



Hallgates to Elms Farm Pipeline Route

Leicester

Protected Species Report: Otter and Water Voles

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TEP
401 Faraday Street,
Birchwood Park,
Warrington,
WA3 6GA

Tel: 01925 844004
Email: tep@tep.uk.com

Offices in Warrington, Market Harborough, Gateshead, London and Cornwall

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The conclusions and recommendations contained in this document are based upon information gathered by TEP and provided by third parties. Information provided by third parties and referred to herein has not been independently verified by TEP, unless otherwise expressly stated in the document.

Nothing in this report constitutes legal opinion. If legal opinion is required, the advice of a qualified legal professional should be secured.

Executive Summary

Site Details	The proposed pipeline route is approximately 13 km in length and is located between Bradgate Park, near Cropston (approximate grid reference SK 53423 11450) and fields to the west of the A46 road near Groby (approximate grid reference SK 52651 05979).
Survey Details	An otter and water vole survey was undertaken at three watercourse crossings (WC2, WC3 and WC4). Surveys were undertaken on 18th and 19th September 2024. The surveys extended 200m upstream and downstream of each watercourse crossing location. WC1 was not subject to survey as access had not been granted by the land owner.
Summary	Evidence of foraging and commuting otter was identified at each of WC2, WC3 and WC4. No otter holts or resting places were identified. No evidence of water vole was identified at any watercourse crossing.
Recommendations	A pre-commencement survey for otter must be undertaken no more than one month prior to commencement of works at each watercourse crossing to affirm the absence of otter holts and couches at each crossing and within influencing distance (30m) of the works. A second water vole survey visit should be undertaken at WC2, WC3 and WC4 between April to June to affirm water vole absence at each watercourse crossing. Otter and water vole surveys must be undertaken at WC1, once access is granted, to inform the proposals.

This Executive Summary is not a substitute for the full report. Refer to the full text of this report for further detail.

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1.0 Introduction

- 1.1 The Environment Partnership (TEP) was commissioned by Severn Trent Water (STW) in May 2024 to undertake otter *Lutra lutra* and water vole *Arvicola amphibius* surveys to support proposals for the construction of a new water pipeline to the north-west of Leicester.
- 1.2 Surveys were undertaken at three watercourse crossings (WC2, WC3 and WC4), where the watercourses are crossed by the proposed pipeline route. The watercourse crossings were identified as potentially suitable for otter and water vole during the preliminary habitat survey conducted by TEP in May 2024 to inform the Preliminary Ecological Assessment (PEA) report (TEP Report Ref: 10480.001, June 2024).
- 1.3 This technical report includes details of the methods employed and any limitations of the otter and water vole surveys undertaken. Results are provided with supporting maps, together with an evaluation of the ecological features within the site, including an assessment of the potential impacts associated with the development proposals in relation to otter and water voles, and requirements for mitigation.

Site Location

- 1.4 The proposed pipeline route is approximately 13 km in length and is located between Bradgate Park, near Cropston (approximate grid reference SK 53423 11450) and fields to the west of the A46 road near Groby (approximate grid reference SK 52651 05979) (Figure 1).

