



Norfolk Wildlife Services supports the Norfolk Wildlife Trust  
by providing funds for nature conservation



## Ecological Appraisal Report: Dereham WRC, Rushmeadow Road SEW-11628



Norfolk Wildlife Services  
Bewick House  
22 Thorpe Road  
Norwich, NR1 1RY  
Tel: 01603 625540  
office@norfolkwildlifeservices.co.uk  
www.norfolkwildlifeservices.co.uk  
Company Registration No: 3957786

VAT No. 876 3225 06





Norfolk Wildlife Services supports the Norfolk Wildlife Trust  
by providing funds for nature conservation



<b>Client</b>	Anglian Water @one Alliance
<b>Site address</b>	Dereham WRC, Rushmeadow Road, Dereham NR19 2NW. Grid reference: TF 97632 13730
<b>Survey scope</b>	Ecological Impact Assessment (Anglian Water Ecological Appraisal Report, EAR) Biodiversity Net Gain feasibility stage assessment
<b>Survey date(s)</b>	Phase 1: 22/07/2021; Phase 2 reptile surveys; 20/09/2021 – 05/05/2022; Site validation: 26/04/2023, repeat site validation: 10/04/2023
<b>Report reference</b>	2024/011
<b>Principal author(s)</b>	Ben Moore ACIEEM
<b>Report date</b>	11/04/2024
<b>Quality assured by</b>	John Harris MCIEEM
<b>Authorised by</b>	John Harris MCIEEM

#### *Declaration of Compliance*

The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed within this document are our bona fide professional opinions.

The information which is being provided is a true representation of the survey methods used and the results assembled, with respect to the stated dates of survey and assessment. The future validity of this report is conditional on any changes which occur to the assessment site, and in any case will be limited by professionally accepted survey lifespans<sup>1</sup>.

#### *Third Party Disclaimer*

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Norfolk Wildlife Services Ltd on behalf of the client named above. It does not in any way constitute advice to any third party who is able to access it by any means.

<sup>1</sup> <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>



## Table of Contents

Summary.....	4
1. Introduction.....	5
1.1. Description of the project.....	5
1.2. Purpose.....	6
Figure 1: Survey area location.....	7
Figure 2a: Scheme solution (north) (provided by Anglian Water).....	8
Figure 2b: Scheme solution (south) (provided by Anglian Water).....	9
2. Methods.....	10
2.1. Zone of Influence.....	10
2.2. Desktop study.....	10
2.3. Field survey and establishment of baseline ecological conditions.....	10
2.4. Assessment of impact potential / risk.....	11
2.5. Biodiversity Net Gain (BNG).....	12
3. Results.....	13
3.1. Desktop study results.....	13
3.2. Field survey results.....	13
3.3. Limitations.....	14
No significant limitations to the survey.....	14
3.4. Further survey recommendations.....	14
Figure 3: Habitat map.....	15
4. Ecological Impact Risk Assessment.....	16
4.1. Potential impacts.....	16
4.2. Cumulative effects.....	17
4.3. Mitigation measures.....	17
4.4. Residual impact assessment.....	18
5. Biodiversity Metric.....	19
5.1. Biodiversity Metric calculations and trading summary.....	19
5.2. Baseline conditions.....	19
5.3. Proposed habitat measures.....	20
5.4. Summary of BNG measures.....	20
5.5. Applying the mitigation hierarchy.....	21
6. Conclusions.....	22
Figure 4: Constraints plan.....	23
Figure 5: 'Proposed Habitats Plan'.....	24
7. Bibliography.....	25
Appendix 1: Relevant Legislation and Policy Guidance.....	26
Appendix 2: Photographs.....	27

## Summary

This EAR provides an ecological appraisal of the proposed Flow to Full Treatment (FFT) scheme at Dereham WRC, centred on TF 97632 13730 (see Figures 1 to 5).

The Rush Meadows Site of Special Scientific Interest (SSSI) and two County Wildlife Sites (CWS) are close to the WRC. Based on the scale of the works being confined to the WRC, no impacts to these or other designated sites are predicted. However, based on the screening result from the online Magic Map system, consultation with Natural England is required.

Previous reptile surveys were undertaken between 2021 and 2022 to identify the presence/absence of reptiles and given no presence was recorded during seven repeat visits over two seasons, the likelihood of the scheme having an impact on local reptile populations is rated as negligible.

All other potential valued species impacts should be effectively mitigated by the advised best-practice impact avoidance measures. The ecological constraints for the project are shown in Figure 4.

Calculations for Biodiversity Net Gain using the Statutory Biodiversity Metric have been provided based on the construction area provided in Figure 2. The proposed habitat measures will result in a net gain of 118.59% (or 1.60 habitat units). It is proposed to achieve this through the enhancement of existing modified grassland of poor condition to other neutral grassland of moderate condition.

Based on the low complexity of the habitats currently present on the site and the modest difficulty of the on-site habitat changes, it is considered that there is a low risk of the proposal not achieving an overall net gain in biodiversity units.

## 1. Introduction

### 1.1. Description of the project

The proposed scheme has been initiated to comply with the obligation under the Waste Water Treatment Directive (UWWTR) and the Water Industry National Environment Programme (WINEP), to reduce the operation of storm sewage overflows by increasing the capacity that the WRC can treat. This treatable volume is called Flow to Full Treatment (FFT), Anglian Water need to install additional plant and machinery at Dereham-Rushmeadow Road WRC which will increase the FFT by 15 percent, as required by the revised environmental permit.

The scheme will result in a greater volume of flow receiving full treatment and nutrient removal than is presently the case, which has the potential to improve the quality of the River Wensum. The proposed scheme comprises the permanent installation of additional plant and machinery within the operational boundary of Dereham-Rushmeadow Rd WRC (shown in Figure 2):

- Kiosks to house electrical panels
  - LV switchboard Kiosk 5.060m x 3.080m x 3.230m high
  - MCC Kiosk 10.070m x 3.070m x 4.300m high
  - 7.600m x 3.000m x 4.700m high (to highest point) 3.800m high to top of roof
- Generator Kiosk
  - 7.600m x 3.000m x 4.700m high (to highest point) 3.800m high to top of roof
- Temporary Compound
  - The compound will be required for the duration of the works. This will house the welfare cabins for site workers and situated in the southeastern area of the site on an area of hardstanding. An existing bunded concrete area, just inside the existing access gate will be used to temporarily store excavated material before it is removed off site.
  - There are also a number of distribution chambers flush with ground level as shown on the drawings.

