Buildings

There were several works buildings across the Site consisting of mainly metal constructed buildings..

3.4.6 (u1b6 852) STW infrastructure

The sewage works contained several open areas of standing water in settlement tanks that were not being used regularly.

3.5 Protected and Notable Plant Species

No notable or protected plant species were recorded during the desk study or survey with 2km of the Site.

3.6 Invasive Non-native Plant Species

3.6.1 Desk Study

There were 102 records of invasive non-native plants species returned within 2km of the Site, including Indian balsam, Japanese knotweed *Reynoutria japonica*, giant hogweed *Heracleum mantegazzianum*, rhododendron *poniticum*, Canadian waterweed *Elodea canadensis* and Nuttall's waterweed *Elodea nuttallii*.

3.6.2 Survey

On the survey there were many mature stands of Indian balsam running along the banks of the River Colne separated by a large wall 10m below the east of the Site.

No INNS species were identified throughout the works area itself but could easily spread to the Site from the river below.

3.7 Protected and Notable Animal Species

3.7.1 Breeding birds

3.7.1.1 Desk Study

Table 3.3 below summarises records of bird returned and their conservation status.

Table 3.3: Summary of bird species records returned and their protection within a 2km radius of the Site

Species	No. of Records	Most Recent Record	Schedule 1 of WCA	NERC Section 41	Bird of Conservation Concern (Eaton et al 2009)			Local BAP
					Red	Amber	Unlisted	
Cuckoo (Cuculus canorus)		2015		Wildlife and Countryside Act 1981, Section 41 of the NERC Act 2006	X			X
House sparrow (Passer domesticus)		2018		Wildlife and Countryside Act 1981, Section 41 of the NERC Act 2006	X			
Lapwing (Vanellus vanellus)		2017		Wildlife and Countryside Act 1981, Section 41 of the	X			X

Species	No. of Records	Most Recent Record	Schedule 1 of WCA	NERC Section 41	Bird of Conservation Concern (Eaton et al 2009)			Local BAP
					Red	Amber	Unlisted	
NERC Act 2006								

Source: West Yorkshire Ecology Service.

3.7.1.2 Survey

On the walkover, 80 black-headed gull *Chroicocephalus ridibundus* (Amber BoCC) were roosting on the water tanks, 30 mallard *Anas platyrhynchos* (Amber BoCC) roosting on the water tanks, five grey wagtail *Motacilla cinerea* (Amber BoCC) feeding on insects around the water tanks, and one kingfisher *Alcedo atthis* (Schedule 1) flying up the river.

The dense scrub in the east of the works area provides good habitat for nesting and foraging bird assemblages.

The sewage works infrastructure including dis-used water tanks provided habitat for a variety of birds to roost, linked to the river next to the Site there is good habitat for nesting and foraging kingfisher.

Breeding birds are of Local value.

3.7.2 Bats

Table 3.4 below summarises records of bats returned and their conservation status.

3.7.2.1 Desk Study

Table 3.4: Historical records of bats recorded within 2 km of the Site

Common name	Scientific name	Location	Year (most recent first)	Comments
Bat sp.	Vespertilionidae	782m south, Jagger Lane, Kirkheaton, West Yorkshire	2020	Roost
Daubenton's	Myotis daubentonii	950m north, Colne Viaduct Underbridge, Colne Bridge, Mirfield	2019	Maternity roost
Noctule	Nyctalus noctula	1.4km northeast, Cooper Bridge Sewage Works Underbridge, Colne Bridge, Mirfield	2019	Hibernation roost
Common pipistrelle	Pipistrellus pipistrellus	1.2km northeast, Stone building Helm Farm	2019	Day roost
Common pipistrelle	Pipistrellus pipistrellus	1.6km northeast, Heaton Lodge cottages, Colne Bridge, Mirfield	2019	Day roost
Common pipistrelle	Pipistrellus pipistrellus	1.2km northeast, Helm Farm, Paul Lane, Colne Bridge, Mirfield	2019	Day roost

Common name	Scientific name	Location	Year (most recent first)	Comments
Common pipistrelle	Pipistrellus pipistrellus	1.9km east, All Saints School, Bradley Road, Huddersfield, HD2 2JT	2017	Roost
Common pipistrelle	Pipistrellus pipistrellus	1.2km south-east, Shop Lane, Huddersfield	2015	Roost
Common pipistrelle	Pipistrellus pipistrellus	1.9km east, All Saints Catholic College Bradley	2013	Roost

Source: West Yorkshire Ecology Service .