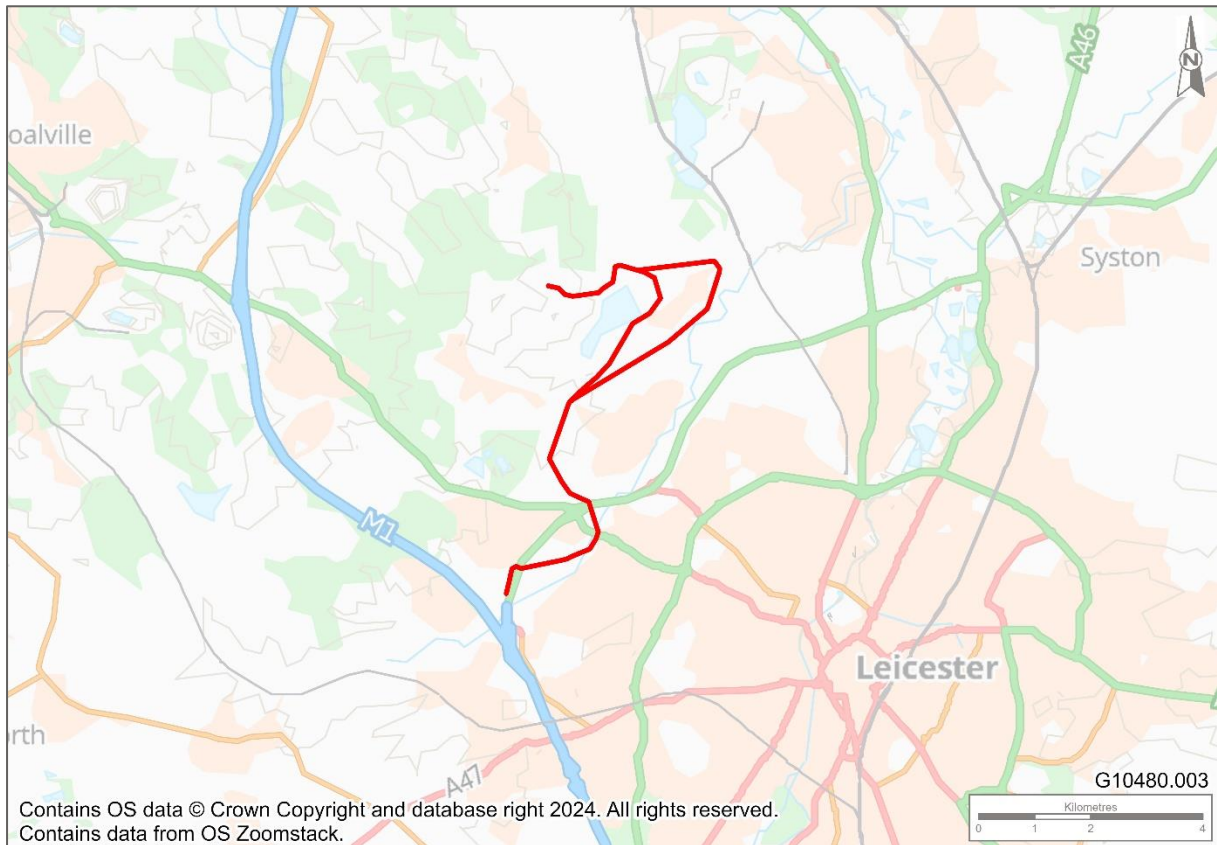


Figure 1: Site location and local context

Legislation

- 1.5 The Eurasian otter is the only native UK otter species. It is fully protected as a European protected species (EPS) and is also protected under Sections 9 and 11 of the Wildlife and Countryside Act 1981, together with amending legislation, lists the following as offences.
- Capture, kill, disturb or injure otters (on purpose or by not taking enough care);
 - Damage or destroy a breeding or resting place (deliberately or by not taking enough care);
 - Obstruct access to their resting or sheltering places (deliberately or by not taking enough care); and
 - Possess, sell, control or transport live or dead otters, or parts of otters.
- 1.6 In England and Wales water voles are listed on Schedule 5 of the Wildlife and Countryside Act (WCA) 1981, receiving full protection since 2008. The WCA 1981, together with amending legislation, lists the following as offences:
- Section 9(1) - Intentionally kill, injure or take any wild animal included in Schedule 5;
 - Section 9(2) - possess or control any live or dead wild animal included in Schedule 5 or any part or derivative of such an animal (other than for exemptions provided under Section 9(3));

- Section 9(4) Intentionally or recklessly
 - ▶ damage or destroy any structure or place which any wild animal included in Schedule 5 uses shelter or protection;
 - ▶ disturbs any wild animal included in Schedule 5 while it is occupying a structure place which it uses for shelter or protection; or
 - ▶ obstructs access to any structure or place which any wild animal included in Schedule 5 uses shelter or protection.