## 1.2. Purpose

The purpose of this report is to:

- Describe the ecological baseline of the survey area (as shown in Figure 3);
- Evaluate the habitats within the survey area for their ecological value in a geographic context;
- Identify the requirement for further ecological surveys to fully inform the assessment of effects as a result of the proposal;
- Identify and describe all potentially significant ecological effects as a result of the proposal;
- Outline appropriate avoidance or mitigation measures for significant effects as a result of the proposal and how these could be secured;
- Clearly identify requirements to ensure compliance with nature conservation legislation;
- Calculate baseline pre- and post-development BNG units for the site based on current development proposals;
- Provide an outline BNG strategy with the aim of providing at least a 10% net gain in units through habitat creation/enhancement/succession;
- Set out any requirement for post-development monitoring.

**Figure 1: Survey area location**

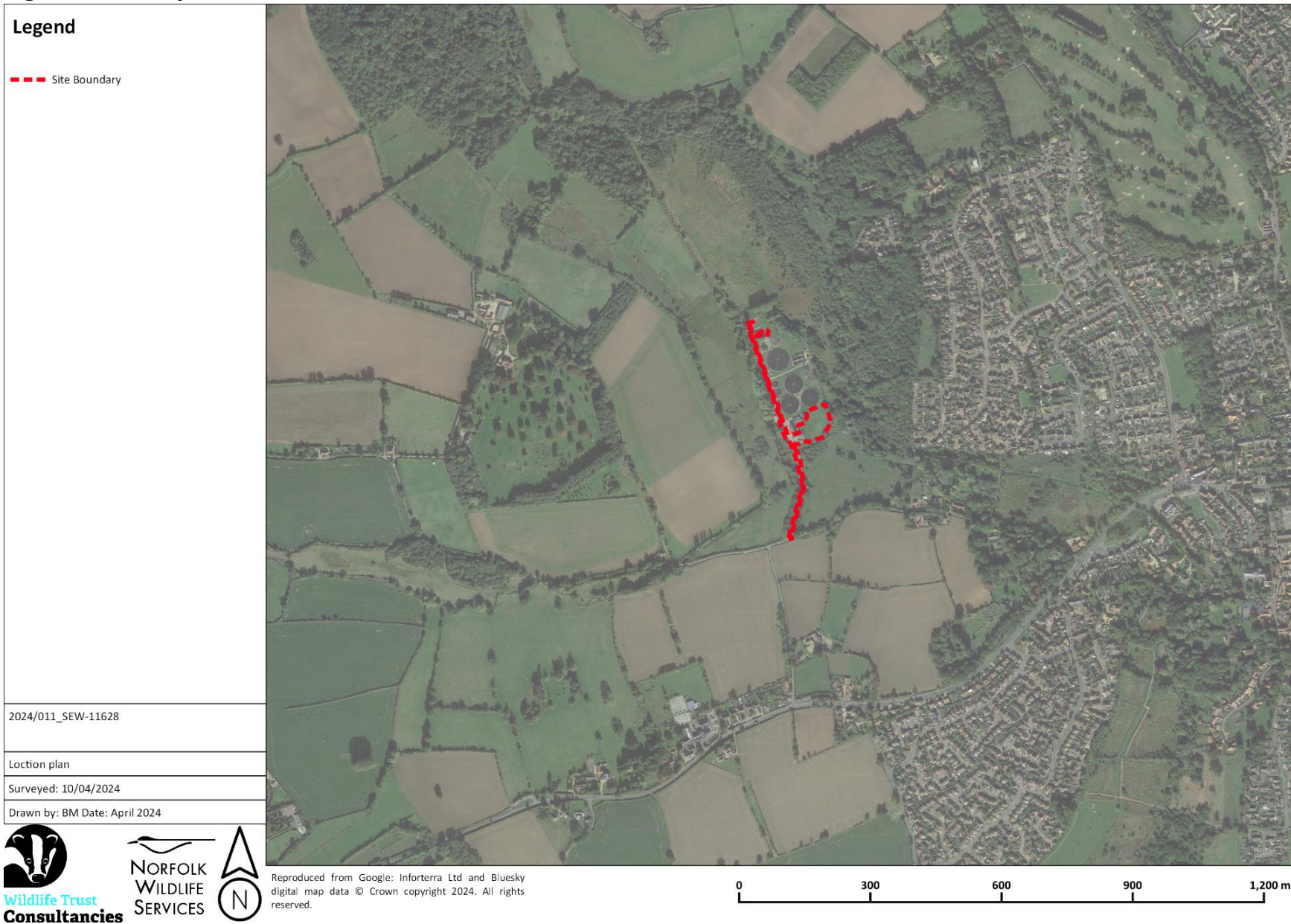


Figure 2a: Scheme solution (north) (provided by Anglian Water)