There were 64 records of bats within 2km of the Site in the last 10 years. Seven species were recorded including: Daubenton's bat *Myotis daubentonii*, whiskered bat *Myotis mystacinus*, lesser noctule *Nyctalus leisleri*, noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, and brown long-eared bat *Plecotus auritus*.

There were nine different bat roosts recorded, notably in 2019 there was a maternity colony of over 25 Daubenton's bats 950m north of the Site in Colne viaduct underbridge (NGR SE 17858 20407).

3.7.2.2 Survey

The eastern boundary of the works area provided a connected High suitability range of woodland, river, open water dark corridor habitat for commuting and foraging bats along the eastern River Colne section. The central areas of the works area including the STW infrastructure (sewage tanks, hardstanding, buildings) provided Low suitability habitat for bats.

An external assessment of the buildings in the works area was undertaken. The assessments followed the Bat Conservation Trust Guidelines detailed in Appendix A. The buildings were all working metal, flat-roofed buildings with Negligible suitability for roost potential for bats roosts, other buildings around the wider Site should be scoped in at a later stage if any design works change.

Bats are of Local value.

3.7.3 Otter

3.7.3.1 Desk Study

There were two records of otter within 2km of the Site returned from the desk study in 2019, 1.6km southeast under a bridge in Ox-field Beck (NGR SE 17495 17158).

3.7.3.2 Survey

The River Colne adjacent to the eastern boundary of the works area has good potential for holt building, foraging and commuting with steep muddy banks on one side of the river with broken branches. There is a steep wall on the eastern side of the STW with the river five foot below making it difficult for otter to access that part of the Site.

Otter are of Local value.

3.7.4 Water vole

3.7.4.1 Desk Study

There are no records of water vole within 2km of the Site from the last 10 years.

3.7.4.2 Survey

The river adjacent to the Site is fast flowing with steep walled or muddy banks with mature woodland unsuitable for water vole. The Site is also mostly hardstanding with walled sewage tanks unsuitable for water vole.

It is unlikely water vole are present on the works area of the Site.

3.7.5 Badger

3.7.5.1 Desk Study

There are no records of badger within 2km of the Site, from the last 10 years.

3.7.5.2 Survey

The scrub habitat within the works area boundary has potential to support sett-building badger. No evidence of badgers was identified within the Site or works area.

3.7.6 Other mammals

3.7.6.1 Desk Study

There were four records of hedgehog within 2km of the Site in the last ten years, which are also a Local Biodiversity Action Plan (LBAP) species (Kirklees Council, 2023).

3.7.6.2 Survey

The scrub habitat could be used for breeding and foraging. No evidence of hedgehog was identified within the Site.

Hedgehog are of Local importance.

3.7.7 Great crested newt

3.7.7.1 Desk Study

There are 59 records of GCN in the last 10 years within 2km of the Site, with the nearest record 1.75km southeast in a pond at a quarry. No ponds were recorded within 500m of the Site boundary.

3.7.7.2 Survey

As the works area contains a variety of hardstanding, walled sewage tanks with concentrated aerated sewage and a walled river to the east, it is unlikely GCN will use the Site. Therefore, this species is not considered further.

3.7.8 Other amphibians

3.7.8.1 Desk Study

There are two records of common toad *Bufo* within the last ten years, recorded 1.8km southeast in Laneside Quarry, Kirkheaton.

3.7.8.2 Survey

A juvenile common toad was recorded in tall grassland on the northwest corner of the STW, near to the canal. The grassland habitat areas on the Site hold potential for common toad to forage and hibernate.

Common toad are of Local value.

3.7.9 Widespread reptiles

3.7.9.1 Desk Study

There are no records of reptiles within 2km of the Site from the last 10 years.

3.7.9.2 Survey

The scrub and grassland habitats in the works area hold potential to support hibernating, breeding and foraging reptiles. No reptiles were seen during the survey.

The hardstanding and ruderal/ephemeral habitats within the Site are unlikely to support reptiles.

Reptiles are of Local value.

3.7.10 White-clawed crayfish

3.7.10.1 Desk Study

No records of white-clawed crayfish *Austropotamobius pallipes* were returned within 2km.

3.7.10.2 Survey

The River Colne bottom contained a variety of rocky substrates which are ideal for white-clawed crayfish refuges (Peay, 2002). Although the river is separated by a high brick wall about five foot lower than the Site, there is still potential for pollution and silt from the sewage works to enter the river.