1.7 The Environment Act (EA) 2021 amends the licensing regime under Section 16 of the WCA 1981 to enable licences to be granted (in England only) for reasons of overriding public interest. This new purpose will enable those involved in development activities to apply for a derogation under the WCA for domestically protected species. Further, the amendments introduced by the EA 2021 at Section 16(3) requires that licensed may only be granted (in England) where:

- there is no other satisfactory solution, and
- the grant of the licence is not detrimental to the survival of any population of the species of animal or plant to which the licence relates.

1.8 A water vole licence for development is available but will only be issued subject to an accompanying method statement confirming that water vole disturbance is the only satisfactory option and that mitigation measures will ensure the population of water voles can be sustained.

Survey Rationale

1.9 The purpose of the surveys was to determine whether otter or water vole are present at the watercourse crossings (WC2, WC3 and WC4) or within influencing distance of the watercourse crossings. This information will be used to assess potential risks of disturbance to otter and water vole as a consequence of the proposed pipeline installation works.

2.0 Methods

Data Search

- 2.1 As part of the PEA report, species records for the last 10 years within 1km of the site were requested from Leicestershire and Rutland Environmental Records Centre (LRERC).

Field Survey

- 2.2 The preliminary habitat survey identified that the watercourse crossings (WC2, WC3 and WC4) and associated upstream and downstream riparian habitats had the potential to support otter and water vole.
- 2.3 WC2 is located within an un-named stream which flows east to connect to Rothley Brook. WC3 and WC4 are both located within Rothley Brook.
- 2.4 WC1 was not subject to survey as access was not granted by the landowner.

Habitat Suitability Assessment

- 2.5 Habitat Suitability Assessments at three watercourse crossings (WC2, WC3 and WC4) to support otter and water vole were completed by TEP on 18th and 19th September 2024.

Survey Design

- 2.6 A combined otter and water vole survey was undertaken at WC2, WC3 and WC4 by TEP on 18th and 19th September 2024.
- 2.7 The survey included the watercourse crossing points, and extended 200m upstream and downstream of the watercourse crossing points. The location of the watercourse crossing points and survey area extents are shown on Drawing G10480.026 Water Vole and Otter Survey Results.
- 2.8 The survey was designed considering the proposed development and The Water Vole Mitigation Handbook 2016. Annex A presents further details. The type of proposed development works determines the baseline survey data required to prove presence or likely absence of otter and water vole.

Otter

- 2.9 Field signs for otter include spraints (droppings), footprints, feeding remains and laying up areas (couches) on the immediate banksides. Other signs include potential permanent

dens or holts within exposed tree roots on riparian banks and within woodlands adjacent to and within 30m of the watercourse.

Water Vole

2.10 The standard methods, as outlined within the latest guidance by Dean et al. (2006)¹ and Strachan et al (2011)² were followed to complete a thorough search for evidence that would indicate the presence of water vole and other riparian mammals both on the site and locally. This evidence may include:

- Burrows;
- Feeding remains;
- Droppings;
- Footprints; and
- Incidental evidence of other riparian mammals (including North American mink *Neovison vison*).

Limitations

2.11 There were no limitations to the surveys.

Assumptions

2.12 Information provided by third parties, including publicly available information, is assumed to be correct at the time of publication.

¹ Dean, M, Strachan, R., Gow, D. and Andrews, R. (2016) The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series) (2016).Eds Fiona Mathews and Paul Chanin. The Mammal Society

² Strachan, R., Moorhouse, T. & Gelling, M. (2011) Water vole conservation handbook (3rd Ed.). Wildlife Conservation Research Unit, Oxford

3.0 Results

Data Search

- 3.1 Several records of otter *Lutra lutra* (EPS, WCA5, S41, LBAP) activity were returned within the 1km data search from LRERC. The closest record to site was located approximately 0.06km to the west of the site, on a tributary of Rothley Brook.
- 3.2 There are no records of water vole *Arvicola amphibius* (WCA5, S41, LBAP) within 1km of the site.