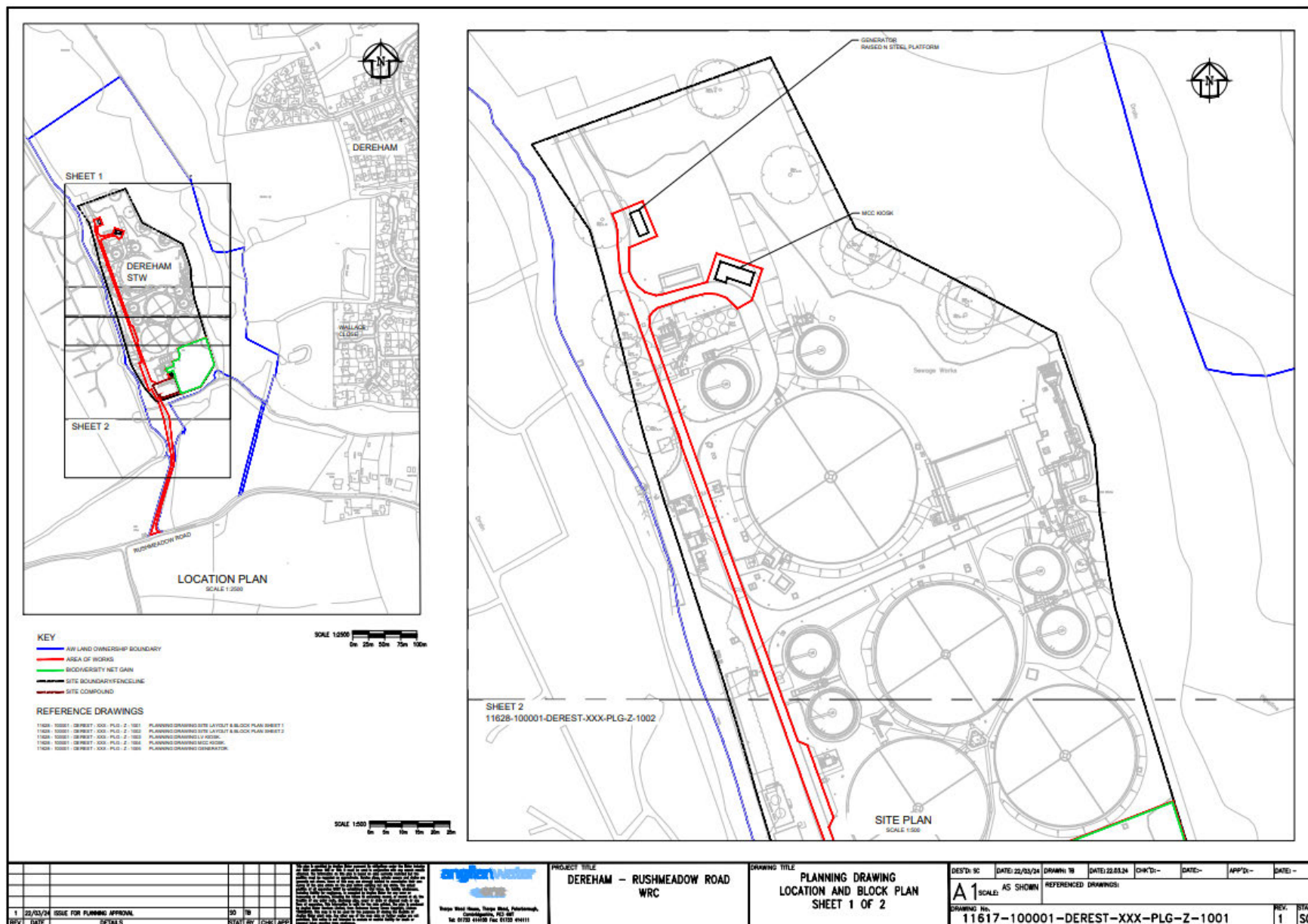
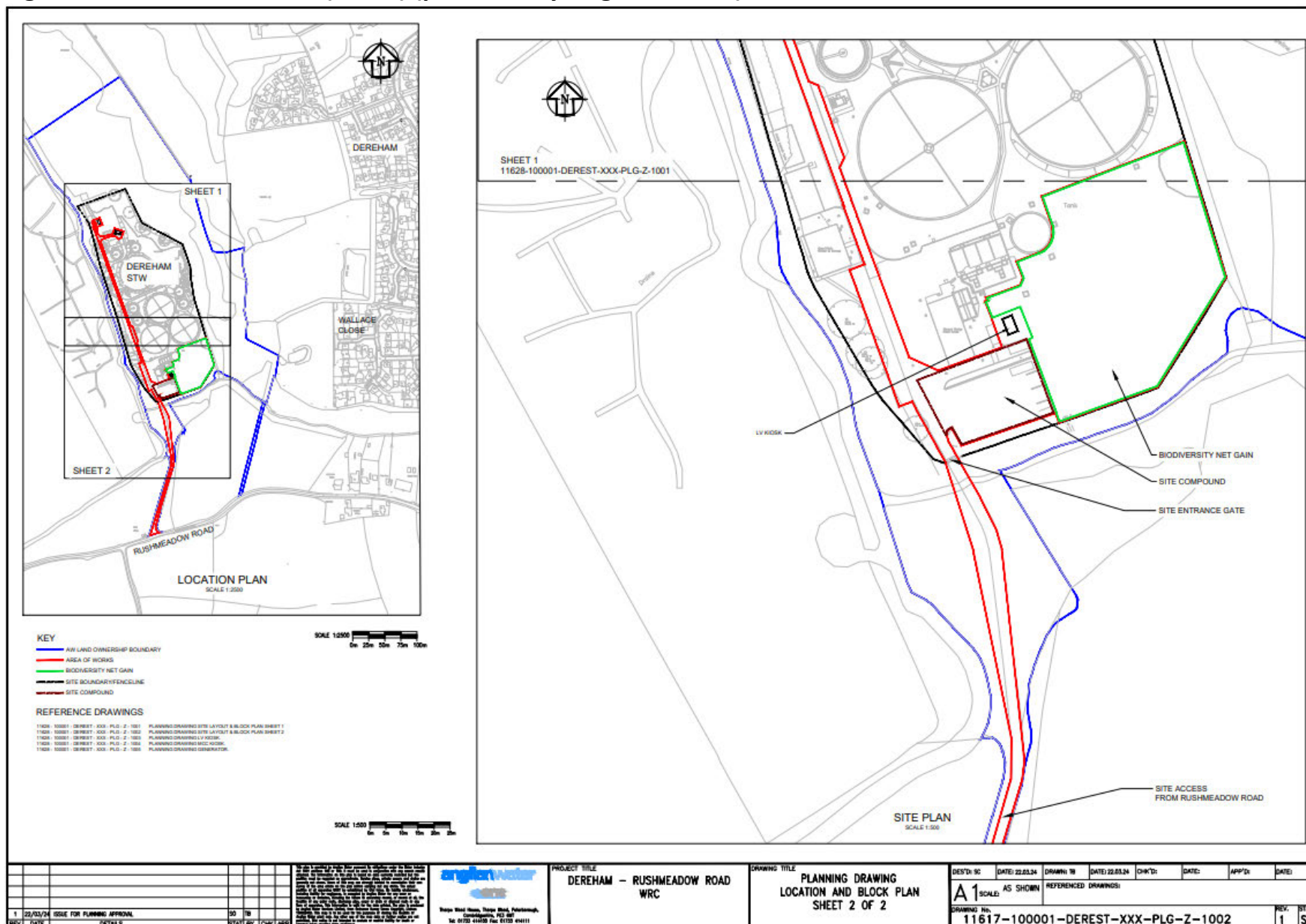