White-clawed crayfish are of Local importance.

3.7.11 Fish

3.7.11.1 Desk study

There were four records of brown trout *Salmo trutta* within the last 10 years all recorded in 2015.

3.7.11.2 Survey

The River Colne adjacent to the east of the Site contains fast flowing stone/gravel substrate with insect larvae suitable for feeding, egg laying and larvae feeding.

Brown trout are of Local importance.

4 Interpretation and Recommendations

4.1 Designations

The Sir John Ramsden Canal Local Wildlife Site (LWS) (Huddersfield Canal) is located 114m west of the Site and receives local protection under the Kirklees Council Local Plan (Policy LP31, LP32, 2019) and is part of the River Colne corridor. Dalton Bank Local Nature Reserve (LNR) is located 80m east of the Site.

The works are limited to the STW infrastructure area of the Site itself and will not have any impact on the river and canal system. Therefore, impact to these designated sites is not considered further.

4.2 Habitats

There are no notable habitats present within or immediately adjacent to the Site that potentially represent a constraint on development.

The habitats present within the works area, i.e. buildings, hardstanding, other neutral grassland, dense scrub will not be removed. Within the Site, a section of ruderal/ephemeral plant species will be removed to accommodate the MMC kiosk.

A small area of other neutral grassland on the eastern boundary of the works area will be used as a temporary storage area (NGR SE 17214 19171). When works have been completed this area will be left to grow via natural growth returning it to its former condition.

4.3 Invasive Species

As the invasive species (Indian balsam) have been found on the River Colne adjacent to the east of the Site, a precautionary approach should be taken with invasive species. Toolbox talks should be given to Site staff and any new observations of invasives species should be reported to a suitably qualified ecologist for advice.

It is an offence to plant or otherwise cause to grow in the wild invasive non-native plants listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

4.4 Birds

At present, the works are restricted to poor-quality habitat including the sewage works infrastructure. No vegetation removal is planned under the current scope of works.

However, should vegetation clearance be required, this should take place between October and February, inclusive, outside of the core breeding bird season. Some birds nest outside the core breeding season, and should nests be found, a demarcation zone will be implemented by the ecologist (species specific but typically no less than a five-metre radius from the nest), within which no works can take place until the chicks have fledged (to be confirmed by the ecologist). The demarcation zone is likely to be larger for certain species and particularly for Schedule 1 species. Schedule 1 birds may so require additional compensation such as species-specific nest boxes.

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) (hereafter referred to as the 1981 Act). This makes it an offence to kill, injure or take any wild bird or to take, damage, or destroy a nest (whilst being built or in use) or eggs. Schedule 1 species of the same act are afforded additional legal protection from disturbance 'whilst it is building a nest or is in, on or near a nest containing eggs or young'. This protection from disturbance also extends to dependent young of Schedule 1 species.

4.5 Bats

The survey found the river corridor with woodland to the east of the Site had High suitability for commuting and foraging bats, and the internal areas of the works area (sewage tanks, buildings, hard standing) had Low suitability. With reference to the current proposed scheme the main works are unlikely to have a significant impact on the habitats present and therefore bat activity transect surveys are not considered to be required at this time.

There should be no night-time working where possible. Should night works be required, then a suitably experienced ecologist should be consulted to advise on the use of any lighting for the works in compound areas. Any artificial lighting which may be required for works should be directional towards the works away from the river woodland corridor to avoid disturbance to bats (Bat Conservation Trust, 2018).

All bat species are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitat and Species Regulations 2017 (as amended). In summary, it is an offence to intentionally or deliberately kill, injure, disturb or capture any bats or damage, destroy or obstruct access to any structure used for breeding or resting by them. Seven species are also listed under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006 as species of principal importance for nature conservation (SPI). Common pipistrelle and Daubenton's bat are listed on the Kirklees LBAP.

4.6 Otter

At present, works on the eastern area of the Site are buffered by a five-foot-high brick wall blocking the view of the River Colne, preventing visual disturbance to possible otters 10m below along the river.

Open excavations should either be covered overnight or fitted with a timber ramp at a 45° angle to prevent entrapment of any animals. Site workers could check the excavation prior to works starting the following day.

Any spillages of any harmful chemicals or substances should be cleaned up immediately with a spill kit and prevented from entering the watercourse in line with CIRIA 2001. Any spillages which do enter the watercourse should be reported to the Environment Agency for further advice and action.

