



Appendix 13-PD-4: Existing Baseline

Table of Contents

Appendix 13-PD-4: Existing Baseline.....	1
1. Introduction.....	1
2. Part 1a: Minworth AWTP.....	1
3. Part 1b.....	11
4. Part 2.....	19
5. Part 3.....	33
6. Part 4a.....	42
7. Part 4b.....	48
8. References.....	56

Tables

Table 1: Ancient Woodland within 2 km of Part 1a.....	1
Table 2: Great Crested Newt Survey Data Part 1a.....	4
Table 3: Ground Level Tree Assessment Results Part 1a.....	7
Table 4: Nighttime Bat Walkover Results Part 1a.....	7
Table 5: Great Crested Newt Survey Data Part 2.....	24
Table 6: Potential Roost Assessment of buildings and structures within Part 2	29
Table 7: Great Crested Newt Survey Data Part 3.....	35

Appendix 13-PD-4: Existing Baseline

1. Introduction

1.1 Purpose of this Appendix

- 1.1.1 This Preliminary Environmental Information Report (PEI Report) appendix describes the existing baseline as assessed during ecological surveys to date and identified during the desk study. This existing baseline is relevant for the assessment of the likely significant effects of the Scheme on terrestrial ecology.
- 1.1.2 This appendix describes the baseline environmental characteristics with specific reference to terrestrial ecology. Detailed information on the designated sites can be found in **Appendix 13-PD-2 Designated Sites** in PEI Report **Volume 4**.

2. Part 1a: Minworth AWTP

2.1 Designated Sites

- 2.1.1 There are zero sites with an international designation for their biodiversity significance within 30 km of the Preliminary Order Limits and 22 sites with a statutory designation for its biodiversity within 10 km of the Site. These Sites and their distance from the Preliminary Order Limits are included within **Appendix 13-PD-2 Designated Sites** in PEI Report **Volume 4**.
- 2.1.2 There are 41 non-statutory designated sites of nature conservation importance and 33 potential sites within 2 km of the Part 1a Preliminary Order Limits, as listed within **Appendix 13-PD-2 Designated Sites** in PEI Report **Volume 4**. Two of the non-statutory designated site are directly within Part 1a Preliminary Order Limits including Minworth Sewage Works Site of Importance for Nature Conservation (SINC) and Coleshill Road Ecosite.

2.2 Ancient Woodland

- 2.2.1 There are four Ancient Woodlands within 2 km of Part 1a Preliminary Order Limits. These are shown below in **Table 1**.

Table 1: Ancient Woodland within 2 km of Part 1a

Designated Site	Distance from Preliminary Order Limits (km)
Parkhall Wood ASNW	0.55

Designated Site	Distance from Preliminary Order Limits (km)
Parkhill ASNW	1.56
Sych Wood ASNW	1.75
Dunton Coppice ASNW	1.96

2.3 Habitats

Habitats of Principal Importance (HPI)

- 2.3.1 The desk study identified one HPI (Ref. 1) and three additional habitat classes¹ as either wholly or partially located within the Part 1a: Minworth AWTP, these were as follows:
- a. Coastal and floodplain grazing marsh;
 - b. Deciduous woodland¹;
 - c. No main habitat but additional habitats present¹; and
 - d. Good quality semi-improved grassland¹.
- 2.3.2 There are three hedgerows present within Part 1a that qualify as HPI as they are composed of more than 80% native species. All three hedgerows are species-poor and were assessed as moderate and good condition under the habitat condition assessment (Ref. 2).
- 2.3.3 Open mosaic habitat on previously developed land meeting all five JNCC classification criteria (Ref. 3) was identified in the south-west of Part 1a.
- 2.3.4 Deciduous woodland identified by the desk study did not meet the JNCC criteria for Lowland mixed deciduous woodland. Woodland present on site was identified as mixed broadleaved woodland.
- 2.3.5 Whilst grasslands on site have moderate levels of diversity, they do not have the indicator species present to be considered priority grassland as per the JNCC criteria. Current conditions e.g., soil pH and soil nutrient content are unlikely to support restoration to a priority habitat.

¹ The Priority Habitat Inventory also includes habitat classes which are not priority habitats, but which hold potential importance for conservation of biodiversity in England. These can indicate a mosaic of habitat which may contain priority habitats, have restoration potential and/or contribute to ecological networks

Other Habitats

- 2.3.6 The following habitats of local importance were identified as present within Part 1a during the ecological surveys:
- Several areas of established plantation woodland of mixed native species composition and scrub understorey in moderate condition;
 - Large areas of poor to good condition self-set willow and mixed scrub;
 - Deschampsia and Arrenatherum neutral grassland in poor and moderate condition are present in the Cudworth Beds; and
 - Two moderate and good condition ponds are present within areas of willow scrub.
- 2.3.7 These listed habitats contribute to the habitat mosaic of the Part 1a, providing good ecological connectivity and opportunities to support wildlife.

2.4 Great Crested Newt

Desk Study

- 2.4.1 Twenty-six recent records² of Great Crested Newt (GCN; *Triturus cristatus*) were returned from within the Study Area³. The closest is located 1.05 km south-east of the Part 1a Preliminary Order Limits.
- 2.4.2 There are five records of granted European Protected Species Mitigation Licence (EPSML) applications in relation to GCN within 2 km of the Preliminary Order Limits as identified on the MAGIC website (Ref. 4). The most recent of which was granted in 2019 for the destruction of a breeding site and resting place, approximately 1.2 km south of the Preliminary Order Limits.

Field Survey

- 2.4.3 Two ponds are directly within the Preliminary order Limits at Part 1a. An additional nine waterbodies have been identified within 250 m of Part 1a Preliminary Order Limits. Seven of these ponds were accessible to conduct Habitat Suitability Index (HSI) assessments (Ref. 7) and to collect GCN environmental DNA (eDNA) (Ref. 8). The results of these surveys are shown in **Table 2** below and waterbodies area shown on **Figure 13-PD-5: Standing Water** in PEI Report **Volume 3**.

² Results within the last ten years (2015-2025)

³ Within 2 kilometres of Preliminary Order Limits

Table 2: Great Crested Newt Survey Data Part 1a

Waterbody Reference (Figure 13-PD-5)	HSI Score	eDNA Result
WB1 (T-RB(P)45)	0.43/Poor	N/A
WB2 (T-RB(P)52)	0.86/Excellent	Negative
WB5 (T-RB(P)65)	0.25/Poor	N/A
WB6 (T-RB(P)67)	0.88/Excellent	Negative
WB7 (T-RB(P)68)	0.26/Poor	N/A
WB8 (T-RB(P)64)	0.77/Good	Negative
WB8A	0.42/Poor	N/A

2.5 Reptiles

Desk study

- 2.5.1 There are four recent records of grass snake *Natrix helvetica* from within the Study Area.

Field survey

- 2.5.2 Seven survey visits were conducted between April and June 2025. 50 felt and 50 corrugated bitumen tin refugia were strategically placed around Part 1a. During these visits no reptiles were found.

2.6 Birds: Breeding and Wintering

Desk Study

- 2.6.1 In total, 90 wild species have been recorded within the Study Area centred on the south-east corner of Minworth WWTW since 2016. This includes resident, summer and winter visitor and vagrant species.
- 2.6.2 At Minworth Severn Treatment Works, barn owls were confirmed breeding annually in a nest box north-west of the landfill between 2021 and 2022 and in a nest box by the outflow channel south of Curdworth Beds in 2023.

Field Survey

- 2.6.3 Monthly breeding bird survey visits were carried out between March and July 2025. A total of 36 common and widespread species were recorded of which 18 are notable because their populations are in national decline. This includes two species which are afforded special statutory protection while nesting: barn owl *Tyto alba* and Cetti's warbler *Cettia cetti*. Six other warbler species were recorded breeding: willow warbler *Phylloscopus trochilus*, chiffchaff *Phylloscopus collybita*, grasshopper warbler *Locustella naevia*,

blackcap *Sylvia atricapilla*, garden warbler *Sylvia borin* and whitethroat *Curruca communis*.

- 2.6.4 The notable species are associated with scattered scrub and neutral grassland at Curdworth Beds and the adjacent broadleaved woodland within the Preliminary Order Limits.

2.7 Badger

Desk Study

- 2.7.1 Two badger *Meles meles* records were identified within the Part 1a Study Area. All badger records are located over 1 km from the Preliminary Order Limits and located beyond at least one significant barrier to movement i.e. main road, canal and river.

Field Survey

- 2.7.2 A badger survey was conducted on 20 March 2025 at Part 1a within the Preliminary Order Limits. The badger survey identified ten setts within the Preliminary Order Limits including one potential main sett, nine outlier setts and a potential day nest⁴.
- 2.7.3 An incidental recording in May 2025, identified a young (<1year) dead badger located outside a well-used two entrance sett at Curdworth beds. The evidence would indicate breeding occurred at this sett and the sett was therefore assessed to be a potential main sett. The young cub appeared malnourished, and it was assumed the cub had died due to a lack of earth worm availability due to the prolonged dry periods in 2025.
- 2.7.4 Several of the outlier setts were located in damaged unused pipes. Recent evidence of both fox and badger presence was recorded at the pipes; indicating cohabitation by these species.
- 2.7.5 Viewed from the boundary of the Part 1a Preliminary Order Limits, a second potential main sett is suspected to be present in an inaccessible area, known as the Tip.
- 2.7.6 Severn Trent have confirmed that badgers using a main sett and other badger setts to the south of the Part 1a Preliminary Order Limits are to be relocated to an artificial badger sett in 2026. All setts are located outside the Part 1a Preliminary Order Limits and the sett exclusion will be carried out under a Natural England badger licence A01.

⁴ A day nest is a temporary resting place which badgers use during the day to groom, sleep and socialise. These are typically circular and are comprised of organic materials such as grass, leaves and twigs.

2.8 Bats

Desk Study

Roosting

- 2.8.1 Five bat roost records were returned within the Study Area, including:
- a. Two roosts for soprano pipistrelle (72 m east and 710 m north-east);
 - b. One pipistrelle sp. roost (1.8 km south-east);
 - c. One Brandt's roost (970 m south-east); and
 - d. One brown long-eared roost (310 m north-east).
- 2.8.2 There is one record of a granted EPSML application in relation to bats within 2 km of the Preliminary Order Limits as identified on the MAGIC website (Ref. 4). This was granted in 2019 for the destruction of a resting place of soprano pipistrelle, approximately 1.2 km south of the Preliminary Order Limits (2019-40272-EPS-MIT).

Activity

- 2.8.3 A total of 224 activity records were returned for at least nine species of bat within the Study Area, including Brandt's bat *Myotis brandtii*, brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, Daubenton's bat, Leisler's bat *Nyctalus leisleri*, *Myotis* sp., Nathusius' pipistrelle *Pipistrellus nathusii*, noctule bat *Nyctalus noctula*, Pipistrelle species *Pipistrellus* sp., soprano pipistrelle *Pipistrellus pygmaeus* and whiskered *Myotis mystacinus*. No records were returned within the Preliminary Order Limits.

Field Survey

- 2.8.4 There are no buildings or structures which will be impacted within Part 1a, therefore no further surveys on buildings and structures have been completed within Part 1a.
- 2.8.5 Mature trees are present within and directly adjacent to the Preliminary Order Limits that offer potential roosting features for bats. A Ground Level Tree Assessment (GLTA) of the following areas was completed on 18 March 2025 by two experienced surveyors in line with good practice guidelines (Ref. 5). The result of this assessment is in **Table 3** below.

Table 3: Ground Level Tree Assessment Results Part 1a

GLTA Reference Number	Result
1	PRF-I
2	FAR
3	PRF-M
4	PRF-I
5	PRF-I
6	PRF-M
7	PRF-I
8	PRF-I
9	FAR
10	PRF-I
11	PRF-I
12	PRF-I
13	PRF-I

2.8.6 Part 1a offers High suitability for foraging and commuting bats, based on the mosaic of hedgerows, ponds, woodland, heath and wetland habitats within and adjacent to the Preliminary Order Limits.