Field Survey

Habitat Suitability Assessment

Otter

- 3.3 All three watercourse crossings (WC2, WC3 and WC4) and associated upstream and downstream riparian habitats were assessed as being suitable for foraging and commuting otter. This was because the watercourses all contain water of a suitable depth for foraging and commuting, and suitable food sources within the watercourses were noted including fish and signal crayfish.
- 3.4 The watercourses also support trees on their banks, and extensive brash was also noted in some sections of the watercourses. Exposed tree roots on riparian banks and brash within watercourses can be utilized by otter as holts and couches.

Water vole

- 3.5 All three watercourse crossings (WC2, WC3 and WC4) and associated upstream and downstream riparian habitats were considered sub-optimal for water vole, however, WC2 provided the most suitable habitat.
- 3.6 The bankside vegetation within each watercourse comprised frequent to abundant trees and / or scrub which cast shade, and water vole typically avoid densely shaded environments.
- 3.7 The herbaceous bankside vegetation at each watercourse also comprised frequent to abundant nettle *Urtica dioica*, which water vole do not favour as a food source. Suitable food plants including tall grasses, sedges, rushes and aquatic vegetation occurred rarely at WC3 and WC4. Tall grasses occurred occasionally, and sedges and rushes occurred rarely at WC2, with no aquatic vegetation.

- 3.8 The current at WC3 and WC4 was fast although some areas of slow flow were present. The current at WC2 was variable, with areas of static water, slow flow and faster flow present. Fast flow is not favoured by water vole due to their poor swimming ability.
- 3.9 The banks at each watercourse crossing were typically shallow and therefore largely unsuitable for burrowing, although vertical sections which are suitable for burrowing were also present.
- 3.10 Full results of the water vole habitat suitability assessment are provided in Annex B.

Presence or Likely Absence

Otter

- 3.11 Evidence of foraging and commuting otter were found at all three watercourse crossings (WC2, WC3 and WC4):
- Two areas of otter spraint were found at WC2, approximately 60m and 200m east of the watercourse crossing location.
 - Feeding remains comprising a signal crayfish *Pacifastacus leniusculus* claw and tail were found at WC3, within 5m of the watercourse crossing location; and
 - Two areas of otter spraint were found at WC4, approximately 115m and 170m north and south respectively of the watercourse crossing location.
- 3.12 No otter holts or couches were found at any watercourse crossing.

Water vole

- 3.13 No evidence of water vole, including droppings, latrines or feeding remains, were found at any watercourse crossing (WC2, WC3 and WC4).
- 3.14 Small mammal burrows of a suitable size and shape to be used by water vole were recorded at WC2 and WC3. Water vole burrows are taken to be approximately 4-8cm in width and height. However, as no further evidence of water vole was found, it cannot be definitively concluded that the burrows were created by or are currently in use by water vole.

Other Species

- 3.15 Evidence of rat was found at all three watercourse crossings (WC2, WC3 and WC4), including droppings, large rat burrows and footprints.

Summary

Otter

- 3.16 The watercourses provide suitable habitat for otter, and evidence of foraging and commuting otter was identified within the survey area at all three watercourse crossings.
- 3.17 No otter holts or couches were identified.

Water Vole

- 3.18 The watercourses provide sub-optimal habitat for water vole. No evidence of water vole was found within the survey area at any watercourse crossing.

4.0 Photographic Record

- 4.1 This section presents a photographic record of the watercourses surveyed and field evidence recorded.

Watercourse Crossing WC2

Figure 2: WC2 – Overview



Figure 3: WC2 – Overview (within channel)