Otter are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitat and Species Regulations 2017 (as amended). In summary it is an offence to intentionally or deliberately kill, injure, disturb or capture otters or damage, destroy or obstruct access to any structure used for breeding or resting. Otter are also listed as an SPI on S41 of the NERC Act 2006 and the Kirklees LBAP.

4.7 Water vole

The river and canal systems are not going to be directly affected by the STW infrastructure works. A precautionary approach should be taken to stop any spillages entering the river from the works.

Water vole are fully protected under the Wildlife and Countryside Act 1981 (as amended). In summary it is an offence to intentionally kill, injure or capture a water vole; intentionally or recklessly damage, destroy or obstruct access to any structure which water voles use for shelter or protection; or disturb water vole while they are using such a place. Water voles are also listed on as an SPI on S41 of the NERC Act 2006 and in the LBAP.

4.9 Other mammals

The dense scrub habitat within the works area is considered to offer potential habitat for foraging and sheltering hedgehogs. This habitat is not to be impacted under the current scope of works.

A precautionary approach is recommended, this should include searches of all suitable habitats prior to any removal and, ensuring that during construction any open pits/holes should be covered at night or where this is not possible a wooden plank positioned at a 45° angle (maximum) from the base to the top of the hole so that mammals that get into the pit/hole can escape.

This species receives limited legal protection but is listed under S41 of the NERC Act 2006 and is also a LBAP species.

4.11 Reptiles

There is suitable habitat around the works area including dense scrub and grassland so a precautionary approach should be taken if any new areas of vegetation clearance are required including pre-works checks.

The four 'widespread' species of reptile in the UK are common lizard *Zootoca vivipara*, slow worm *Anguis fragilis*, grass snake *Natrix Helvetica* and adder *Vipera berus*. These species are afforded partial protection under the Wildlife and Countryside Act 1981 (as amended). In summary it is offence to intentionally kill or injure any of these species. All UK reptile species are listed as an SPI on S41 of the NERC Act 2006, four species are listed in the LBAP.

4.12 White-clawed crayfish

The River Colne has suitable habitat for breeding white-clawed crayfish, as works are not going to affect the river and canal networks directly a precautionary approach should be taken to stop any any spillages entering the river from the works.

White-clawed crayfish are afforded partial protection under the Wildlife and Countryside Act 1981 (as amended). In summary, it is an offence to take a white-clawed crayfish; and sell, offer for sale, possess or transport for the purpose of sale (live or dead animal, part or derivative). White-clawed crayfish is also listed on S41 of the NERC Act 2006.

4.13 Fish

The River Colne has habitat for breeding brown trout, as works are not going to affect the river and canal networks directly a precautionary approach should be taken to stop any spillages entering the river from the works.

Brown trout are listed on the LBAP and are listed as an SPI on S41 of the NERC Act 2006.

5 Conclusion

Dalton Bank LNR and John Ramsden Canal LWS were both over 80m from the works areas of the STW and will not be impacted. If the scope of works on Site changes then this will need to be reassessed by an ecologist.

Habitats across the works area include other neutral grassland (g3c), dense mixed scrub (h3h), developed land - sealed surface (u1b), ruderal/ephemeral on rocky substrate (u1f 81), buildings (u1b5), tall herb (g17) and sewage treatment infrastructure (u1b6 852). A small area of other neutral grassland on the east boundary of the Site will be used as a temporary laydown area for storage and be enhanced with a wildflower seed mix after works. The habitats within the Site are developed land – sealed surface (u1b) and ruderal ephemeral plant community (u1f 81) only.

The River Colne and connected canal network adjacent to the east of the Site provided good habitat for otter holts, foraging and resting, a precautionary approach should be taken on Site with excavated areas and lighting. The works will not directly affect the river corridor. Night-time working should be avoided, where possible, to minimise the impacts to foraging and commuting bats within the area. All construction and operational phases of the proposed works should avoid artificially lighting trees, however if this is not possible an ecologist should be consulted for advice. The River Colne and connected canal system provided habitat for breeding white-clawed crayfish and egg laying brown trout. As the River Colne is located adjacent to the east of the Site, a precautionary approach should be taken with any spillages of chemicals and removal of water from the sludge tanks.

Scrub and grassland areas of the wider works area also may provide habitat for hedgehog, so a precautionary approach should be taken before any possible vegetation clearance of dense scrub on the east area of the Site with pre-works checks recommended.