2.8.7 A Nighttime Bat Walkover (NBW) was carried out on 09 July 2025, supported by two automated static detectors which were deployed seasonally. Two further NBW's are scheduled for 2026. The nighttime bat walkovers recorded common pipistrelle, noctule, soprano pipistrelle, *Pipistrellus sp.*, brown long-eared. Multiple bat species were recorded on the automated static detectors, as detailed in **Table 4** below.

Table 4: Nighttime Bat Walkover Results Part 1a

Static	Season	Species Recorded
1	Spring	Noctule, Leisler's, common pipistrelle, soprano pipistrelle, <i>Nyctalus sp.</i>
2	Spring	Brown long-eared, <i>Myotis sp.</i> , noctule, Leisler's, common pipistrelle, soprano pipistrelle, <i>Nyctalus sp.</i> , <i>Pipistrellus sp.</i>

Static	Season	Species Recorded
1	Summer	<i>Myotis sp.</i> , noctule, Leisler's, common pipistrelle, soprano pipistrelle, <i>Nyctalus sp.</i> , <i>Pipistrellus sp.</i>
2	Summer	Brown long-eared, <i>Myotis sp.</i> , noctule, Leisler's, common pipistrelle, soprano pipistrelle, <i>Nyctalus sp.</i>

2.9 Hazel Dormouse

Desk Study

- 2.9.1 No hazel dormouse *Muscardinus avellanarius* records were returned within the Study Area.

Field Survey

- 2.9.2 Part 1a offers limited habitat with suitability for hazel dormouse, predominantly within the boundary woodlands and vegetation; however, these areas are poorly connected to other areas of suitable hazel dormouse habitat in the wider landscape. Taken collectively, hazel dormouse is scoped out of further assessment within Part 1a.

2.10 Otter

Desk Study

- 2.10.1 The desk study returned 20 recent records of otter *Lutra lutra* within 2 km of the Part 1a Preliminary Order Limits. Records are associated with the River Tame and the Birmingham and Fazeley Canal. The closest record is 115 m north of Part 1a.

Field Survey

- 2.10.2 Part 1a contains terrestrial habitat with limited value for otters.
- 2.10.3 There are ponds within Part 1a and a narrow artificial watercourse (conduit) approximately adjacent to the southern boundary and 140 m east of the southern access route. This watercourse is an outfall from the existing water treatment works and is unlikely to offer any suitable refuges or resting sites for otter due to its' construction, which is engineered hard banks. The River Tame, which is suitable habitat for otter, is approximately 165 m south of Part 1a Preliminary Order Limits, while the Birmingham and Fazeley canal is approximately 90 m north. The Birmingham and Fazeley canal are separated from the Site by the busy A4097 Kingsbury Road.

- 2.10.4 Although scrub within the Site could offer opportunities for resting otter and for natal holts, due to its distance from suitable aquatic habitat, otter is considered unlikely to be present within Part 1a.

2.11 Water Vole

Desk Study

- 2.11.1 There is one recent record of water vole *Arvicola amphibius* which is located 280 m north of Part 1a Preliminary Order Limits dated 2022.
- 2.11.2 No records of American mink *Neogale vison* were returned within 2 km of Part 1a.

Field Survey

- 2.11.3 Evidence of mink was recorded during surveys, within the northern part of the Scheme near Coventry. However, it should be noted that no detailed mink monitoring, using rafts for example, has been undertaken at this stage, and evidence of mink is difficult to detect during water vole surveys.
- 2.11.4 Part 1a has limited suitability for water vole. There are ponds and a narrow artificial watercourse (conduit) approximately adjacent to the southern boundary. This watercourse is an outfall from the existing water treatment works and does not offer any habitat for water vole due to its' construction, which is engineered hard banks, and fast flow rate.

2.12 Terrestrial Invertebrates

Desk Study

- 2.12.1 Desk study records included cinnabar moth *Tyria jacobaeae*, small heath butterfly *Coenonympha pamphilus*, garden tiger *Arctia caja*, and hill cuckoo bee *Bombus rupestris* within 2 km of the Part 1a Preliminary Order Limits. The closest record is located 64 m north-east of the Preliminary Order Limits.

Field Survey

- 2.12.2 Open mosaic habitat within the Preliminary Order Limits is suitable to support a range of species of conservation concern. It is assumed there is a wide variety of invertebrates. Further surveys are to be undertaken in 2026.

2.13 Notable Plants

Desk Study

- 2.13.1 Desk study notable flora records of bluebell *Hyacinthoides non-scripta* within Part 1a Study Area.

Field Study

- 2.13.2 Field surveys identified an area of species-rich grassland supporting species including bee orchids *Ophrys apifera* to the south of the water treatment works at Part 1a.

2.14 Other protected and notable species

Desk Study

- 2.14.1 The desk study returned records for common toad *Bufo bufo*, common frog *Rana temporaria* and smooth newt *Lissotriton vulgaris*.

Field Survey

- 2.14.2 Habitats within the Preliminary Order Limits are suitable other protected and notable species including hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus* and common amphibians.

2.15 Invasive Non-native Species

Desk Study

- 2.15.1 The desk study returned records for Canada goose *Branta canadensis* within 2 km of Part 1a. This bird species is now naturalised and endemic to the UK and likely to maintain self-sustaining populations.
- 2.15.2 Desk study records also included records of Himalayan balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum*, Japanese knotweed *Reynoutria japonica*, Japanese rose *Rosa rugosa*, Montbretia *Crocsmia x crocosmiiflora*, New Zealand pygmyweed *Crassula helmsii* and water fern *Azolla filiculoides* within the Study Area.

Field Survey

- 2.15.3 No evidence of invasive non-native fauna was found within Part 1a.
- 2.15.4 Himalayan balsam was found within Part 1a and Japanese knotweed was recorded within 100 m of the open mosaic habitat area within Part 1a; both species are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (Ref. 6).

3. Part 1b

3.1 Designated Sites

- 3.1.1 There is one site with an international designation for their biodiversity significance within 30 km of the Preliminary Order Limits (Preliminary Order Limits) and 32 sites with a statutory designation for its biodiversity within 10 km of the Site. These Sites and their distance from the Preliminary Order Limits are included within **Appendix 13-PD-2 Designated Sites** in the PEI Report **Volume 4**.
- 3.1.2 There are a further 169 non-statutory designated sites of nature conservation importance and 36 potential sites within 2 km of the Part 1b Preliminary Order Limits, as listed within **Appendix 13-PD-2 Designated Sites** in the PEI Report **Volume 4**. Six non-statutory sites are within or directly adjacent to the Part 1b Preliminary Order Limits including the following:
- a. Lea Marston Lake Local Wildlife Site (LWS);
 - b. River Tame LWS;
 - c. Bentley Common LWS;
 - d. Captains Wood LWS;
 - e. Drybrooks Wood LWS; and
 - f. Merevale Lake Woodlands LWS.
- 3.1.3 The criteria for designation for each site are included within **Appendix 13-PD-2 Designated Sites** in the PEI Report **Volume 4**.

3.2 Habitats

Ancient Woodland

- 3.2.1 There are 42 ancient woodlands within 2 km of Part 1b Preliminary Order Limits. These are listed within **Appendix 13-PD-2 Designated Sites** in the PEI Report **Volume 4**.
- 3.2.2 Of the 42 ancient woodlands, nine of these woodlands are within 200 m of the Preliminary Order Limits. These woodlands include the following:
- a. Bentley Park Ancient Replanted Woodland
 - b. Bentley Park Ancient and Semi-natural Woodland
 - c. Drybrooks Ancient Replanted Woodland
 - d. Gallops Hill Ancient and Semi-natural Woodland
 - e. Gallops Hill Ancient Replanted Woodland
 - f. Wheatleys Ancient Replanted Woodland

- g. Holly Thicks Ancient Replanted Woodland
- h. Captains Wood Ancient and Semi-natural Woodland, and
- i. Sych Wood Ancient & Semi-Natural Woodland.

Habitats of Principal Importance (HPI)

3.2.3 The desk study identified six HPI (Ref. 1) and two additional habitat classes¹ as either wholly or partially located within the Study Area (within 500 m) for Part 1b: Minworth to Atherstone pipeline, these were as follows:

- a. Coastal and floodplain grazing marsh;
- b. Lowland fen;
- c. Deciduous woodland;
- d. Reedbeds;
- e. Lowland meadows;
- f. Traditional orchard; and
- g. Good quality semi-improved grassland¹.

3.2.4 No main habitat but additional habitats present¹. Field surveys identified the presence of four HPis, these were as follows:

- a. Lowland mixed deciduous woodland – large areas of moderate and good condition lowland mixed deciduous woodland were identified near and on land associated with Atherstone golf course within the east of Part 1b.
- b. Hedgerows – poor, moderate and good condition hedgerows containing at least 80% native species (including species-rich hedgerows) were identified throughout Part 1b.
- c. Rivers – the River Tame was identified as present within Part 1b.
- d. Wet woodland – a small section of wet woodland in good condition is present within the east of Part 1b.

Other Habitats

3.2.5 The following habitats of local importance have been identified as present within Part 1b during the ecological surveys:

- a. Other lowland acid grassland – areas of moderate condition other lowland acid grassland were identified as present within the east of Part 1b on land associated with Atherstone golf course.
- b. Residential gardens – small areas of private gardens were identified as being present within residential areas of Part 1b.
- c. Neutral grassland – poor, medium and good condition neutral grasslands were identified as present throughout Part 1b. These grasslands are a mixture of dry grassland (g3c5) and periodically inundated grassland (g3c8).

- d. Veteran trees – veteran trees within line of tree habitats were identified as present within Part 1b.
 - e. Blackthorn, bramble, willow and mixed scrub – a variety of poor and moderate condition scrub habitat types were identified throughout Part 1b.
 - f. Ponds – two moderate condition ponds (including a woodland pond) were identified within Part 1b. These are located within an arable field and within a woodland area used as a yoga retreat. The arable pond has ephemeral characteristics.
- 3.2.6 These habitats contribute to the habitat mosaic of the Site, increasing ecological connectivity and providing potential opportunities to support wildlife.

3.3 Great Crested Newt

Desk Study

- 3.3.1 32 recent records of GCN were returned from within the Study Area. The closest located 20 m south-west of the Preliminary Order Limits.
- 3.3.2 There are seven records for granted EPSML applications in relation to GCN within 2 km of the Preliminary Order Limits as identified on the MAGIC website. The most relevant was granted in 2016 for the destruction of a breeding site located 1.1 km south of the Preliminary Order Limits.

Field Survey

- 3.3.3 Seven ponds are within the Part 1b Preliminary Order Limits. A total of 36 ponds have been identified within 250 m of the Preliminary Order Limits.
- 3.3.4 One pond (WB38) near the River Tame has had a HSI assessment (Ref. 7) and eDNA testing (Ref. 8), which returned a good score of 0.76 and a negative eDNA result.
- 3.3.5 Further survey work on the remaining waterbodies and ditches will be conducted in 2026.

3.4 Reptiles

Desk Study

- 3.4.1 There is one recent record of slow-worm *Anguis fragilis*, 13 recent records of grass snake and two records of common lizard *Zootoca vivipara* from within the Study Area. The closest record is of grass snake and is located 4.09 m south-east of the Preliminary Order Limits.
- 3.4.2 Scrub, grassland, bracken, hedgerow, woodland, standing water and river habitats are present within the Study Area and could be utilised by the desk

study species. Areas of habitat identified as containing areas of habitat particularly suitable for reptiles include Atherstone golf course and River Tame corridor

Field Survey

- 3.4.3 Reptile surveys have not yet been conducted for Part 1b. Survey work will continue in 2026 to inform the full assessment of impacts and effects.

3.5 Birds: Breeding and Wintering

Desk Study

- 3.5.1 154 wild species have been recorded within the Study Area centred on the Minworth to Atherstone pipeline route since 2016. This includes resident, summer and winter visitor and vagrant species.

Field Survey

Breeding birds

- 3.5.2 Monthly breeding bird survey visits were carried out between March and July 2025. A total of 50 common and widespread species were recorded of which 22 are notable because their populations are in national decline. All notable breeding species were recorded within the Preliminary Order Limits. This includes Cetti's warbler which is afforded special statutory protection under Schedule 1 of the Wildlife and Countryside Act (1981 as amended) while nesting. The notable species are associated with arable land, native hedgerows, rivers, scrub and broadleaved woodland. The scrub alongside the River Tame supported breeding Cetti's warblers. The large arable fields near Hurley, supported nesting lapwings *Vanellus vanellus* and skylarks *Alauda arvensis*. The breeding bird assemblage is of Local importance.