Figure 2b: Scheme solution (south) (provided by Anglian Water)



## 2. Methods

### 2.1. Zone of Influence

The Zone of influence (Zoi) is defined by the CIEEM Guidelines for Ecological Impact Assessment (2018) as: “The areas/resources that may be affected by the biophysical changes caused by activities associated with a project”. The Zoi for this project considers multiple areas for the potential changes to ecological features as a result of the installation of new water mains. The extent of these areas are:

- Within the application works area (Figure 2) and immediately adjacent habitats for direct impacts to valued ecological features (e.g., habitats and protected species).
- Within a 2km radius of the application site boundary for designated nature conservation sites which may be indirectly impacted as a result of the proposed development.
- Within 250m of the development site for potential great crested newt breeding ponds, as based on the small-scale of the proposal.

### 2.2. Desktop study

A detailed desktop study was made of the survey area using the search criteria and sources described in the Table below in May 2022.

Table 1: Desktop study searches

Search	Sources
A 2km search radius for designated sites and features of interest	Natural England Magic Map Application ( <a href="http://www.magic.gov.uk">www.magic.gov.uk</a> ) Anglian Water services, using their data agreement with Norfolk Biodiversity Information Service
A 2km radius for significant records of protected and priority species and European Protected Species mitigation licences	Natural England Magic Map Application ( <a href="http://www.magic.gov.uk">www.magic.gov.uk</a> ) Anglian Water services, using their data agreement with Norfolk Biodiversity Information Service
A 250m radius for extant waterbodies	Natural England Magic Map Application ( <a href="http://www.magic.gov.uk">www.magic.gov.uk</a> )

### 2.3. Field survey and establishment of baseline ecological conditions

The survey area was originally evaluated on 22/07/2021, re-inspected on 26/04/2023 and a repeat site validation visit was carried out on 10/04/2024 by Ben Christie MCIEEM (Natural England Level 2 bat survey Class Licence registration 2019-43514-CLS-CLS and great crested newt survey Class Licence registration 2016-25528-CLS-CLS).

Photographs of ecological features within the survey area are referenced within the Results Section and are shown in Appendix 2.

#### 2.3.1. Habitats

A habitat survey of the survey area was conducted, with habitats separated into broad groups and assigned UK Habitat Classification codes where relevant (The UK Habitat Classification Working Group, 2023).

### 2.3.2. Species

#### Mammals

The proposed development area and its adjacent surrounds was evaluated for its potential value for badger, roosting bats, water voles, otter, and hedgehogs.

#### Birds

An assessment was made of the features likely to support breeding birds and Schedule 1 birds within the survey area.

#### Reptiles

An assessment was made of the features likely to support reptiles within the survey area. A reptile presence/absence survey was carried out using artificial cover objects (ACO) as a sampling methodology, per the recognised methods set out by (Froglife 1999 and 2015, and Gent & Gibson 1998).

ACO were 60 sheets of bitumen-impregnated roofing felt, distributed in areas of suitable habitat throughout the survey area. Seven repeat survey visits were carried out in suitable weather between 20/09/2021 and 05/05/2022 by Ben Christie MCIEEM.

#### Amphibians

A desktop search for ponds within 250m of the survey area was conducted using the Natural England Magic Map Application (Magic Maps) and Google Earth Pro, and an assessment was made of the features likely to support great crested newts within the survey area.

## 2.4. Assessment of impact potential / risk

Potential impacts on ecological features are characterized using the following criteria.

#### *Positive or Negative*

The definition of a positive or negative impact/effect is as per CIEEM (2018):

- *“Positive – a change that improves the quality of the environment e.g. by increasing species diversity, extending habitat, or improving water quality. This may also include halting or slowing an existing decline in the quality of the environment.*
- *Negative – a change which reduces the quality of the environment e.g. destruction of habitat, removal of foraging habitat, habitat fragmentation, pollution.”*

#### *Spatial Extent*

The spatial extent of an impact’s predicted effects is estimated according to the following categories: international and European; national; regional / river basin district; county; local planning authority district; local (≈ parish); site (within the proposed development boundaries).

#### *Magnitude*

- *Major – an impact which is predicted to have a crucial effect (positive or negative) on a designated conservation site, habitat, or species population within a specified spatial extent. Normally the effect will be considered either long-term (potentially reversible) or permanent.*
- *Moderate – an impact which is predicted to have a modest effect (positive or negative) on a designated conservation site, habitat, or species population within a specified spatial extent. Normally the effect will be considered temporary in either the short- or medium-term, and reversible.*

- *Minor* – an impact which is predicted to result in a slight but unimportant effect (positive or negative) on a designated conservation site, habitat, or species population within a specified spatial extent. Normally the effect will be considered to be short-term and reversible.
- *Neutral* – a ‘non-impact,’ with no appreciable effects on a designated conservation site, habitat, or species population.

### *Duration*

The duration of an impact’s predicted effect may be quantified, or else broadly defined as either short-term, medium-term, long-term, or permanent.

## **2.5. Biodiversity Net Gain (BNG)**

The BNG Good Practice Principles (CIEEM, 2019) have been applied as part of the net gain assessment for the proposal site.

### **2.5.1. Calculation of Biodiversity Units and Net Gain**

The Statutory Biodiversity Metric is the approved method for calculating the habitat values pre- and post-development. The Statutory Metric is used for the calculation of Biodiversity Units (BU) and the assessment of BNG in this report.

Biodiversity net gain calculations were undertaken on 11/04/2024 by Ben Moore ACIEEM, based on the Baseline Habitat Plan (Figure 3) and development plan (Figure 2a and 2b).

### **2.5.2. Condition assessment**

Habitat condition was assigned using the ‘Statutory Biodiversity Metric habitat condition assessment’ Excel spreadsheet and following guidance from the ‘The Statutory Biodiversity Metric User Guide’ document (Defra, 2024) which accompanies the Statutory Biodiversity Metric. Assessment criteria were followed for each broad habitat type, to determine the condition of each habitat for all areas surveyed.