There were no records of GCN and no suitable ponds within 500m of the Site so it is unlikely GCN are present within the works boundary. There is the possibility of common toad use the grassland and scrub habitats of the works area so a precautionary approach should be taken before any possible vegetation clearance with pre-works checks recommended.

The grassland and scrub in the wider works area is suitable for reptiles, so a precautionary approach should be taken before any possible vegetation clearance with pre-works checks.

If the current scope of works changes then an ecologist will need to re-survey the Site and amend the PEA. The current report is valid for 18 months (CIEEM 2017).

6 References

AECOM (2020) Deighton PEA. AECOM.

Amphibian and Reptile Groups of the United Kingdom (2010) 'ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index', *ARG UK*. Available URL: <http://www.arguk.org/download-document/9-arg-advice-note-5-great-crested-newt-habitat-suitability-index>. Last accessed 4 March 2014.

Bat Conservation Trust (2018) Guidance Note 8 Bats and Artificial Lighting. Available URL: <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/> Last accessed 23 August 2023.

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

CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal*, 2nd Edition. Winchester: Chartered Institute of Ecology and Environmental Management. Available URL: [https://www.cieem.net/data/files/Publications/Guidelines for Preliminary Ecological Appraisal Jan2018 1.pdf](https://www.cieem.net/data/files/Publications/Guidelines%20for%20Preliminary%20Ecological%20Appraisal%20Jan2018%201.pdf) Last accessed 23 August 2023.

CIEEM (2019) *Guidelines for Ecological Impact Assessment in the UK and Ireland*, Winchester: Chartered Institute of Ecology and Environmental Management. Available URL: <https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-Sept-2019.pdf> Last accessed 05 November 2019

CIRIA (2001) *Control of water pollution from construction sites: Guidance for consultants and contractors* (C532). CIRIA. Available URL: <http://www.orkneywind.co.uk/advice/SEPA%20Pollution%20Advice/ciria%20c532.pdf>

Dean, M., Strachan, R., Gow, D., Andrews, R. (2016) *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

Eaton, M. A., Brown, A. F., Musgrove, A. J., Hearn, R., Aebischer, N. J., Gibbons, D. W., Evans A. and Gregory, R. D. (2009) 'Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and Isle of Man', *British Birds*, vol. 102, pp. 296-341.

Kirklees Biodiversity Action Plan (2023) Available URL: <https://www.kirklees.gov.uk/beta/delivering-services/pdf/biodiversity-species.pdf> Last accessed 23 August 2023.

Kirklees Local Plan (2019) Kirklees Local Plan Strategy and Policies. Available URL: <https://www.kirklees.gov.uk/beta/planning-policy/pdf/local-plan-strategy-and-policies.pdf> Last accessed 23 August 2023.

National Policy Planning Framework (2019) *Ministry of Housing, Communities and Local Government*, London. Available URL: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF Feb 2019 revised.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf). Last accessed: 04 December 2019

Oldham, R. S., Keeble, J., Swan, M. J. S., and Jeffcote, M. (2000). 'Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*)'. *Herpetological Journal*, vol. 10, pp.143-155.

Peay, S. (2002). Guidance on Habitat for White-clawed Crayfish. English Nature.

Strachan, R., Moorhouse, T. and Gelling, M. (2011) *Water Vole Conservation Handbook: Third Edition*, Alcester: Salmon Consulting Limited.

Appendices

A.	Summary of Assessment Methods	29
B.	UKHab Habitat Survey Map	Error! Bookmark not defined.
C.	Target Notes and Photographs	Error! Bookmark not defined.

A. Summary of Assessment Methods

A.1 Bats

All trees within the Site with the potential to support roosting and foraging bats were assessed using the 'Bat Surveys Good Practice Guidelines' (Collins 2016). Trees and other structures were categorised using the criteria outlined in Table A.1

Table A.1: Structures and trees criteria for roosting bats

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation)</p> <p>A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential</p>	<p>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.</p> <p>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in parkland situation) or a patch of scrub.</p>
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	<p>Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	<p>Continuous, high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p>Site is close to and connected to known roosts.</p>

Source: Collins, 2016

A.2 Great crested newts

All water bodies within the zone of influence were assessed for their suitability to support great crested newts using a Habitat Suitability Index based on Oldham et al, 2000 and ARG UK, 2010. This method categorises 10 variables known to influence the occurrence of great crested newts. An index score of these variables is then calculated in order to assess their likely presence. It should be noted that this method should be regarded as indicative and any

recommendations for further surveys are given following precautionary principles unless significant supporting evidence indicates the presence of great crested newts is unlikely.