Wintering birds

- 3.5.3 Monthly non-breeding bird survey visits were carried out between January and March 2025. A total of 33 common and widespread species were recorded of which 14 are notable because their populations are in national decline. The notable species are associated with arable land, native hedgerows, rivers, scrub and broadleaved woodland within the Preliminary Order Limits. On the large arable fields near Hurley, peak monthly counts of 40 lapwings and 9 skylarks were recorded. All other species were recorded in low numbers.

3.6 Badger

Desk Study

- 3.6.1 The desk study confirmed badger setts to be present within 500 m of Part 1b, on land adjacent and outside the Preliminary Order Limits.

Field Survey

- 3.6.2 The woodland, grassland, hedgerows, field margins and interconnecting habitats within and adjacent to Part 1b provide suitable habitat for badger setts and foraging badgers. Badger surveys are ongoing and will continue into 2026. In the absence of survey data it is possible that the Preliminary Order Limits could be utilised by multiple badger clans and contain main badger setts

3.7 Bats

Desk Study

Roosting

- 3.7.1 Hoar Park Wood SSSI is located 1.70 km south of the Part 1b Preliminary Order Limits and is home to a large Daubenton's bat roost.
- 3.7.2 Twenty bat roost desk study records were returned within the Study Area. All roosts, where known, were for individual or small numbers of bats. These results are summarised below:
- a. One Brandt's roost (970 m south-east);
 - b. Two brown long-eared roosts (310 m north-east and 780 m north-west);
 - c. Four common pipistrelle sp. roosts (1.1 km north-west, 1.4 km north-east and two at 1.5 km north-east);
 - d. Two pipistrelle sp. roosts (1.2 km north-west and 1.8 km south-east); and
 - e. Eleven roosts for soprano pipistrelle (the closest located 17 m south-east).
- 3.7.3 There were three records of granted EPSML applications in relation to bats within 2 km of the Preliminary Order Limits was identified on the MAGIC website. The closest EPSML was for the destruction of a common pipistrelle and Natterer's bat roost was granted in 2019 for the damage and destruction of breeding and non-breeding roosts, approximately 130 m north-west of the Preliminary Order Limits in Atherstone (2019-39729-EPS-MIT). An additional EPSML for the destruction of a common pipistrelle and brown long-eared bat roost was granted in 2020 for the destruction of non-breeding roosts, approximately 1.2 km north of the Preliminary Order Limits (2020-50187-

EPS-MIT), while an EPSML for the destruction of a common pipistrelle, soprano pipistrelle, noctule and Daubenton's roost was granted in 2022 for the destruction of breeding and non-breeding roosts, approximately 2 km north of the Preliminary Order Limits (2022-49736-EPS-NSIP1-1).

Activity

- 3.7.4 A total of 100 bat activity records were returned from within the Study Area, including species of brown long-eared bat, common pipistrelle, Nathusius' pipistrelle, noctule and soprano pipistrelle within the Preliminary Order Limits. Brandt's bat, Daubenton's bat, Leisler's bat, Pipistrelle *sp.*, and whiskered.

Field Survey

- 3.7.5 Buildings and bridges are present within Part 1b. At this juncture, no works are anticipated, and they are scoped out of further assessment.
- 3.7.6 Mature trees are present directly adjacent to the Preliminary Order Limits that offer potential roosting features for bats.
- 3.7.7 Part 1b extends through areas of High suitability for foraging and commuting bats; however, the habitats within the Preliminary Order Limits range from Low to Moderate suitability based on the mosaic of pasture and arable fields intersected by hedgerows with occasional woodland pockets and watercourses.
- 3.7.8 Activity surveys, including nighttime bat walkovers and automated static detector deployment, are proposed in 2026.

3.8 Hazel dormouse

Desk Study

- 3.8.1 No recent hazel dormouse records were returned within the Study Area. However, there is one historic record from 1993 located 450 m south-west of Part 1b Preliminary Order Limits.

Field Survey

- 3.8.2 Part 1b offers suitable habitat for hazel dormouse in the form of mature hedgerows and woodland. Hazel dormice are considered rare in Warwickshire; however, there are known reintroduction sites in the County (Ref. 9).

3.9 Otter

- 3.9.1 The desk study returned 32 recent records of otter within 2 km of Part 1b Preliminary order Limits. The closest record is from 2021 recorded otter approximately 200 m north-east of Part 1b.

Field Survey

- 3.9.2 The majority of Part 1b is terrestrial and otters are therefore unlikely to be present, apart from at specific locations close to waterbodies. At one location the pipeline crosses the River Tame (east of Lea Marston), which is likely to provide suitable aquatic habitat for otters and connects larger waterbodies with known otter records at Kingsbury and Ladywalk LWS. The tree lined banks may also provide suitable holt sites and given the rural setting, woodland copse within the Site could also provide natal den sites.
- 3.9.3 There are six minor, unnamed watercourse crossings of either wet ditches or small streams that could also provide suitable habitat for otter. Although less valuable as a source of food, the secluded and rural nature of these watercourses may make them suitable as holt or den sites, particularly where they are close to larger waterbodies, for example Merevale Lake.
- 3.9.4 Where suitable otter habitat exists, surveys will be completed to confirm presence/absence.

3.10 Water Vole

Desk Study

- 3.10.1 There are no recent records of water vole within 2 km Part 1b Preliminary Order Limits. Historic records show 10 records of water vole within the Study Area between 1987 and 2025. The closest historic record of water vole is approximately 100 m south-east of Part 1b, near Atherstone, dating from 2014. No records for American mink were returned within 2 km of Part 1b.
- 3.10.2 No records for American mink were returned within 2 km of Part 1b.

Field Survey

- 3.10.3 The majority of Part 1b is terrestrial and therefore unsuitable habitat for water voles. At one location the pipeline crosses the River Tame (east of Lea Marston), which may provide suitable water vole habitat.
- 3.10.4 There are six minor, unnamed watercourse crossings of either wet ditches or small streams that could also provide suitable habitat for water vole.
- 3.10.5 Where the pipeline crosses watercourses suitable for supporting water vole, surveys will be completed to confirm presence/absence.

3.11 Terrestrial Invertebrates

Desk study

- 3.11.1 The desk study included 207 records of notable terrestrial invertebrates, predominantly butterflies and moths. The records were concentrated at Purley and Mancetter Quarries LWS, Baddesley Common, Lea Maston Lake and Hams Hall Woodlands.

Field Survey

- 3.11.2 Most of the habitat within Part 1b comprises arable land used for grazing livestock, haymaking and crop growing. Given the arable purpose and that pesticide use is often a standard application for arable land, it is unlikely there will be a wide range of invertebrates or species of importance in these areas.
- 3.11.3 The area surrounding the River Tame in, woodland, scrub, amenity grassland and grasslands of a higher distinctiveness in Part 1b offer a variety of habitats suitable to invertebrates. Field surveys have yet to be completed for invertebrates and will be undertaken as part of the Environmental Statement.

3.12 Notable Plants

Desk Study

- 3.12.1 Desk study notable flora records within Part 1b included large-leaved lime *Tilia platyphyllos*, spring restharrow *Ononis spinosa*, black poplar *Populus nigra* and English bluebell.

Field Survey

- 3.12.2 Field surveys indicated that rare and notable plants are likely absent from most habitats within Part 1b except for woodlands, wetlands and higher distinctiveness grasslands. Surveys will continue into 2026.

3.13 Other notable species

Desk Study

- 3.13.1 The desk study returned records for hedgehog *Erinaceus europaeus*, common toad, common frog, polecat *Mustela putorius* and brown hare.

Field Survey

- 3.13.2 Habitats within the Survey Area are suitable for brown hare, hedgehog, polecat, and common toad.

- 3.13.3 Survey work will continue in 2026 to inform the design of appropriate mitigation and the assessment of impacts and effects on other notable species.

3.14 Invasive Non-native Species

Desk Study

- 3.14.1 The desk study returned records for Egyptian goose *Alopochen aegyptiaca*, ruddy shelduck *Tadorna ferruginea*, red-crested pochard *Netta rufina*, Canada goose, Mandarin duck *Aix galericulata*, ring-necked parakeet *Psittacula kramera*, African sacred ibis *Threskiornis aethiopicus*, barnacle goose *Branta leucopsis*, signal crayfish *Pacifastacus leniusculus*, red-eared terrapin *Tachemys scripta*, eastern grey squirrel *Sciurus carolinensis* and black swan *Cygnus atratus* within the Part 1b Study Area.
- 3.14.2 Desk study for plant species records included Himalayan balsam, parrot's feather *Myriophyllum aquaticum*, Japanese rose, Japanese knotweed, giant hogweed and Montbretia within Part 1b Study Area.

Field Survey

- 3.14.3 Field surveys confirmed the presence of Himalayan balsam, giant hogweed and Japanese knotweed within Part 1b which are plant species listed on the Schedule 9 of the WACA. Plants from the cotoneaster family were also identified during the survey, which may represent Schedule 9 invasive species.
- 3.14.4 Russian vine *Fallopia baldschuanica*, Wilson's honeysuckle *Lonicera nitida*, cherry laurel *Prunus laurocerasus*, arrow bamboo *Pseudosasa japonica* and buddleia *Buddleja davidii* were also recorded. Whilst these are not schedule 9 species, they are considered to have the potential to become non-native invasive species due to the rate in which they can colonise an area.

4. Part 2

4.1 Designated Sites

- 4.1.1 The Upper Nene Valley Gravel Pits Special Protection Area (SPA) and Ramsar site, designated for its importance to wintering birds, is located 10.3 km to the north-east of the Indicative Working Area (IWA).
- 4.1.2 There is one internationally designated statutory site within 10 km of Part 2 IWA. Ensor's Pool Special Area of Conservation (SAC), LNR and Site of Special Scientific Interest (SSSI) is located 0.97 km from the Part 2 IWA and is designated for its population of white clawed crayfish *Austropotamobius pallipes*. Further information on this designation is included within **Appendix**

13-PD-2 Designated Sites in the PEI Report **Volume 4**. As commented by the Planning Inspectorate in the Scoping opinion, Ensor's Pool has been scoped out of further assessment due to a lack of impact pathways.

- 4.1.3 There are 61 further statutory sites within 10 km of the Part 2 IWA. These Sites Include SSSI and Local Nature Reserves (LNR). Wyken Slough LNR is within the IWA.
- 4.1.4 There are 126 non-statutory designated sites of nature conservation importance within 2 km of the Part 2 IWA. These include LWS, BNS, and Wildlife Corridors. Of these, 16 LWS and three wildlife corridors are either adjacent to or overlap with the Part 2 IWA:
- a. All Oaks Wood LWS (within);
 - b. Allans Meadow LWS (within);
 - c. Boons Wharf LWS (within);
 - d. Coventry B Supergrid LWS (within);
 - e. Coventry Canal LWS (within);
 - f. Hartshill Lagoons LWS (within);
 - g. Hawkesbury Spinney and Old Tip LWS (within);
 - h. Hillmorton Canal Meadows LWS (within);
 - i. Hillmorton Marsh LWS (adjacent);
 - j. Jeas Quarry LWS (adjacent);
 - k. Judkins Quarry (adjacent);
 - l. Rawn Hill (adjacent);
 - m. River Avon and Tributaries LWS (within - culverted under canal);
 - n. Stoke Bruerne Brickpits LWS and WTR (within);
 - o. Wyken Slough LWS (within);
 - p. Weedon A5 Field (adjacent);
 - q. Grand Union Canal Wetland Wildlife Corridor (within);
 - r. Main Line Rail Wildlife Corridors (adjacent);
 - s. Woburn - Bletchley Rail Wildlife Corridors (adjacent);
 - t. River Ouzel Wetland Wildlife Corridors (adjacent).
- 4.1.5 There are also 276 Warwickshire EcoSites, 128 potential Local Wildlife Sites (pLWS), and seven candidate Local Wildlife Sites (cLWS) within 2 km of the IWA. 48 Ecosites and 22 pLWS are either directly adjacent to or overlapping the Part 2 IWA.
- 4.1.6 These Sites and their distance from the IWA are included within **Appendix 13-PD-2 Designated Sites** in PEI Report **Volume 4**.