### **2.5.3. Measurement of habitats**

Baseline habitat areas have been measured as distinct habitat parcels using QGIS 3.22.4 Geographical Information System with overlaid georeferenced Google Earth Pro imagery and site plan (Figure 2).

### **2.5.4. Limitations**

None.

### 3. Results

#### 3.1. Desktop study results

The Dereham Rush Meadow SSSI boundary is adjacent to the WRC site and close to the works area. This site comprises an area of winter-flooded meadowland and alder carr along the valley of a small tributary of the River Wensum and exhibits a wide range of wet grassland and woodland communities.

The closest County Wildlife Sites are: Dereham Sewerage Works Meadow (1006) and Pump House Woods (1005) and are adjacent to the WRC. The sites are dry grassland with extensive areas of species-rich fen (1006) and woodland (1005).

The following species records were returned within the search area.

Table 2: Desktop search results – species

Species	Location details
██████	████████████████████
Bats (8 species)	141 records within 2km. Mostly records of pipistrelle bats and brown long-eared bat.
Brown Hare	21 records within the 2km buffer.
Otter	42 records within the 2km buffer.
Hedgehog	15 records within the 2km buffer.
Water vole	7 records within the 2km buffer, the closest record is from the adjacent Dereham stream (diverted River Wensum tributary).
Common lizard	4 records within 2km buffer.
Slow-worm	1 record within the 2km buffer.
Great crested newt	3 records within 2km, closest approximately 1km east.
Common Toad	8 records within 2km buffer.

There are no other identified developments with a potential for negative cumulative impacts when considered alongside the proposed works.

#### 3.2. Field survey results

##### 3.2.1. Habitats

The habitats within the proposed works corridor and the off-site pond consist of the following habitat types with descriptive secondary codes (shown visually on Figure 3):

- Developed land, sealed surface (photo 1); coded as u1b, 115. This comprises the access track and areas of hardstanding within the site boundary.
- Modified grassland, mown (photos 2 and 3); coded as g4, 106. Previously, grassland within the site was considered ‘other neutral grassland g3c’ however, the mowing frequency of grassland has increased and there are few species per m<sup>2</sup>.
- The red-line boundary encompasses a small area of aquatic marginal vegetation (f2d) along the western side of the access track.

### **3.2.2. Species**

#### Mammals

No signs of badger were found during the survey, and the likelihood of their presence within the site is deemed to be low, limited to occasional foraging individuals. There is a rabbit warren present along the northern boundary of the site, but no evidence of badger use was found.

There are no features suitable for roosting bats within the redline boundary. However, foraging, and commuting bats are considered likely present.

No field signs of otter or hedgehog were observed. Given the habitats present, the occasional otter or hedgehog transiting through the survey area is a conceivable possibility.

#### Birds

No bird nests are expected within the scheme delivery area.

#### Reptiles

A single grass snake was observed on 28/09/2021, no other reptiles were observed during the seven repeat visits. No suitable refugia for breeding grass snake is present in the works area. A population of reptiles within the site is concluded as highly unlikely, however transient reptiles moving through the site is conceivable.

#### Amphibians

No waterbodies suitable for breeding amphibian were identified within 250m of the works area. The old valley basin within the Rush Meadow SSSI is subject to seasonal (winter) flooding, with no permanent standing water throughout the year, and therefore breeding amphibians are not considered to be a regular occurrence. The potential for amphibians, including great crested newt, within the works area is unlikely but conceivable.

### **3.3. Limitations**

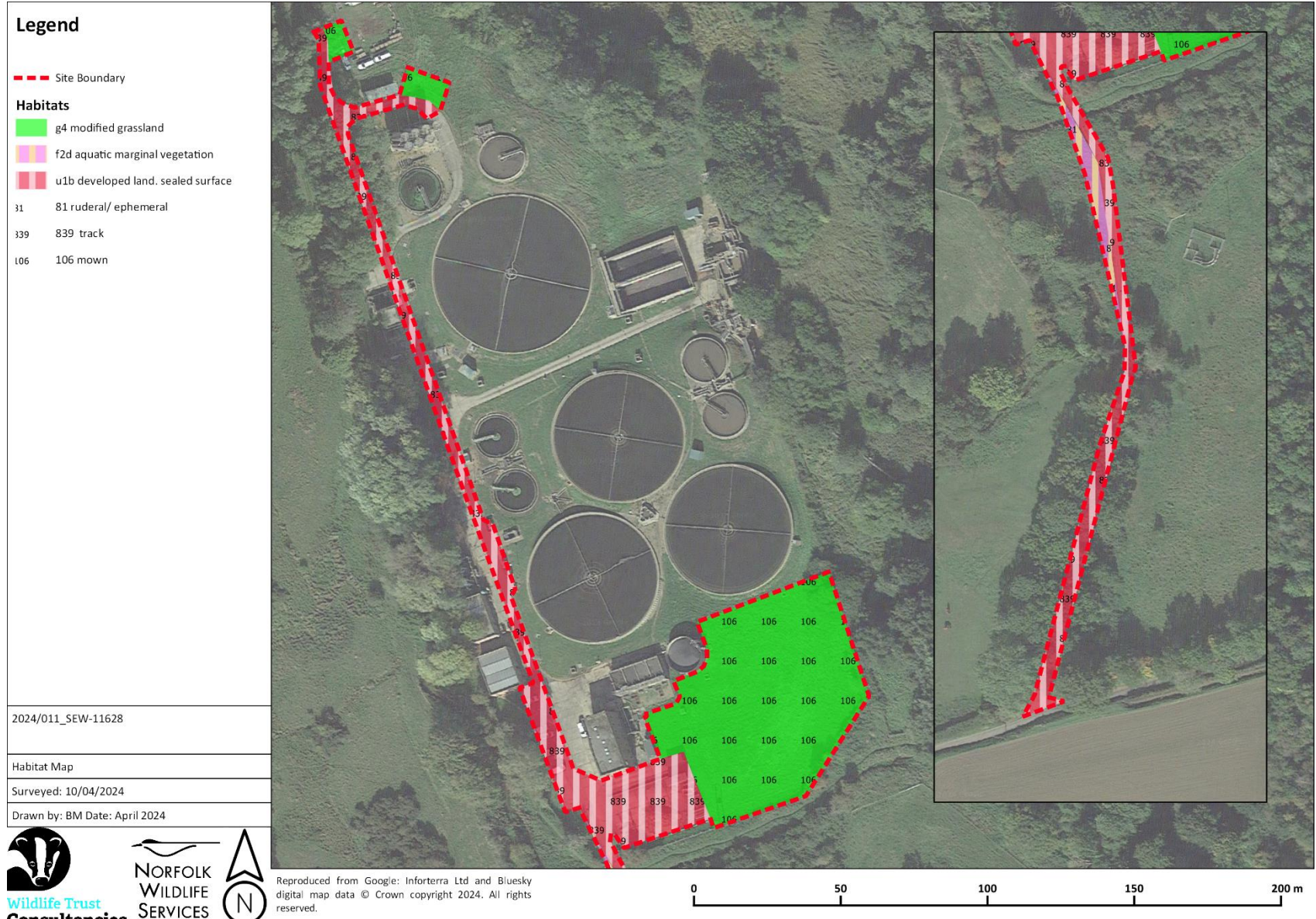
No significant limitations to the survey.