Table A.2: Habitat Suitability Index categories for the assessment of waterbodies for great crested newts.

HSI score	Pond suitability	Likely occurrence of great crested newts
<0.5	Poor	3%
0.5 – 0.59	Below average	20%
0.6 – 0.69	Average	55%
0.7 – 0.79	Good	79%
>0.8	Excellent	93%

Source: Oldham et al, 2000 and ARG UK, 2010.

A.4 Otter

The Site was surveyed for any watercourses present, and any within 30m, that had otter suitability and any potential habitats for holts along with any field signs present which were target noted. Evidence of otter includes:

- Spraints;
- Footprints;
- Anal jelly;
- Paths in vegetation;
- Flattened vegetation;
- Holts and couches; and
- Feeding remains.

A.5 Water Vole

Any watercourses within the Site, and up to 30m, were surveyed for water vole suitability and any field signs following the methodology outlined in the Water Vole Conservation Handbook (Strachan et al. 2011). Evidence of water voles include:

- Burrows;
- Latrines;

- Feeding remains;
- Footprints; and
- Runs in vegetation.
-
- Evidence of American mink *Neovision vision* was also searched for during the survey including any footprints or droppings

B. UKHab Survey Map

C. Photographs

Table C.1: Survey photographs

Target Note (TN)	Details	Photo
1	River Colne and eastern STW wall	
2	Works buildings on Site with sludge tanks	
3	STW infrastructure, ruderal/ephemeral plant species, developed land – sealed surface	

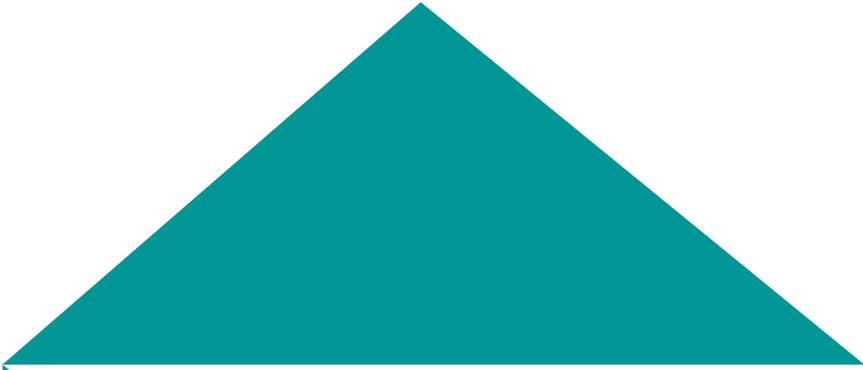
D. Condition Assessments

Habitat Type	Assessment Criteria	Pass (Y/N)	Assessment Grading	Result	
Urban – Sparsely vegetated land - Ruderal/ephemeral (u1f 81)	A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	N	Good – Passes all three criteria, including the requirement for Good condition in criterion 3.	Moderate
	B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	Y	Moderate – Passes 2 of 3 criteria OR passes 3 but does not meet the requirement for Good in criterion 3.	
	C	Invasive non-native plant species (listed on Schedule 9 of WCA ¹) and others which are to the detriment of native wildlife (using professional judgement) ² cover less than 5% of the total vegetated area ³ .	Y	Poor – Passes 0 or 1 of 3 criteria	
<p>Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).</p>					
Developed land – sealed surface (u1c)	No condition assessment required – condition fixed at 'Poor'				

E. Baseline habitats

Ref	Existing area habitats				Distinctiveness		Condition		Strategic significance	
	Broad Habitat	Habitat Type	Irreplaceable habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance
1	Urban	Developed land; sealed surface	No	0.1718	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance
2	Sparsely vegetated land	Ruderal/Ephemeral	No	0.0122	Low	2	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance

Strategic significance multiplier	Required Action to Meet Trading Rules	Ecological baseline							Bespoke compensation agreed for losses of VHDH or irreplaceable habitat	User comments
		Total habitat units	Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost		
1	Compensation Not Required	0.00	0.1718	0	0.00	0.00	0.00	0.00	0.00	Hardstanding access track
1	Same distinctiveness or better habitat required ≥	0.05	0	0	0.00	0.00	0.01	0.05		Ruderal/ephemeral plant community on rocky urban substrate around sewage treatment infrastructure



mottmacbentley.co.uk