4.2 Habitats

Ancient Woodland

- 4.2.1 There are 15 ancient woodlands within the Part 2 Study Area. These Sites and their distances from the Part 2 Study Area are listed within **Appendix 13-PD-2 Designated Sites** in PEI Report **Volume 4**.
- 4.2.2 Of the 15 ancient woodlands, five of these woodlands are within 200 m of the Preliminary Order Limits. These are:
- a. All Oaks Wood Ancient & Semi-Natural Woodland
 - b. Rawn Hill Wood Ancient & Semi-Natural Woodland
 - c. Skewbridge Spinney Ancient Replanted Woodland
 - d. Unnamed (Purley Park) Ancient & Semi-Natural Woodland, and
 - e. Unnamed (Parson's Spinney) Ancient & Semi-Natural Woodland.

Habitats of Principal Importance (HPI)

- 4.2.3 The desk study identified five HPI and three additional habitat classes¹ within the Part 2 Study Area, these were as follows:
- a. Coastal and floodplain grazing marsh (HPI);
 - b. Traditional orchard (HPI);
 - c. Lowland fens (HPI);
 - d. Deciduous woodland¹;
 - e. Good quality semi-improved grassland¹;
 - f. No main habitat but additional habitats present¹;
 - g. Ponds (HPI); and
 - h. Lowland meadows (HPI).
- 4.2.4 Field surveys identified the presence of four HPis, these were as follows:
- a. Lowland mixed deciduous woodland – areas of poor, moderate and good condition lowland mixed deciduous woodland were identified on both sides of the canal within Part 2;
 - b. Native hedgerows – poor, moderate and good condition hedgerows containing at least 80% native species (including species-rich hedgerows) were identified throughout Part 2;
 - c. Rivers – multiple rivers were identified as passing beneath the canal via culverts within Part 2. The River Ouzel was identified as running parallel to the GUC north of Leighton Buzzard; and
 - d. Wet woodland – areas of poor and moderate wet woodland were identified towards the south of Part 2, near Leighton Buzzard.

- 4.2.5 The HPIs coastal and floodplain grazing marsh, traditional orchard, and lowland fens were not identified during field surveys; however, due to data gaps, presence has been assumed to take a precautionary approach to reporting.

Other Habitats

- 4.2.6 The following habitats of county importance were identified as present within Part 2 during field surveys:

- a. Bramble, mixed and willow scrub - a variety of poor, moderate and condition scrub habitat types were identified.
- b. Neutral grassland – poor and moderate condition neutral grasslands. This includes *Arrhenatherum* neutral grassland.
- c. Streams – multiple streams were identified as running beneath the canal via culverts.
- d. Standing waterbodies (non-priority) – multiple poor and moderate condition standing waterbodies (ponds).

- 4.2.7 The following habitats of local importance were identified as present within Part 2 during field surveys:

- a. Allotments – good condition allotment habitats were identified in Nuneaton.
- b. Vegetated gardens – private gardens were identified adjacent to the canal towpath within residential areas.
- c. Unmanaged aquatic marginal vegetation, present within the riparian zones of several watercourses.
- d. Hawthorn scrub.
- e. Canal – Part 2 follows the Grand Union Canal from Atherstone Golf Course to Leighton Buzzard.
- f. Blackthorn scrub.
- g. Modified grassland.
- h. Ruderal /ephemeral land.

- 4.2.8 These habitats contribute to the habitat mosaic of the Site, increasing ecological connectivity and providing potential opportunities to support wildlife.

4.3 Great Crested Newt

Desk Study

- 4.3.1 One-hundred and fifty-four recent records of GCN were returned from within the Study Area for the full length of Part 2. There are two records for

Warwickshire and 4 records in Northamptonshire which are located within the Study Area.

- 4.3.2 At the Proposed Developments in Atherstone, there are two records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 1.1 km south-east of the IWA for the destruction of resting place.
- 4.3.3 At the Proposed Developments south of Atherstone, there are two records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 520 m east of the IWA for the destruction of resting place.
- 4.3.4 At the Proposed Developments near Hartshill, there are two records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 770 m north of the IWA for the destruction of resting place.
- 4.3.5 At the Proposed Developments north of Nuneaton, there are seven records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 58 m east of the IWA for the destruction of a resting place.
- 4.3.6 At the Proposed Development in Nuneaton, there are seven records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 60 m west of the IWA for the destruction of a resting place.
- 4.3.7 At the Proposed Development south of Bedworth, there are 11 records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 133 m south of the IWA for the destruction of a resting place at Wyken Slough.
- 4.3.8 At the Proposed Development near Brinklow, there is one records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 650 m east of the IWA for the destruction of a resting place.
- 4.3.9 At the Proposed Development near Long Lawford, there are three records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 220 m south of the IWA for the destruction of a resting place.
- 4.3.10 At the Proposed Development near Hillmorton, there are 22 records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 60 m north of the IWA for the destruction of a breeding site and resting place.

- 4.3.11 At the Proposed Development near Nether Heyford, there is one records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 1.7 km north-east of the IWA for the destruction of a resting place.
- 4.3.12 At the Proposed Development near Bugbrook, there are three records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 1.6 km north of the IWA for the destruction of a resting place.
- 4.3.13 At the Proposed Development near Great Linford, there are three records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 1.1 km west of the IWA for the destruction of a resting place.
- 4.3.14 At the Proposed Development near Old Woughton, there are nine records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The closest is located 1.2 km south-east of the IWA for affecting a breeding site and the destruction of a resting place.
- 4.3.15 At the Proposed Development south of Milton Keynes, there are six records for granted EPSML applications in relation to GCN within 1.4 km of the IWA as identified on the MAGIC website. The closest is located 1.4 km south-west north of the IWA for the destruction of a breeding site and resting place.
- 4.3.16 There were no EPSML applications identified within 2 km of Proposed Works north of Rugby, at Long Buckby Wharf and in Stoke Bruerne.

Field Survey

- 4.3.17 A total of 192 ponds were present within 250 m of the IWA across Part 2, of which 18 are directly within the IWA.
- 4.3.18 Fourteen ponds within 250 m of Part 2 have had a HSI assessment (Ref. 7) conducted to date. Results of which are in 5 below:

Table 5: Great Crested Newt Survey Data Part 2

Waterbody Reference	HSI Score
WB227	0.49/Poor
WB278	0.31/Poor
NoID	0.71/Good
WB8	0.66/Average
WB7	0.59/Below Average
WB6	0.67/Average
WB6a	0.61/Average

Waterbody Reference	HSI Score
WB5	0.71/Good
WB5a	0.67/Average
WB4	0.69/Average
WB3	0.69/Average
WB2	0.75/Good
WB1	0.70/Good
WB227	0.49/Poor

- 4.3.19 Ditches have not been surveyed within 250 m of the IWA at Part 2 as such these results will not be included within this PEI Report and will be completed prior to the ES. Seasonal survey work will continue in 2026 to confirm the status of GCN, and the survey results will be used to inform the details of any appropriate mitigation and the assessment of impacts and effects on GCN.

4.4 Reptiles

Desk Study

- 4.4.1 There are a total of 131 recent records of reptile within the Study Area. Comprising 49 records of grass snake, 72 records of slow-worm and ten records of common lizard. The closest records are of grass snake and are located within the IWA.

Field Survey

- 4.4.2 Areas of scrub, grassland, hedgerow bases, allotments, ditches, rivers and woodland habitat within the IWA provide opportunities for reptiles including basking, foraging and commuting habitats. During the PEA a possible refugia feature was recorded at Long Buckby Wharf. Where suitable reptile habitat exists, surveys will be completed to confirm presence/absence.

4.5 Birds: Breeding and Wintering

Desk Study

- 4.5.1 In total, 182 wild species have been recorded within the Study Area centred on the canal network since 2016. This includes resident, summer and winter visitor and vagrant species.

Field Survey

Breeding Birds

- 4.5.2 Breeding bird survey visits were carried out at five sites (All Oaks Wood, Hillmorton locks, Long Buckby Wharf, Little Braunston Dismantled Railway and Stoke Bruerne Locks), with suitable habitat between March and July either in 2024 or 2025.
- 4.5.3 At All Oaks Wood a total of 14 common and widespread breeding species were recorded in 2025 of which four are notable because their populations are in national decline. The notable species are associated with the canal and broadleaved woodland within the IWA. All species were recorded in low numbers. The breeding bird assemblage is of Local importance.
- 4.5.4 At Hillmorton locks a total of 25 common and widespread breeding species were recorded in 2024 of which 12 are notable because their populations are in national decline. The notable species are associated with the canal, native hedgerows, scrub, swamp and marshy grassland within the IWA. The swamp supported sedge warblers *Acrocephalus schoenobaenus* and reed buntings *Emberiza schoeniclus*. All species were recorded in low numbers. The breeding bird assemblage is of Local importance.
- 4.5.5 At Long Buckby Wharf a total of 16 common and widespread breeding species were recorded in 2025 of which five are notable because their populations are in national decline. This includes barn owl which is afforded special statutory protection while nesting. The notable species are associated with the canal, native hedgerows and scrub within the IWA. Barn owl was recorded nesting in a shed approximately 40 m from the Order Limits. All species were recorded in low numbers. The breeding bird assemblage is of Local importance.
- 4.5.6 At Little Braunston Dismantled Railway a total of 21 common and widespread breeding species were recorded in 2025 of which seven are notable because their populations are in national decline. The notable species are associated with the canal, native hedgerows and scrub within the IWA. All species were recorded in low numbers. The breeding bird assemblage is of Local importance.
- 4.5.7 At Stoke Bruerne Locks a total of 30 common and widespread breeding species were recorded in 2024 of which 11 are notable because their populations are in national decline. This includes barn owl which is afforded special statutory protection while nesting. The notable species are associated with the canal, native hedgerows, arable land, scrub, marshy grassland and open standing water within the IWA. A barn owl nest box is located approximately 160 m from the IWA, within Stoke Bruerne Brick Pits

LWS. All species were recorded in low numbers. The breeding bird assemblage is of County importance.

- 4.5.8 Further breeding bird surveys are planned at sites to take account of the Proposed Development design changes where there is suitable habitat to support bird species of nature conservation importance and/or afforded special statutory protection.

Wintering Birds

- 4.5.9 Monthly non-breeding bird survey visits were carried out at three sites (Colehurst Lane Long Buckby Wharf and Stoke Bruerne Locks) with suitable habitat between January and March 2025.
- 4.5.10 At Colehurst Lane a total of 13 common and widespread species were recorded of which five are notable because their populations are in national decline. The notable species are associated with the native hedgerows and arable land within the IWA. All species were recorded in low numbers.
- 4.5.11 At Long Buckby Wharf a total of 24 common and widespread species were recorded of which ten are notable because their populations are in national decline. The notable species are associated with the canal, native hedgerows and broadleaved woodland within the IWA. All species were recorded in low numbers.
- 4.5.12 At Stoke Bruerne locks a total of 16 common and widespread species were recorded of which eight are notable because their populations are in national decline. The notable species are associated with the canal, native hedgerows, arable land, scrub, marshy grassland and open standing water within the Order Limits. All species were recorded in low numbers. On the marshy grassland immediately adjacent to the IWA, peak monthly counts of 2 green sandpipers *Tringa ochropus* and a snipe *Gallinago gallinago* were recorded.
- 4.5.13 Further monthly wintering bird survey visits are planned at sites to take account of the Proposed Development design changes where there is suitable habitat to support bird species of nature conservation importance and/or afforded special statutory protection.

4.6 Badger

Desk Study

- 4.6.1 The desk study returned five recent records of badger within 2 km of the Part 2 IWA within Buckinghamshire.