### **3.4. Further survey recommendations**

None

### Figure 3: Habitat map

Inset shows habitats along access track to south of main works area.



## 4. Ecological Impact Risk Assessment

### 4.1. Potential impacts

#### 4.1.1. Designated nature conservation sites

The boundary of Dereham Rush Meadow SSSI is adjacent to the WRC site and therefore it is in very close proximity to the works area. The proposal is to increase the treatment of waste water processed at the site before it is discharged, and therefore there is no expectation of increased nutrient loading. As the works are confined to the WRC site, no likely significant effects to the habitats or breeding birds that use the SSSI are anticipated.

The works are within the nearest SSSI Impact Zone for Rush Meadows SSSI and the qualifier includes all planning applications requiring consultation with Natural England.

The operational area of the WRC site does not fit with the described CWS habitats, and therefore no direct effects to any habitats that could be considered associated with the CWS are predicted.

#### 4.1.2. Habitats

The habitats within the areas proposed for the scheme solution are of low (modified grassland) ecological value on a site scale and associated with regular anthropogenic use. Temporary excavated material will be stored in a bunded hardstanding compound, and therefore no impacts on adjacent habitats are predicted. Given the works are confined to small areas of modified grassland (0.02ha), the proposal is not considered to cause significant additional impacts; i.e. a *minor negative* impact. Biodiversity net gain assessment using the Statutory Biodiversity Metric has been provided in Section 5.

#### 4.1.3. Protected species

##### Mammals

Foraging and commuting bats are likely to be present within the area, particularly along tree lines (e.g. along the western site boundary). Additional external lighting during night-time hours could disrupt normal bat activity, mitigation is advised.

It is possible that the occasional otter or hedgehog could find its way onto the proposed construction area and become trapped in any pits/trenches dug for construction, resulting in a minor negative impact at the local population level. Best practice measures are advised as a precaution to ensure no animals are harmed or killed by construction works.

Once the scheme is complete, it is unlikely that there would be any long-term, in-use impacts on otter or hedgehog. A neutral operational impact is expected.

##### Birds

The potential for impacts to nesting birds is concluded as negligible.

##### Reptiles

Site preparation works, particularly ground works, could result in reptile mortality affecting individual or small number of common reptile species. The impact is predicted as minor negative to local populations. Mitigation (avoidance) methods to reduce the impact risks to a negligible level are advised.

##### Amphibians

No impacts to resting or breeding sites are predicted. Site preparation works, particularly ground works, could result in amphibian mortality affecting a small number of individuals. The impact is



predicted as minor negative to local populations. Mitigation (avoidance) methods to reduce the impact risks to a negligible level are advised.

## **4.2. Cumulative effects**

The proposal site is quite isolated from other developable areas, and itself presents only a risk of temporary negative impacts to certain ecological receptors. No significant cumulative impacts are predicted.

## **4.3. Mitigation measures**

### **4.3.1. Protected species**

#### Mammals, reptiles, and amphibians

- Induct site workers to be aware of signs of animals and to report potential sightings to the ECoW for further investigation.
- To the extent possible, there will be no night working. The potential for any new outdoor lighting at the new treatment site to cause disturbance to nocturnal species is not rated as significant, but nevertheless it is recommended that it be minimised (PIR activated, LED, low lumens, downcast).
- Green waste must be put directly removed daily from the site, to prevent such piles being used as a place of wildlife refuge, with subsequent injury/death possible when cleared.
- All building materials and waste (including soil and loose stone) must be either kept in skips or containers or stored on pallets atop hard standing.
- Care must be taken with open excavations. Any trenches dug for construction should be covered overnight. If overnight coverage is not practicable, then either a shallow-graded sloping side to the excavation must be provided, or an animal egress board put in place to provide animals a means of getting out. All excavations must be inspected for animals before filling.
- Wet/drying concrete where possible be poured early in the day so it is dry by the end of the daytime works. If this is not possible it should be effectively barricaded off to avoid small animals entering it and getting caught.

#### 4.4. Residual impact assessment

Table 3: Residual impact risk assessment

Receptor	Potential impact	Mitigation	Residual impact
Designated sites	Impacts leading to detrimental effect on condition of designated sites considered to be highly unlikely, but consultation with Natural England is required.	None proposed.	Neutral
Mammals, reptiles, and amphibians	Minor negative impact on local population from accidental disturbance/injury/death during construction.	Avoid night working. Barricading wet/drying concrete, fitting any open excavations with escape ramps, and having precautionary methods of green waste and building material storage and movement.	Neutral

## 5. Biodiversity Metric

### 5.1. Biodiversity Metric calculations and trading summary

The proposed habitat measures are detailed in this Section, with the measures shown spatially in the mapped Figure 5: 'Proposed Habitats Plan'. The trading summary for BNG habitat units for the described measures is shown in Table 6 and includes grassland habitats within the redline boundary only.

### 5.2. Baseline conditions

Baseline Biodiversity Net Gain (BNG) values have been provided in this section for the red line boundary.