Figure 4: WC2 – Otter spraint



Figure 5: WC2 – Small mammal burrow



Watercourse Crossing WC3

Figure 6: WC3 – Overview



Figure 7: WC3 – Small mammal burrow



Figure 8: WC3 – Otter feeding remains



Watercourse Crossing WC4

Figure 9: WC4 - Overview



Figure 10: WC4 – Otter spraint



5.0 Evaluation and Recommendations

Otter

- 5.1 Evidence of foraging and commuting otter was found within 200m of all three watercourse crossings (WC2, WC3 and WC4). There are therefore implications to foraging and commuting otter as a result of the pipeline installation works.
- 5.2 No otter holts or resting places were identified at or within 200m of any watercourse crossing. There are therefore currently no implications to otter holts or resting places as a result of the works.
- 5.3 Standard pollution prevention and control measures should be set out within a Construction Environmental Management Plan (CEMP). The measures within the CEMP should minimise run-off from the construction works into the watercourses to protect water quality. This will minimise indirect impacts on otter utilising the water course for foraging and commuting.
- 5.4 Given that otter are active along each watercourse, a pre-commencement survey for otter is recommended to affirm the absence of holts and couches at each of the watercourse crossing points and within influencing distance (30m) of the works. The survey should be undertaken no more than one month prior to commencement of the works.
- 5.5 An otter survey is required at WC1. This survey can be undertaken at any time of year.
- 5.6 Otter surveys are valid for up to two years from the survey date. The surveys at WC2, WC3 and WC4 are therefore valid up to September 2026.

Water Vole

- 5.7 The water vole survey consisted of a single survey visit up to 200m upstream and downstream of each watercourse crossing (WC2, WC3 and WC4). No evidence of water vole was found within the survey area at any watercourse crossing.
- 5.8 In line with The Water Vole Mitigation Handbook 2016, two survey visits are required to affirm absence of water vole, one visit between mid-April and June, and one visit between July and September, with visits spaced two months apart. This first survey visit was completed between July and September. As water vole were not identified to be present at any watercourse crossing during the survey, a second survey visit of each watercourse crossing (WC2, WC3 and WC4) will be required between mid-April and June to affirm water vole absence. It is recommended that this survey is undertaken in 2025.

- 5.9 A habitat suitability assessment, to assess the suitability of WC1 for water vole is required. If the watercourse is suitable, up to two survey visits will be required in line with The Water Vole Mitigation Handbook 2016 to determine water vole presence / absence, one visit between mid-April and June, and one visit between July and September.
- 5.10 Water vole surveys are valid up to two years from the survey date.

6.0 References

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

Government Circular: Biodiversity & Geological Conservation – Statutory Obligations and their impact within the Planning System. ODPM Circular 0/2005, Defra Circular 01/2005 <http://www.communities.gov.uk/publications/planningandbuilding/circularbiodiversity>

Strachan, R., Moorhouse, T. & Gelling, M. (2011) Water vole conservation handbook (3rd Ed.). Wildlife Conservation Research Unit, Oxford.

The Wildlife & Countryside Act 1981 (As amended)

The Natural England Rural Communities Act 2006.

The National Planning Policy Framework, 2019 (NPPF)

UK Biodiversity Steering Group (1995) Biodiversity – the UK Steering Group Report. Volume 2: Action Plans. P89 SAP for Pipistrelle. London, HMSO.

Annex A: Survey Design

Survey Design

(The Water Vole Mitigation Handbook, Box 1, Page 9)

1. Type of works: Very small-scale works affecting up to 15m of watercourse	
Example project	Construction of an outfall, bridge repair works, or installation of pipes up to 15m long within a narrow field drains (where these do not form part of a larger development)
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas plus 100m upstream and downstream. A comprehensive desk study exercise will not necessary be required.
Additional information (if water voles present)	Micro-mapping of the habitat and burrow locations to allow design to minimise impacts (when relevant). Further data may be needed to ensure that there is sufficient alternative habitat available to displace water voles into. This may be obtained through desktop study or a habitat assessment combined with 'spot checks' for water voles over a wider area (1-2km upstream and downstream of the works.

2. Type of works: Works temporarily affecting up to 50m of watercourse	
Example project	Pipeline crossing a watercourse
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus 200m upstream and downstream of the works. A comprehensive desktop study exercise will not necessarily be required.
Additional information (if water voles present)	Micro-mapping of the habitat and burrow locations to allow design to minimise impacts (when relevant). Further data may be needed to ensure that there is sufficient alternative habitat available to displace water voles into. This may be obtained through desktop study or a habitat assessment combined with 'spot checks' for water voles over a wider area (1-2km upstream and downstream of the works.