Field Survey

- 4.6.2 The woodland, grassland, hedgerows, field margins and interconnecting habitats within and adjacent to the canal network in Part 2 provide suitable habitat for badger setts and foraging badgers. Badger surveys are ongoing and will continue into 2026. In the absence of survey data it is possible that the Preliminary Order Limits could be utilised by multiple badger clans and contain main badger setts

4.7 Bats

Desk Study

- 4.7.1 There are no statutory sites designated for bats within the Study Area.

Roosting

- 4.7.2 Twenty-eight bat roost records were returned within the Study Area, including:
- a. Seven brown long-eared roosts (the closest located 510 m east, with at least one maternity roost 990 m north-east);
 - b. Fourteen common pipistrelle roosts (the closest located 400 m north-west with a likely maternity roost at 587 m south-west);
 - c. Two Natterer's bat roosts (both likely maternity roosts, located at 605 m north-east and 2 km north-east);
 - d. One noctule roost (located 360 m south-west);
 - e. One Pipistrelle sp. roosts (located 1.6 km south-west);
 - f. Two soprano pipistrelle roosts (located 400 m north-west and 620 m south-west); and
 - g. One unknown bat roosts (located 890 m north-east).
- 4.7.3 There are twenty-eight records of granted EPSML applications for 10 bats within 2 km of the IWA as identified on the MAGIC website, including common pipistrelle, soprano pipistrelle, brown long-eared, noctule, Leisler's bat, serotine, Brandt's bat, Daubenton's bat, Natterer's bat and whiskered.
- 4.7.4 Multiple buildings are present along the canal within Part 2, including tunnels beneath the canal. These may offer roosting potential for bats, including hibernation.
- 4.7.5 The following structures have been assessed to date within Part 2 in line with good practice guidelines (Ref. 5) displayed in **Table 6** below.

Table 6: Potential Roost Assessment of buildings and structures within Part 2

BRP	Structures
High	Bridge 43, Tuckeys Bridge (confirmed roost, hibernation potential)
Moderate	Bridge 5 - Footbridge (hibernation potential)
Low	Vehicle access to Coventry Cruiser Club
Negligible	Whilton Marina Footbridge; Bridge 26, Grimes Bridge
None	-

Activity

- 4.7.6 A total of 221 bat records were returned from within the Study Area, including seven records for brown long-eared bat, common pipistrelle, noctule, serotine and soprano pipistrelle within the IWA. Daubenton's bat, Leisler's bat, Nathusius' pipistrelle, Natterer's bat, and Pipistrelle sp. were also recorded within the Study Area.

Field Survey

- 4.7.7 Bridge 88 (Peartree Bridge) may be modified as part of the Proposed Works and is pending further survey.
- 4.7.8 Mature trees are present within and directly adjacent to the IWA that offer potential roosting features for bats. Surveys are ongoing.
- 4.7.9 Part 2 offers High suitability for foraging and commuting bats along the canal, which provides a key commuting corridor through the landscape and is well connected with areas of woodland, scrub and grassland habitats. No activity surveys are proposed.

4.8 Hazel Dormouse**Desk Study**

- 4.8.1 No hazel dormouse records were returned within the Study Area.

Field Survey

- 4.8.2 Part 2 offers suitable habitat for hazel dormouse adjacent to the canals in the form of mature hedgerows and woodland. The presence of hazel dormouse is limited in this area (Ref. 9); however, there are known reintroductions with connectivity to the Oxford Canal via mature hedgerows and woodland pockets, located approximately 3.2 km west of the IWA. Both Coventry canal and sections of the Grand Union Canal have good connectivity with areas of suitable habitat, despite a lack of records in the Study Area.

- 4.8.3 The likelihood of hazel dormouse being present along the Hillmorton, Shutlanger and Old Wolverton and Denbigh East Industrial Estate is considered low based on a lack of records and connected habitat; as such, hazel dormouse are scoped out of further assessment in these discrete areas of Part 2.

4.9 Otter

Desk Study

- 4.9.1 The desk study returned 62 recent records of otter, most associated with the canal network at Rugby, and between Milton Keynes and Leighton Buzzard. Ten of these records were recorded as within the Part 2 IWA (although depending on the accuracy of the grid reference provided for the record it may not correspond directly to a precise location).

Field Survey

- 4.9.2 Initial surveys for otter were carried out between 2023 and 2024. Signs of otter activity were recorded throughout Part 2.
- 4.9.3 The entirety of the canal within Part 2 is regarded as habitat suitable for supporting otter. There are numerous intersecting watercourses that also provide habitat for otter and opportunities for dispersal into the wider landscape.
- 4.9.4 Otter can become habituated to human disturbance and should therefore not be discounted from urban centres, such as where the canal passes through Nuneaton, Coventry, Rugby, Daventry and Milton Keynes.
- 4.9.5 The roots of mature trees, earth hollows, gaps in rocks and man-made cavities such as disused pipes and culverts in the immediate vicinity of suitable watercourses may be used as otter holts. Otter also use occasional resting sites, sometimes called 'couches', but these are difficult to identify and can occur almost anywhere. Holts are unlikely to be located along the canal towpath due to regular human disturbance. A single otter holt and six possible couches / layups have been identified to date and surveys are ongoing.
- 4.9.6 Woodland and dense scrub up to 150 m from suitable watercourses may be suitable for otter natal dens, which are used for rearing cubs and are particularly sensitive to disturbance.

4.10 Water Vole

Desk Study

- 4.10.1 26 recent desk study records of water vole are present within 2 km of the Part 2 Preliminary Order Limits. These records included records of water vole on the Birmingham and Fazeley Canal and Grand Union Canal.
- 4.10.2 The desk study identified 48 records of water vole in the Desk Study Area (extended to 5 km from the Part 2 boundary for water vole) within the last 10 years, and eight of these records within the Part 2 Preliminary Order Limits. When including historic records dating back to 1980, there are 373 records of water vole within the Study Area.
- 4.10.3 The desk study also identified nine recent records of mink in the Study Area and one of these records directly within the Study Area.

Field Survey

- 4.10.4 The field surveys found that the bankside and riparian habitat quality was typically more suitable for water vole on the bankside which does not support the canal towpath (usually the southern to western banks where the canal flows through the Scheme in a north-west to south-east direction). The canals within Part 2, including those areas where positive evidence of water voles was not identified, have been assessed as 'optimal' (Good habitat) or 'sub-optimal' (Poor or Moderate habitat).
- 4.10.5 Although the habitats present in the southern part of Part 2 (south of Newbold Tunnel on the Oxford Canal) are suitable to support water vole, no evidence of water vole was found, and there are likely factors limiting their ability to colonise. There are large continuous areas of unsuitable habitat, such as tunnels or heavily urbanised environments with no opportunities to forage or create burrows. This includes Newbold Tunnel (120 m in length), where the desk study records and survey results indicate an end to the meta-population's extent on the Coventry and Oxford Canals. The presence of mink, identified from Desk Study records within the southern sections of the Scheme, are also likely to be a limiting factor for water vole colonisation.
- 4.10.6 In total, 211 water vole field signs have been recorded within Part 2. Evidence of water vole was recorded throughout the northern part of the Scheme from Atherstone to Rugby, with results from the surveys closely resembling the desk study data. The extent of these records suggest that they are part of an extensive meta-population along the Coventry and Oxford Canals, and it is possible that nearby watercourses and water bodies to these records also support water vole colonies associated with the same meta-populations.

4.11 Terrestrial Invertebrates

Desk Study

- 4.11.1 The desk study included over 5000 records of terrestrial invertebrates for Part 2, predominantly butterflies and moths. Most records are associated with LWS.

Field Survey

- 4.11.2 The habitat encompassing the canal varies from grassland banks to wet woodland providing a variety of suitable habitats to nationally important invertebrate species.
- 4.11.3 Terrestrial invertebrate surveys are yet to be completed and will be undertaken as part of the baseline to support the ES.

4.12 Notable Plants

Desk Study

- 4.12.1 Desk study notable flora records include bluebell, black poplar, bird's nest orchid *Neottia nidus avis*, and mudwort *Limosella sp.*

Field Survey

- 4.12.2 Field surveys indicated that rare and notable plants are likely absent from most habitats within Part 2 except for woodlands, wetlands and higher distinctiveness grasslands.

4.13 Other Notable Species

Desk Study

- 4.13.1 The desk study returned records for hedgehogs, brown hare and polecat within 2 km of the IWA associated with the road network, canal and residential areas. Other notable records included for common toad, common frog and smooth newt.

Field Survey

- 4.13.2 Habitats within the Survey Area are suitable for other notable species including brown hare, common toad, hedgehog and polecat.

4.14 Invasive Non-Native Species

Desk Study

- 4.14.1 Desk study records were returned for ring-necked parakeet, Canada goose, barnacle goose *Branta leucopsis*, Mandarin duck, Egyptian goose, grey

squirrel, Chinese muntjac, edible frog *Pelophylax esculentus*, glossy ibis *Plegadis falcinellus*, red-crested pochard *Netta rufina*, African sacred ibis *Threskiornis aethiopicus*, and red-eared terrapin.

- 4.14.2 Although some of these species are naturalised and breed within the UK, many, notably canada goose, barnacle goose, sacred ibis and red-eared terrapin, only breed in the UK in limited numbers (or not at all) and their populations are primarily sustained through migration or releases from captivity.
- 4.14.3 The desk study included recent records of american skunk cabbage *Lysichiton americanus*, *Rhododendron ponticum*, parrot's feather *Myriophyllum aquaticum*, giant rhubarb *Gunnera tinctoria*, giant hogweed, Himalayan balsam, Japanese knotweed, Japanese rose *Rosa rugosa*, montbretia, Nuttall's waterweed, orange balsam *Impatiens capensis*. Other than orange balsam, all are listed on relevant legislation. Orange balsam is a non-native species with the potential to become invasive in the UK, although significant negative impacts have not yet been recorded.

Field Survey

- 4.14.4 Field surveys identified INNS listed on relevant legislation, including wall cotoneaster, giant hogweed and Himalayan balsam. Additional non-native species with the capacity to become invasive were also identified including Russian vine, Wilson's honeysuckle, cherry laurel, arrow bamboo and buddleia.

5. Part 3

5.1 Designated Sites

- 5.1.1 The Upper Nene Valley Gravel Pits SPA and Ramsar site, designated for its importance to wintering birds, is located 19.78 km to the east of the IWA.
- 5.1.2 Eight SSSIs (excluding geological SSSIs) are located within 10 km and one Local Nature Reserves (LNRs) are located within 5 km of the Part 3 IWA.
- 5.1.3 A total of twelve non-statutory designated sites of nature conservation importance are located within 2 km of the Part 3 IWA. They comprise eight LWS' and four Warwickshire EcoSites. Daventry Reservoir and Country Park LWS is within the IWA. There are also 35 pLWS' within 2 km of the IWA, seven of which are within the IWA.
- 5.1.4 These Sites and their distance from the Preliminary Order Limits are included within **Appendix 13-PD-2 Designated Sites** in PEI Report **Volume 4**.

5.2 Habitats

Ancient Woodland

- 5.2.1 There are no areas of ancient woodland within the Part 3 IWA

Habitats of Principal Importance (HPI)

- 5.2.2 The desk study identified one HPI and three additional habitat classes¹ within the Part 3 Study Area, these were as follows:

- a. Traditional orchard (HPI);
- b. Deciduous woodland¹;
- c. Good quality semi-improved grassland¹; and
- d. No main habitat but additional habitats present¹.

- 5.2.3 Field surveys identified the presence of five HPIs within the IWA, these were as follows:

- a. Lowland mixed deciduous woodland – areas of lowland mixed deciduous woodland were identified around Daventry Reservoir, with further parcels present alongside the canal and along almost the full length of the disused railway.
- b. Hedgerows – moderate and good condition hedgerows containing at least 80% native species (including species-rich hedgerows) were identified throughout Part 3.
- c. Standing waterbodies – multiple poor and moderate condition standing waterbodies (ponds) were identified within Part 3.
- d. Wet woodland – areas of poor and moderate condition wet woodland were identified bordering the west and south banks of Daventry Reservoir.

- 5.2.4 Daventry Reservoir was identified during surveys to be surrounded by priority woodland, which represents a constraint to construction in this area. A small area of traditional orchard is present to the south-west of Daventry Reservoir and pockets of good quality neutral grassland are present around both reservoirs. A large area of floodplain grazing marsh is also present along the canal side at Leighton Buzzard. A substantial portion of this habitat is located within the IWA.