#### *Habitat classification and condition assessment*

No irreplaceable habitats were identified within the red-line boundary of the proposed scheme. The following Tables detail the habitats within the site and their condition assessments that relate to Figure 1 – Habitat Baseline Plan. Habitats present on site consist of 'grassland: modified grassland (g4)', 'urban: developed land, sealed surface (u1b)' and 'wetland: aquatic marginal vegetation (f2d)'. There is no condition assessment criteria for urban land, as a result these habitats are automatically given the condition score 'Condition Assessment – N/A.'

Table 4: Modified grassland (g4)

Habitat description								
0.41ha of the survey area consists of modified grassland. Two smaller areas (both 0.01ha) are proposed to be developed. A larger area to the south (0.39ha) is proposed to be enhanced for BNG. Grass in both areas is mown with few species per m <sup>2</sup> . The condition assessment for these parcels of grassland is the same and is combined in this table.								
Allocate pass 'P' or fail 'F'.								
Criterion	CA	CB	CC	CD	CE	CF	CG	TOTAL
Result	F	F	P	P	P	P	P	5
Are any criteria non-negotiable? (Y/N) If yes are they passed?	Y – CA fails		Condition (Good/Moderate/Poor):			Poor		

Table 5: Aquatic marginal vegetation (f2d)

Habitat description											
0.02ha of aquatic marginal vegetation is located alongside the western boundary of the access track within the red line boundary.											
Allocate pass 'P' or fail 'F'.											
Criterion	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	TOTAL
Result	P	P	P	P	P	P	N/A	N/A	N/A	N/A	5
Are any criteria non-negotiable? (Y/N) If yes are they passed?	Y – CA passes					Condition (Good/Moderate/Poor)			Good		

### 5.3. Proposed habitat measures

Within the WRC site, it is proposed to enhance 0.39ha of ‘modified grassland’ of poor condition to ‘other neutral grassland’ of moderate condition within 10 years of the development being complete. The habitat will complement the surrounding habitats post-construction, providing a refuge area and valuable biodiversity resource. The difficulty of this enhancement is considered to be low.

The Excel metric spreadsheet has been issued alongside this report and should be referred to for the full BNG calculation assessment.

### 5.4. Summary of BNG measures

The proposed habitat measures will result in a net gain of 118.53% (or 1.60 habitat units).

The net gains in biodiversity units shown to be achievable as part of this development meet the current requirements of both national policy (NPPF) and the Government’s mandating of BNG at a minimum of 10% through the Environment Bill.

Table 6: BNG Trading summary

On-site baseline	Habitat units	<b>1.35</b>
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	<b>2.95</b>
On-site net % change (Including habitat retention, creation & enhancement)	Habitat units	<b>118.53%</b>
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	<b>1.60</b>
Trading rules Satisfied?	<b>Yes</b>	

## 5.5. Applying the mitigation hierarchy

Table 7: Applying the mitigation hierarchy

Stage	Application to proposal site
1 Avoidance	Given the works are required within the operational area of the Dereham WRC, there is no alternative site currently available to Anglian suitable for the proposal. To not use the site would result in non-compliance with local essential services (water recycling), and employment opportunities, and would result in only a very minor avoidance of harm to biodiversity given the current baseline habitats and limited scope for protected species.
2 Minimisation	The minimisation of potential biodiversity impacts is summarised in Section 4 for the project. The potential for impacts to protected species and valued habitats is considered to be low, but Best Practice avoidance measures have been provided for potential species-specific impacts.
3 Compensation	The provision of higher quality habitats than those lost will provide an overall net gain beyond what is required to achieve a biodiversity net gain.

## 6. Conclusions

An ecological impact assessment of a proposed Flow to Full Treatment (FFT) scheme at Dereham WRC makes the following predictions:


- No impacts to the adjacent SSSI and CWS habitats, but consultation with Natural England is advised.
- Minor but insignificant impacts on valued habitats.
- The potential for any new outdoor lighting at the new treatment site to cause disturbance to nocturnal species is not rated as significant, but nevertheless it is recommended that it be minimised (PIR activated, LED, low lumens, downcast).
- A possibility of minor impacts to local otter, hedgehog, reptile, and amphibian populations; to be mitigated by precautionary working methods during the construction phase.
- Calculations for Biodiversity Net Gain using the Statutory Biodiversity Metric have been provided based on the construction area provided in Figures 2a and 2b. The proposed habitat measures will result in a net gain of 118.59% (or 1.60 habitat units). It is proposed to enhance an existing area (0.39ha) of poor condition modified grassland to an area of moderate condition other neutral grassland.

Figure 4: Constraints plan

Legend

--- Site Boundary

Ecology Constraints

 Working area: Follow appropriate mitigation measures as set out Section 4 for works within constraint area

 BNG area: Area proposed for BNG enhancements



2024/011\_SEW-11628

Constraints plan

Surveyed: 10/04/2024

Drawn by: BM Date: April 2024

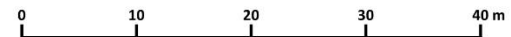


Figure 5: 'Proposed Habitats Plan'

Legend

- - - Site Boundary
- Post construction habitats**
- g3c other neutral grassland
- f2d aquatic marginal vegetation
- u1b developed land, sealed surface