Other Habitats

- 5.2.5 Non-priority habitats of county value within Part 3 IWA include other rivers and streams, other neutral grassland, aquatic marginal vegetation, mixed woodland, mixed scrub. These habitats are recognised in Local Biodiversity Action Plans.

- 5.2.6 Additionally, the following habitats that are not included in Local Biodiversity Action Plans have been identified at survey. These habitats are important locally but are not considered of more than local importance to conservation - hazel scrub, hawthorn scrub, bramble scrub, introduced scrub, cropland, allotments, and vegetated gardens.

5.3 Great Crested Newt

Desk Study

- 5.3.1 No recent records of GCN were returned from within the Study Area.
- 5.3.2 There are five records for granted EPSML applications in relation to GCN within 2 km of the IWA as identified on the MAGIC website. The most relevant was granted in 2025 for the destruction of a breeding site and resting place within the IWA.

Field Survey

- 5.3.3 During the PEA in 2023, 36 standing waterbodies were identified within 250 m of the Part 3 EIA Scoping Boundary (including the two reservoirs). Of these, 14 waterbodies were assessed for their suitability to support GCN through a habitat suitability index (HSI) assessment (Ref. 7). Water samples were collected and then tested for GCN eDNA (Ref. 7 Ref. 8) at three waterbodies. The presence of GCN was confirmed through the eDNA survey in 2023 at one waterbody, Pond 4, located at Ordnance Survey Grid Reference SP 57767 63355. Full results are included in **Table 7** below.

Table 7: Great Crested Newt Survey Data Part 3.

Waterbody Reference	HSI Score	eDNA Result
Pond 1	0.29/Poor	-
Pond 2	0.52/Below Average	-
Pond 3	0.85/Excellent	Negative
Pond 4	0.92/Excellent	Positive
Pond 5	0.74/Good	Negative
Pond 6	0.6/Average	-
Pond 7	0.57/Below Average	-
Pond 8	0.4/Poor	-
Pond 9	0.41/Poor	-
Pond 10	0.46/Poor	-
Pond 11	0.57/Poor	-
Pond 12	0.58/Below Average	-
Daventry Reservoir	0.31/Poor	-

Waterbody Reference	HSI Score	eDNA Result
Drayton Reservoir	0.33/Poor	-

5.3.4 Survey work will be continued in 2026.

5.3.5 Ditches have not been surveyed within 250 m of the IWA at Part 3 as such these results will not be included within the PEI Report and will be completed prior to the ES submission.

5.4 Reptiles

Desk Study

5.4.1 There are no records of reptiles within 2 km of the IWA.

Field Survey

5.4.2 Suitable habitats for reptiles present within the IWA include areas of scrub, tall forbs, woodland, the bases of hedgerows, ditches, canals and other waterbodies, aquatic marginal vegetation, and unmanaged grassland. These habitats provide a range of opportunities for reptiles including foraging, basking, sheltering and commuting.

5.4.3 Where suitable reptile habitat exists, surveys will be completed to confirm presence/absence. Survey work will continue in 2026 to inform the full assessment of impacts and effects, with the details to be presented within the ES.

5.5 Birds: Breeding and Wintering

Desk Study

5.5.1 In total, 144 wild bird species have been recorded within the Study Area centred on the Daventry Reservoir and Drayton Reservoir since 2016. This includes resident, summer and winter visitor and vagrant species.

Field Survey

Breeding Birds

5.5.2 Monthly breeding bird survey visits were carried out three sites (Daventry Reservoir, Drayton Reservoir and Daventry Dismantled Railway) between March and July 2025. Within Daventry Reservoir and Country Park LWS, a total of 39 common and widespread species were recorded of which 16 are notable because their populations are in national decline. The notable breeding species were recorded within the IWA. This includes water rail *Rallus aquaticus* which is afforded special statutory protection while nesting.

- 5.5.3 The notable species are associated with standing open water, broadleaved woodland, scrub, native hedgerows, arable land, swamps and neutral grassland. The broadleaved woodland surrounding both reservoirs are of importance for their breeding woodland bird assemblages. The swamp at the southern end of Daventry Reservoir supported a range of species including gadwall *Mareca strepera*, water rail *Rallus aquaticus*, great crested grebes *Podiceps cristatus* and reed warbler *Acrocephalus scirpaceus*. Two nests of grey heron *Ardea cinerea* were recorded in the broadleaved woodland surrounding Daventry Reservoir. The large arable fields and adjacent native hedgerows near Daventry Reservoir, supported nesting skylark and yellowhammer. The swamp and scrub within the flood storage basin between Daventry Reservoir and the Grand Union Canal supported breeding sedge warbler and reed bunting. All breeding species were recorded in low numbers.
- 5.5.4 Along the Daventry dismantled railway, a total of 21 common and widespread species were recorded of which seven are notable because their populations are in national decline. The notable species are associated with broadleaved woodland and scrub within the IWA. All breeding species were recorded in low numbers.

Wintering Birds

- 5.5.5 Monthly non-breeding bird survey visits were carried out at Daventry Reservoir and Drayton Reservoir between January and March 2025. Within Daventry Reservoir and Country Park LWS a total of 35 common and widespread species were recorded of which 17 are notable because their populations are in national decline. The notable species are associated with standing open water, broadleaved woodland and scrub within the IWA. Both reservoirs are of importance for their wintering waterbird assemblages.
- 5.5.6 Daventry Reservoir supported a greater species diversity and abundance of waterbird species compared to the smaller Drayton Reservoir. At Daventry Reservoir, waterbird peak monthly counts included 18 mute swans *Cygnus olor*, 10 gadwalls, 16 tufted ducks *Aythya fuligula*, four goldeneyes *Bucephala clangula*, 5 goosanders *Mergus merganser*, 96 coots *Fulica atra* and 96 black-headed gulls *Chroicocephalus ridibundus*. All other species were recorded in low numbers.
- 5.5.7 Further monthly wintering bird survey visits are planned at Daventry Reservoir and Drayton Reservoir to bolster baseline data recorded in early 2025, because these sites are known to be important for wintering waterbirds.

5.6 Badger

Desk Study

- 5.6.1 There are no recent badger records within 2 km of Part 3 IWA.

Field Survey

- 5.6.2 The woodland along the disused railway line at between the reservoirs and Braunston, woodland surrounding the reservoirs, amenity grassland and scrub to the north of the reservoirs, grassland at Braunston, hedgerows, field margins and interconnecting habitats within and adjacent to Part 1b provide suitable habitat for badger setts and foraging badgers. Badger surveys are ongoing and will continue into 2026. In the absence of survey data it is possible that the Preliminary Order Limits could be utilised by multiple badger clans and contain main badger setts

5.7 Bats

Desk Study

- 5.7.1 There are no statutory sites designated for bats within the Study Area.

Roosting

- 5.7.2 No records were returned within the Study Area.
- 5.7.3 There is one record of a granted EPSML application in relation to bats within 2 km of the IWA as identified on the MAGIC website. This was granted in 2019 for the destruction of a resting place of soprano pipistrelle, approximately 1.2 km south of the IWA.
- 5.7.4 There are several structures within Part 3, including Braunston Tunnel, various smaller disused railway tunnels, and a bridge over the disused railway south-west of Drayton Reservoir. No structures will be directly impacted by the Proposed Development at this juncture.
- 5.7.5 Mature trees are present directly adjacent to the IWA that offer potential roosting features for bats. Several bat boxes have been noted on trees west of Daventry Reservoir.

Activity

- 5.7.6 No recent bat activity records were returned within the Study Area. There are historic records of brown long-eared bat, common pipistrelle and noctule.

Field Survey

- 5.7.7 Surveys on mature trees are ongoing for Part 3.

5.7.8 Part 3 offers High suitability for foraging and commuting bats associated with the Drayton and Daventry Reservoirs; however, the IWA excludes the reservoirs, leaving a mix of urban-edge habitats, including pockets of broadleaved woodland, scrub, hedgerows and parkland. Of particular note is the disused railway corridor extending from Braunstone to Daventry Reservoir. Taken collectively, the IWA of Part 3 is considered to offer Moderate suitability.

5.7.9 Activity surveys are proposed in 2026.

5.8 Hazel Dormouse

Desk Study

5.8.1 No recent hazel dormouse records were returned within the Study Area.

Field Survey

5.8.2 Part 3 offers suitable habitat for hazel dormouse in the form of mature hedgerows and woodland, particularly around Drayton and Daventry Reservoirs and along the disused railway. The presence of hazel dormouse is limited in this area; however, they are known to be present in Northamptonshire (Ref. 9). Further survey work will be completed if suitable habitats are impacted by the Proposed Development.

5.9 Otter

Desk Study

5.9.1 The desk study included seven records of otter, although the three closest (including two within the Site boundary) were all for dead animals. These are likely to have been dispersing animals killed crossing roads.

Field Survey

5.9.2 An otter presence / absence survey and habitat assessment was undertaken in August 2023 at the Daventry and Drayton Reservoirs. Water samples collected from Daventry, Drayton and a control site (on the Oxford Canal) were tested for mammal DNA in November 2023. A negative result for otter eDNA was returned at both Daventry and Drayton Reservoirs. Therefore, otter was assessed to be absent from the two reservoirs. However, the desk study records of otter indicate that they may be present at one or both reservoirs sporadically, possibly because of disturbance or pressures at nearby habitats or dispersing young adult otters.

5.9.3 Survey work will continue to inform the assessment of impacts and effects, and the details of appropriate mitigation measures will be presented in the ES.

5.10 Water Vole

Desk Study

- 5.10.1 The desk study included one recent record of water vole within 2 km of the IWA. A total of 56 historic records of water vole were returned within 5 km but all dating from before the year 2000, apart from one in 2001 and one in 2009.

Field Survey

- 5.10.2 Initial surveys for water vole were carried out in August 2023.
- 5.10.3 Both reservoirs were considered suitable habitat for water vole; however, no evidence of water vole was identified during the surveys. The waterbodies that connect with the reservoirs were also assessed to be suitable to support water vole. Detailed surveys of these areas were not carried out at the time.
- 5.10.4 Water samples collected from Daventry, Drayton and a control site (on the Oxford Canal) were tested for water vole eDNA in November 2023. A negative result for water vole eDNA was returned at both Daventry and Drayton Reservoirs. The control eDNA was positive. Therefore, water vole was assessed to be absent from the two reservoirs. The eDNA test also returned negative results for American mink at both reservoirs.

5.11 Terrestrial Invertebrates

Desk Study

- 5.11.1 The desk study included 197 records of notable terrestrial invertebrate species within the study area for Part 3 predominantly butterflies and moths. Most records are associated with the LWSs.

Field Survey

- 5.11.2 Field surveys have not yet been conducted for terrestrial invertebrates. The majority of the IWA of Part 3 comprises woodland, hedgerows, grasslands, arable fields and vegetative banks to the pre-existing Daventry channel. Some of these habitats are high value to a range of invertebrate species and it is therefore assumed, in absence of survey data, that there are a wide variety of terrestrial invertebrate species within Part 3.
- 5.11.3 The habitats listed above have potential to support a variety of species of conservation concern including a range of butterfly, moth and beetle species.

5.12 Notable Plants

Desk Study

- 5.12.1 Desk study notable flora records include English bluebell and mudwort.

Field Survey

- 5.12.2 Field surveys indicated that rare and notable plants are likely absent from most habitats within Part 3 with the exception of woodlands, wetlands and higher distinctiveness grasslands.

5.13 Other Notable Species

Desk Study

- 5.13.1 The desk study returned records for other notable species including common toad, smooth newt, hedgehog, common frog, and brown hare within 2 km of Part 3 IWA.

Field Survey

- 5.13.2 Habitats within the IWA for Part 3 comprise woodland, grasslands, arable fields, hedgerows and waterbodies and associated vegetated banks. The listed habitats above have potential to support a range of other notable species.

5.14 Invasive Non-Native Species

Desk Study

- 5.14.1 The desk study records returned records of barnacle goose, Chinese muntjac, grey squirrel, Canada goose, Egyptian goose, glossy ibis, mandarin duck, red-crested pochard, and ring-necked parakeet within the Study Area
- 5.14.2 The desk study included records of Japanese rose within the Study Area.

Field Survey

- 5.14.3 Field surveys identified *Crangonyx sp.* in both reservoirs and New Zealand Mud Snail *Potamopyrgus antipodarum* in Drayton Reservoir.
- 5.14.4 Field surveys identified Canadian pondweed *Elodea canadensis* growing abundantly across Daventry Reservoir. Parrots feather and Himalayan balsam were identified in/around a hydrologically connected pond adjacent to Daventry Reservoir.

6. Part 4a

6.1 Designated Sites

- 6.1.1 There is one international statutory site, Upper Nene Valley Gravel Pits and SPA, designated for its biodiversity significance within 30 km of the Preliminary Order Limits.
- 6.1.2 12 statutory sites are present within the Part 4a Study Area. Ten SSSIs are located within 10 km, one National Nature Reserve (NNR) and one LNR are located within 5 km of the Part 4a Preliminary Order Limits.
- 6.1.3 There are 24 non-statutory designated sites within 2 km of the Preliminary Order Limits. These comprise ten LWS', nine Biological Notification Sites (BNS'), and five wildlife corridors.
- 6.1.4 These Sites and their distances from the Preliminary Order Limits are included within **Appendix 13-PD-2 Designated Sites** in PEI Report **Volume 4**.

6.2 Habitats

Ancient Woodland

- 6.2.1 No ancient woodlands were identified within Part 4a.

Habitats of Principal Importance (HPI)

- 6.2.2 The desk study identified one HPI and two additional habitat classes¹ within the Part 4a Study Area, these were as follows:
 - a. Lowland meadows;
 - b. Deciduous woodland¹; and
 - c. Good quality semi-improved grassland¹.
- 6.2.3 Field surveys identified the presence of two HPis, these were as follows:
 - a. Hedgerows – hedgerows containing at least 80% native species (including species-rich hedgerows) were identified as present within Part 4a;
 - b. Lowland mixed deciduous woodland – small areas of woodland were identified around the Part 4a boundary; and
 - c. Wet woodland – a small area of wet woodland was identified in the north-west of Part 4a.

Other Habitats

- 6.2.4 A UKHab and habitat condition assessment survey was undertaken in October 2024 at Part 4a. Habitats within Part 4a include arable land, broad-

leaved plantation woodland, neutral grassland and the two species rich hedgerows.

- 6.2.5 The landscape is well connected by the GUC and River Ouzel which run parallel and adjacent to the Part 4a.

6.3 Great Crested Newt

Desk Study

- 6.3.1 There were no desk study records returned for Part 4a which included GCN.
- 6.3.2 There are three records for granted EPSML applications in relation to GCN within 2 km of the Preliminary Order Limits as identified on the MAGIC website. The most relevant was granted in 2011 for the destruction of a resting place 1 km west of the Preliminary Order Limits. Within the MAGIC search there were also 11 records of GCN located 1.5 km west of the Preliminary Order Limits.

Field Survey

- 6.3.3 There are zero ponds located within Part 4a. A total of two ponds are present within 250 m of Part 4a, which have not been surveyed to date.
- 6.3.4 There is one ditch within Part 4a Preliminary Order Limits which was determined suitable for GCN and was tested for GCN eDNA (Ref. 8). This returned a negative result.
- 6.3.5 Seasonal survey work will continue in 2026 to confirm the status of GCN, and the survey results will be used to inform the details of any appropriate mitigation and the assessment of impacts and effects to be presented within the ES.

6.4 Reptiles

Desk Study

- 6.4.1 Desk study research returned seven recent records of reptiles from within the Part 4a Study Area. These records are associated with common reptiles including common lizard, grass snake and slow worm.

Field Survey

- 6.4.2 Reptile surveys have not yet been conducted for Part 1b.
- 6.4.3 The majority of the land in Part 4a is arable and offers limited protective cover and foraging opportunity for common reptiles. However, the habitat along water courses, hedgerows connecting to the woodlands and along the road may have some suitability for common reptiles.

- 6.4.4 Survey work will continue in 2026 to inform the full assessment of impacts and effects, with the details to be presented within the ES.

6.5 Birds: Breeding and Wintering

Desk Study

- 6.5.1 In total, 77 wild species have been recorded within the Study Area centred on the Galley Lane Abstraction, Storage and Treatment Site since 2016. This includes resident, summer and winter visitor and vagrant species. Records returned from within the Study Area include Schedule 1 species such as barn owl and red kite.

Field Survey

- 6.5.2 Monthly breeding and wintering bird survey visits are planned at sites to take account of the scheme design changes where there is suitable habitat to support bird species of nature conservation importance and/or afforded special statutory protection.

6.6 Badger

Desk Study

- 6.6.1 The desk study returned five recent records of badger within the Study Area. There is also a confirmed badger sett present within 500 m of Part 4a, on land adjacent and outside the Preliminary Order Limits.

Field Survey

- 6.6.2 During the field survey there were no badger setts identified within the Preliminary Order Limits at Part 4a. The hedgerows and woodland within and adjacent to Part 4a provide suitable habitat for badger setts and foraging badgers.
- 6.6.3 A dedicated badger survey will take place within Part 4a in early 2026 when vegetation has died back and badger setts are more visible.

6.7 Bats

Desk Study

- 6.7.1 There are no statutory sites designated for bats within the Study Area.
- Roosting
- 6.7.2 No recent bat roost records were returned within the Study Area.
- 6.7.3 There is one record of a granted EPSML application in relation to bats within 2 km of the Preliminary Order Limits as identified on the MAGIC website.

This was granted in 2015 for the destruction of a soprano pipistrelle and brown long-eared bat non-breeding roost, ending in 2020.

6.7.4 There are no structures within Part 4a.

6.7.5 Mature trees are present within and adjacent to the Preliminary Order Limits that offer potential roosting features for bats.

Activity

6.7.6 Thirteen recent bat activity records were returned within the Study Area, including brown long-eared bat, common pipistrelle, Leiser's bat, noctule, Pipistrelle sp., soprano pipistrelle and unknown bat sp.

6.7.7 Part 4a offers Low to Moderate suitability for foraging and commuting bats, particularly at the western end adjacent to the canal, which provides a key commuting corridor through the landscape and is well connected with areas of woodland, scrub and grassland habitats. The east of the site is less suitable overall, with open fields and mature hedgerows; however, there is good connectivity with the wider landscape, including to extensive areas of woodland.

Field Survey

6.7.8 Surveys on mature trees are ongoing.

6.7.9 No activity surveys are proposed as any residual impacts are expected to be negated through sympathetic design or sufficiently mitigated through alternative provision of habitat elsewhere within the site.

6.8 Hazel Dormouse

Desk Study

6.8.1 No recent hazel dormouse records were returned within the Study Area.

Field Survey

6.8.2 Part 4a offers suitable habitat for hazel dormouse in the form of mature hedgerows and woodland; however, the presence of hazel dormouse is limited in this area, and they are considered rare in Buckinghamshire (Ref. 9). Further survey work will be completed if suitable habitats are impacted by the Proposed Development.

6.9 Otter

Desk Study

6.9.1 The desk study returned one record of otter approximately 1.4 km south west of Part 4a Preliminary Order Limits.

Field Survey

- 6.9.2 The majority of Part 4a is terrestrial habitat comprising arable fields, and as such are unsuitable for otter. However, Part 4a is adjacent to the Grand Union Canal and overlaps with the River Ouzel.
- 6.9.3 There is the possibility of otters being present within the Grand Union Canal adjacent to the Site's eastern boundary and the River Ouzel as it runs through the far eastern extent of the Site. Both areas represent a small fragment of otter habitat with limited opportunities for holts, dens or rest sites, but that are connected to a much larger area of suitable habitat.
- 6.9.4 There are trees on the banks of the River Ouzel and adjacent to the A4146 road at the north of the Site that could provide holt sites for otter. Otter may commute and hunt in both watercourses, however the Grand Union canal is not likely to offer any resting places where it lies adjacent to the Site due to a lack of dense vegetation and frequent human activity.
- 6.9.5 Where suitable otter habitat exists, surveys will be completed to confirm presence/absence.

6.10 Water Vole

Desk Study

- 6.10.1 Desk study research returned no records of water vole within 2 km of Part 4a. A single historic water vole record dating from 2007 approximately 5 km south-west, was returned.

Field Survey

- 6.10.2 The majority of Part 4a is terrestrial habitat comprising arable fields, and as such are unsuitable for water vole. However, the Site is adjacent to the Grand Union Canal and overlaps with the River Ouzel.
- 6.10.3 It is possible that water vole could be present within both the Grand Union Canal and River Ouzel. From aerial imagery the habitat appears to be sub-optimal, with trees on the banks of the Ouzel likely to cause shading of the watercourse, while the Grand Union Canal has hard engineered banks offering little vegetation and no suitable habitat for burrows. Part 4a impacts a linear extent of approximately 85 m of the River Ouzel and 70 m of the Grand Union Canal. Given the sub-optimal habitat quality, even if water vole are present, it is likely that they only occur at low densities comprising one or two individuals with the area likely to be subject to impacts.
- 6.10.4 Survey data for Part 2 of the Scheme did not find any evidence of water vole along the Grand Union Canal south of Rugby. Combined with the lack of

desk study records, this suggests water vole are likely to be absent from Part 4a.

- 6.10.5 Habitat suitability surveys will be conducted and, where suitable water vole habitat exists, surveys will be completed to confirm presence/absence and population density estimates.

6.11 Terrestrial Invertebrates

Desk Study

- 6.11.1 The desk study returned 30 recent records of notable invertebrates within 2 km of the Part 4a Preliminary Order Limits.

Field Survey

- 6.11.2 Habitats comprise arable fields used for cereal crop cultivation bordered by hedgerows. Given modern monoculture practice and the likeliness of pesticide use, Part 4a is highly unlikely to support a wide variety of terrestrial species or species of conservation concern. Therefore, impacts to terrestrial invertebrates have been scoped out of this section.

6.12 Notable Plants

Desk Study

- 6.12.1 Recent desk study records of notable flora were identified within the Part 4a Study Area. These species include English bluebell and spiny retharrow *Ononis spinosa*.

Field Survey

- 6.12.2 Field surveys did not return any records of rare or notable plants within Part 4a. Rare and notable species are therefore considered likely to be absent.

6.13 Other Notable Species

Desk Study

- 6.13.1 The desk study returned records for hedgehog, common toad, common frog and smooth newt within the study area for Part 4a.

Field Survey

- 6.13.2 Habitats within the Survey Area comprise mostly arable land used for growing cereal crops and hedgerows. Habitats are suitable for notable species.

6.14 Invasive Non-Native Species

Desk Study

- 6.14.1 Seven recent desk study records of Himalayan balsam, Japanese knotweed, orange balsam, few-flowered garlic, variegated yellow archangel, Virginia creeper and wall cotoneaster *Cotoneaster horizontalis* were identified within the Part 4a Study Area.
- 6.14.2 There are 17 records of invasive animal species including Canada goose, mandarin duck, Chinese water deer, and Egyptian goose were identified within 2 km of Part 4a Preliminary Order Limits.

Field Survey

- 6.14.3 Field surveys did not identify any INNS but as further walkover surveys are required within the optimal growing period.

7. Part 4b

7.1 Designated Sites

- 7.1.1 There are two SACs with an international designation for their biodiversity significance within 30 km, 28 SSSIs (excluding six geological SSSIs) within 10 km of Part 4b Preliminary Order Limits, plus four LNRs and one NNR within 5 km. Two SSSIs and one LNR are directly adjacent or within the Preliminary Order Limits listed below:
- a. Dunstable and Whipsnade Downs SSSI (Within);
 - b. Kensworth Chalk Pit SSSI (Adjacent); and
 - c. Cottage Bottom Fields LNR (Adjacent).
- 7.1.2 There are 49 County Wildlife Sites (CWS) or District Wildlife Sites (DWS) within 2 km of the Part 4b Preliminary Order Limits. There are also three Bedfordshire Roadside Nature Reserves (RNR), 11 LWS', 14 Biological Notification Sites (BNS), and five wildlife corridors within 2 km.
- 7.1.3 13 non-statutory designated sites are within 200 m of Part 4b, and ten of these are directly adjacent to or within the Preliminary Order Limits. These ten are:
- a. Badgerdell Wood CWS (within);
 - b. Clipstone Brook CWS (within);
 - c. Dunstable and Whipsnade Downs CWS (within);
 - d. Potsgrove Grasslands CWS (adjacent);
 - e. Double Arches Pit CWS (adjacent);

- f. A5 (T) Road Wildlife Corridors (within);
- g. Buttermilk Wood BNS (adjacent);
- h. Pond near Buttermilk Wood BNS (adjacent);
- i. Eggington Fields CWS (within); and
- j. Kensworth Chalk Pit SSSI and CWS (adjacent).