2024/011\_SEW-11628

Habitat Map

Surveyed: 10/04/2024

Drawn by: BM Date: April 2024





## 7. Bibliography

- Baker, J., Beebee, T., Buckley, J., Gent, A. & Orchard, D. (2011) Amphibian Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth, UK
- Bat Conservation Trust (1997) Bats and Trees. The Bat Conservation Trust, UK. Available online at: [www.bats.org.uk](http://www.bats.org.uk)
- Berry, R. (1979). Nightjar habitats and breeding in East Anglia. Br. Birds 72: 207-218.
- British Standards Institute (2013). BS 42020: 2013 Biodiversity - Code of practice for planning and development.
- British Trust for Ornithology (2017). Nightjar national breeding surveys in Britain. Occurrence dataset <https://doi.org/10.15468/yjrm3w> accessed via GBIF.org on 2022-06-13.
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2017) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIRIA (2015) The SuDS Manual ([www.ciria.org/memberships/The\\_SuDS\\_Manual\\_c753\\_Chapters.aspx](http://www.ciria.org/memberships/The_SuDS_Manual_c753_Chapters.aspx))
- Collins, J. (2023) Bat surveys for Professional Ecologists: Good Practice Guidelines 4th edition. Bat Conservation Trust, London.
- DEFRA (2024) The Statutory Biodiversity Metric User Guide (February 2024) [https://assets.publishing.service.gov.uk/media/65c60e0514b83c000ca715f3/The\\_Statutory\\_Biodiversity\\_Metric\\_-\\_User\\_Guide\\_.pdf](https://assets.publishing.service.gov.uk/media/65c60e0514b83c000ca715f3/The_Statutory_Biodiversity_Metric_-_User_Guide_.pdf)
- East Suffolk Council (2021a) Habitat Mitigation (RAMS). Available online at: <https://www.eastsuffolk.gov.uk/planning/developer-contributions/rams/>
- East Suffolk Council (2021b) Recreational Disturbance Avoidance and Mitigation Strategy (RAMS) interactive map. Available online at: <https://eastsuffolk.maps.arcgis.com/apps/webappviewer/index.html?id=ec07051688d9460e918d3cc69829f9be>
- English Nature (2001) Great crested newt mitigation guidelines. English Nature, Peterborough, UK.
- Ferguson, J., Fox, H. & Smith, N. (2018) Bats and artificial lighting in the UK. Bats and the Built Environment series, Guidance Note 08/18. Institution of Lighting Professionals and Bat Conservation Trust
- Froglife (2015) Surveying for reptiles: Tips, techniques, and skills to help you survey for reptiles. Version 1.
- Froglife (1999) Froglife Advice Sheet 10: reptile survey. Froglife, London
- Gent, A.H, & Gibson S.D, eds. (1998) Herpetofauna Workers Manual. Peterborough, Joint Nature Conservation Committee.
- Langton, T. E. S, Beckett, C. L. & Foster, J. P. (2001) Great Crested Newt Conservation Handbook. Froglife, Halesworth, Suffolk, UK
- Mitchell-Jones, A.J. & McLeish, A.P. (eds). (2004) Bat Worker's Manual, 3rd edition. Joint Nature Conservation Committee, UK.
- Mitchell-Jones, A.J. (2004) Bat mitigation guidelines. Version: January 2004. English Nature, Peterborough.
- Oldham, R. S., Keeble, J., Swan, M. J. S. & Jeffcote, M. (2000) Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10, 143-155.
- Ruddock M. & Whitfield D.P. (2007) A Review of Disturbance Distances in Selected Bird Species. A report from Natural Research (Projects) Ltd to Scottish Natural Heritage.
- Scottish Badgers (2018) Surveying for Badger: Good Practice Guidelines. Version 1.
- Statutory Instrument (1983) Wildlife and Countryside Act 1981 (as amended). HMSO, UK
- Statutory Instrument (1992) The Protection of Badgers Act (as amended). HMSO, UK.
- Statutory Instrument (2000) Countryside and Rights of Way Act. HMSO, UK
- Statutory Instrument (2017) Conservation of Habitats and Species Regulations 2017. HMSO, UK
- Stone, E.L. (2013). Bats and lighting: Overview of current evidence and mitigation. University of Bristol, UK
- The UK Habitat Classification Working Group (2018) The UK Habitat Classification Habitat Definitions version 2.0 (dated July 2023).

## Appendix 1: Relevant Legislation and Policy Guidance

### Wildlife and Countryside Act 1981

The Wildlife and Countryside Act 1981 (as amended), Section 9, offers protection from intentional or reckless actions upon species listed on Schedule 5 or Schedule 8. Schedule 5 listed species have different degrees of protection depending on whether they are protected by Section 9.1, 9.2, 9.4 or 9.5.

- Section 9.1 - animals protected from killing or injury; includes water vole, grass snake, common lizard, slow-worm, and adder.
- Section 9.4a - animals which are protected from intentional damage or destruction to any structure or place used for shelter or protection; includes water vole.
- Section 9.4b - animals which are protected from intentional disturbance while occupying a structure or place used for shelter or protection; includes all bat species, hazel dormouse, otter, and water vole.
- Section 9.4c - Animals which are protected from their access to any structure or place which they use for shelter or protection being obstructed; includes all bat species, hazel dormouse, otter, water vole, great crested newt, and natterjack toad.

All birds are protected from destruction of their nests (with minor exceptions) under the Wildlife and Countryside Act 1981. A higher level of disturbance protection is extended to Schedule 1 species, such as barn owls, and their active nest sites.

Plants listed under Schedule 9 of the act are invasive and generally need controlling on a development site. It is an offence to “plant or otherwise cause to grow in the wild,” the invasive species listed on this schedule. Disposal of the plants or soil contaminated by them may need to be to a controlled waste site.

### Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019

The Conservation of Habitats and Species Regulations 2017 was the most recent legislation transposing the EU legislation into UK domestic law; this legislation has now become the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019 with only very minor modifications. The statutory protection for European Protected Species and Natura 2000 sites (now referred to as ‘National Site Network’ sites) remains unchanged.

These regulations consolidate the various amendments made to The Conservation (Natural Habitats, &c.) Regulations 1994 in England and Wales. The updated legislation affords very strict protection to Annex IV listed species (e.g. all species of bats, hazel dormouse, otter, great crested newt, and natterjack toad).

Developments that are likely to have a significant impact upon Annex IV listed species (e.g. bats and great crested newts) require a European Protected Species mitigation license from Natural England in order for the development to legally proceed.

### Natural Environment and Rural Communities Act 2006

The Natural Environment and Rural Communities Act 2006 (NERC) came into force on 1 October 2006. Under Section 40 of the Act, all public bodies (including planning authorities) now have a legal duty to consider biodiversity in their work (i.e. a material consideration for planning applications). As such, in order to increase the likely success of any planning application, consideration should be given to enhancing the biodiversity value of the site following redevelopment. Section 41 lists priority (Principal Importance) habitats and species which are to be particularly considered with respect to potential impacts and may include species which are not otherwise protected by UK legislation.

## Appendix 2: Photographs



Photo 1 – Operational area of the WRC



Photo 2 – Modified grassland (mown), location proposed for new assets



Photo 3 – Proposed BNG enhancement area