7.1.4 These Sites and their distances from the Preliminary Order Limits are included within **Appendix 13-PD-2 Designated Sites** in PEI Report **Volume 4**.

7.2 Habitats

Ancient Woodland

7.2.1 There are 17 ancient woodlands within the Part 4b study area and are listed within **Appendix 13-PD-2 Designated Sites** in PEI Report **Volume 4**. Slough Wood Ancient Semi-Natural Woodland (ASNW) and Round Wood ASNW are partially within the Preliminary Order Limits. Bush Wood ASNW is adjacent to the Preliminary Order Limits.

Habitats of Principal Importance (HPI)

7.2.2 The desk study identified three HPI and two additional habitat classes¹ within the Part 4b Study Area, these were as follows:

- a. Lowland meadows (HPI);
- b. Deciduous woodland¹;
- c. Good quality semi-improved grassland¹; and
- d. No main habitat but additional habitats present¹.

7.2.3 No field data is currently available, but surveys will continue in 2026 to inform the assessment of impacts included in the ES and to develop appropriate mitigation where required.

Other Habitats

7.2.4 Surveys will continue in 2026 to inform the development of appropriate mitigation (where required) and the assessment of effects will be detailed in the ES.

7.3 Great Crested Newt

Desk Study

7.3.1 11 recent records of GCN were returned from within the Study Area. The closest is located within the Preliminary Order Limits.

- 7.3.2 There are no records for granted European Protected Species Licence (EPSML) applications in relation to GCN within 2 km of the Preliminary Order Limits as identified on the MAGIC website. However, there were three GCN records from 2014 approximately 10 m from the Preliminary Order Limits in Church End east of Leighton Buzzard.

Field Survey

- 7.3.3 A total of 79 ponds are present within the 250 m of part 4b, of which 14 are directly within the Preliminary Order Limits. No ponds have been surveyed within part 4b to date.
- 7.3.4 Ditches have not been surveyed within 250 m of the Preliminary Order Limits at Part 4b as such these results will not be included within the PEI Report and will be completed prior to the ES submission.
- 7.3.5 Seasonal survey work will continue in 2026 to confirm the status of GCN, and the survey results will be used to inform the details of any appropriate mitigation and the assessment of impacts and effects to be presented within the ES.

7.4 Reptiles

Desk Study

- 7.4.1 There are 24 recent records of reptiles from within the Study Area comprising records of slow-worm, grass snake, adder (*Vipera berus*), common lizard.

Field Survey

- 7.4.2 Survey work will continue in 2026 to inform the suitability of habitat for reptiles. The details of surveys and findings with full assessment of any potential effects, will be detailed within the ES.

7.5 Birds: Breeding and Wintering

Desk Study

- 7.5.1 In total, 174 wild species have been recorded within the Study Area. This includes resident, summer and winter visitor and vagrant species. Records from within the Study Area include Schedule 1 species such as barn owl and hobby *Falco subbuteo*, as well as Red listed nationally declining species such as corn bunting *Emberiza calandra*.

Field Survey

- 7.5.2 Monthly breeding and wintering bird survey visits are planned at sites to take account of the scheme design changes where there is suitable habitat to

support bird species of nature conservation importance and/or afforded special statutory protection.

7.6 Badger

Desk Study

- 7.6.1 Seven badger records were identified within the Part 4b Study Area. Four of which were located within the Preliminary Order Limits, the remaining three records were located within 2 km of the Preliminary Order Limits.

Field Survey

- 7.6.2 Scrub, woodland, grassland and hedgerows are present within the Study Area and could be utilised by badgers.
- 7.6.3 Further survey work will be conducted in 2026 to inform the full assessment of impacts and effects, with the details to be presented within the ES.

7.7 Bats

Desk Study

- 7.7.1 There are no statutory sites designated for bats within the Study Area.

Roosting

- 7.7.2 Two bat roost records were returned within the Study Area for a brown long-eared bat roost, including an unknown roost 503 m south-east and a likely maternity roost at 1.8 km south-west (peak count: nine).
- 7.7.3 There are four records of granted EPSML applications in relation to bats within 2 km of the Preliminary Order Limits as identified on the MAGIC website. These include licences for the destruction of non-breeding roosts for common pipistrelle, soprano pipistrelle and brown long-eared bat.
- 7.7.4 Chilterns Gateway Centre is located within the Preliminary Order Limits at the base of Dunstable Downs Beacon, which is an area of trenchless crossing. The building is scoped out of further survey as it will be located >20 m from the entry/exit pit, and any disturbance from the access road that may be adjacent to the visitor centre will be of short duration within an already disturbed area.
- 7.7.5 Three additional structures are located within the Preliminary Order Limits, including Downs House, a further residential property and Kensworth Radio Mast. None of these structures will be directly impacted and they are scoped out of further assessment.

- 7.7.6 Mature trees are present within and directly adjacent to the Preliminary Order Limits that offer potential roosting features for bats. Part 1b also intersects Bush Wood at Chaul End, avoiding the areas designated as ancient woodland.

Activity

- 7.7.7 A total of 444 bat records were returned from within the Study Area, including brown long-eared bat, common pipistrelle, Daubenton's bat, Leisler's bat, Myotis sp., Natterer's bat, noctule, Pipistrelle sp., serotine, soprano pipistrelle and barbastelle. No records were returned within the Preliminary Order Limits and of the five barbastelle records, all were located over 1 km from the Preliminary Order Limits.

Field Survey

- 7.7.8 Surveys of mature trees within Part 4b are ongoing.
- 7.7.9 Part 4b offers Moderate suitability for foraging and commuting bats through its network of hedgerows, occasional watercourses and pockets of woodland, scrub and grassland habitats.
- 7.7.10 Activity surveys (including nighttime bat walkovers and automated static detectors) will be carried out in 2026.

7.8 Hazel Dormouse

Desk Study

- 7.8.1 No recent hazel dormouse records were returned within the Study Area; however, there were twenty historic records returned, including eleven within the draft Order Limits from between 1973 and 2000. All other historic records were over 790 m away from the draft Order Limits.

Field Survey

- 7.8.2 Part 4b offers suitable habitat for hazel dormouse in the form of mature hedgerows and woodland; however, the presence of hazel dormouse is limited in this area, and they are considered rare in the Milton Keynes, Buckinghamshire and Central Bedfordshire (Ref. 9). Further survey work will be completed if suitable habitats are impacted by the Proposed Development.

7.9 Otter

Desk Study

- 7.9.1 Seven desk study records for otter within 2 km from the last 10 years were returned. The closest record is approximately 320 m north-east of Part 4b.

Field Survey

- 7.9.2 There are 11 wet ditches, rivers or streams that will be crossed which may provide suitable habitat for otter. Riparian habitat within 30 m of Part 4b Preliminary Order Limits, particularly woodland and scrub, provide habitat for otter holts.
- 7.9.3 Where suitable otter habitat exists, surveys will be completed to confirm presence/absence.

7.10 Water Vole

Desk Study

- 7.10.1 The desk study returned no recent records of water vole within 2 km of Part 4b Preliminary Order Limits. Historic records identified a single water vole recorded from 2007, approximately 3.6 km south-west of the Site. Seven additional historic records were returned from up to 5 km away but all date from the 1990s.

Field Survey

- 7.10.2 Surveys have not been completed in watercourses at Part 4b, however surveys of Part 2 of the Scheme did not record any evidence of water vole south of Rugby. Water voles are therefore considered unlikely to be present within Part 4b.
- 7.10.3 There are 11 wet ditches, rivers or streams that will be crossed which may provide suitable habitat for water vole. If water vole are present then given the lack of desk study records, they may be isolated remnant populations.
- 7.10.4 Where suitable water vole habitat exists, surveys will be completed to confirm presence/absence.

7.11 Terrestrial Invertebrates

Desk Study

- 7.11.1 The desk study returned over 180 different species of invertebrates predominately butterflies and moths, occasional true flies (mostly bees) and beetles, including stag beetle, small blue *Cupido minimus*, white admiral *Limenitis camilla*, white-letter hairstreak *Satyrrium w-album*, purple emperor *Apatura iris*, adonis blue *Lysandra bellargus*, chalk hill blue *Lysandra coridon*, Duke of Burgundy, which are all listed on Schedule 5 Wildlife & Countryside Act species.

Field Survey

- 7.11.2 There is no field data for both terrestrial invertebrates or habitats. These are anticipated to be undertaken in the 2026 survey season to inform the ES. From aerial imagery the majority of Part 4b appears to comprise mostly grazing fields. Further survey is required in order to assess their potential to support invertebrate diversity.

7.12 Notable Plants

Desk Study

- 7.12.1 The desk study noted that bluebell was present within 2 km of the Study Area.

Field Survey

- 7.12.2 Survey work will continue in 2026 to inform the design of appropriate mitigation and the assessment of impacts and effects presented within the ES.

7.13 Other Notable Species

Desk Study

- 7.13.1 The desk study returned records for hedgehog, common toad, common frog, smooth newt, and brown hare.

Field Survey

- 7.13.2 Habitat surveys have not yet been undertaken. These are anticipated to be undertaken in the 2026 survey season to inform the ES. Further assessment on the habitats is required in order to assess the potential to support other notable species.

7.14 Invasive Non-Native Species

Desk Study

- 7.14.1 The desk study returned records of 12 invasive non-native animal species within 2 km of Part 4b Preliminary Order Limits including bar-headed goose, barnacle goose, black swan, Canada goose, Chinese muntjac, Chinese water deer, grey squirrel, Egyptian goose, mandarin duck, red-crested pochard, ring-necked parakeet, weevil species.
- 7.14.2 The desk study included 29 recent records of invasive non-native plant species including records of Rhododendron, Himalayan balsam, Japanese knotweed, Variegated yellow archangel *Lamium galeobdolon*, Wall

cotoneaster, Few-flowered garlic *Allium paradoxum*, Japanese rose, giant hogweed and New Zealand pigmyweed.

Field Survey

- 7.14.3 Survey work will continue in 2026 to inform the design of appropriate mitigation and the assessment of impacts and effects presented within the ES.

8. References

- Ref. 1 UK Government (2022) Habitats and species of principal importance in England listed under Section 41 of the Natural Environment and Rural Communities Act 2006. Available at:
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- Ref. 2 DEFRA (2023) Statutory Biodiversity Metric calculation. Available at:
https://assets.publishing.service.gov.uk/media/6867e61881dd8f70f5de3b63/The_Statutory_Metric_Macro_Enabled_1.0.4.xlsm [Accessed 05/02/2026].
- Ref. 3 UKHab Ltd (2023), UK Habitat Classification Version 2.0.
- Ref. 4 DEFRA (2025) MAGIC Maps Application. Available at: [MAGIC](#) [Accessed 05/02/2026].
- Ref. 5 Collins, J. (editor) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines. Fourth Edition. London: Bat Conservation Trust.
- Ref. 6 DEFRA (1981) Wildlife and Countryside Act 1981 (as amended). Available at:
<https://www.legislation.gov.uk/ukpga/1981/69/contents> [05/02/2026].
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- Ref. 8 Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford
- Ref. 9 PTES (2025) Hazel Dormice Range and Distribution in The UK. Peoples Trust for Endangered Species. Available at: <https://ptes.org/wp-content/uploads/2014/06/21072016-Strategy-for-dormouse-reintroductions-in-England-and-Wales.pdf> [Accessed 05/02/2026]