3. Type of works: Works temporarily affecting more than 50m of watercourse

Example project	Watercourse re-profiling or repair/reinstatement of bank stabilisation structures
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus at least 200m upstream and downstream of the works. For works affecting more than 500m of watercourse, the study area should increase to 500m upstream and downstream of the works. A comprehensive desk study exercise will not necessarily be required, but would be advisable for works affecting $\geq 250\text{m}$ of watercourse.
Additional information (if water voles present)	Desk study – Site and up to 2-5km around it (or a habitat assessment combined with 'spot checks' for water voles) to inform the approach to mitigation and the assessment of fragmentation effects. The study area should be proportionate to the length of habitat affected.

4. Type of works: Works with permanent impacts affecting 15-50m of watercourse

Example project	Bank side revetment works
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus 100-200m upstream and downstream of the works (proportionate to the length of watercourse affected). Desk study – site and up to 2km around it (or a habitat assessment combined with 'spot checks' for water voles).
Additional information (if water voles present)	Sufficient information is likely to have been provided by the 'presence/likely absence' surveys.

5. Type of works: Works with permanent impacts affecting more than 50m of watercourse OR Works requiring permanent culverting of watercourse

Example project	Bank side revetment works OR Highway schemes or some residential/mixed-use developments
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus 200-500m upstream and downstream of the works (proportionate to the likely fragmentation effects). Desk study – site and up to 2-5km around it, or a habitat assessment combined with 'spot checks' for water voles.
Additional information (if water voles present)	The study area for the desk study (or habitat assessment combined with 'spot checks' for water voles) may need to be increased to inform the approach to mitigation.

6. Type of works: Very large scale works

Example project	Coastal re-alignment projects (where there are reasonable grounds to expect the presence of water voles)
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus approximately 1km around it. Desk study – site and up to 10km around it (or a habitat assessment combined with 'spot checks' for water voles).
Additional information (if water voles present)	The study area for the desk study (or habitat assessment combined with 'spot checks' for water voles) may need to be increased to inform the approach to mitigation.

Field sign surveys - one site visit or two?

The Water Vole Mitigation Handbook (Page 15)

The water vole is a mobile species that responds to habitat changes over the course of the breeding season: a single visit can therefore be insufficient to confirm likely absence in many cases. In addition, where water voles are present, survey data based on two visits will allow a more robust assessment of the impacts of the project, particularly where water voles use different parts of a site during different parts of the breeding season. This can also be important in determining the most appropriate approach to mitigation. These guidelines therefore recommend that two field survey visits are routinely undertaken. However, it is recognised that the second

visit may not be required in some cases, and it may therefore be possible to make a case for an assessment based on one visit. Examples of scenarios where a single visit (before submitting a planning application) may be sufficient as follows:

1. Water vole presence is confirmed during the first survey visit.

A second visit may not be needed where the assessment of effects on water voles can be made on a precautionary basis (i.e. water voles are present throughout the site at the maximum density that the habitat could support), and the approach to mitigating incidental mortality (displacement, relocation by trapping, off-site translocation, etc.) can be determined from the first visit alone.

The assessment of the quality of the habitat, and therefore the likely maximum density of water voles, will need to consider changes to the habitat in different parts of the breeding season as a result of natural processes (e.g. changes to water level) and management activities. This can be a difficult assessment to make for many sites.

2. Water vole presence is not confirmed during the first survey visit.

A second visit may not be needed where the habitat is of very low suitability for water voles and there is a very low likelihood that water voles are present in the surrounding area - up to 2km from the area of the proposed works, or less where significant barriers to water vole dispersal are present.

The assessment of the suitability of the habitats will need to consider changes to the habitat in different parts of the breeding season as a result of natural processes and management activities. This can be a difficult assessment to make for many sites. It will be difficult to make a robust case for not undertaking a second survey where access to surrounding areas is limited or impossible.

A second visit may also not be needed where the assessment of effects on water voles can be made on a precautionary basis (as per point 1 above)

In all cases, a second visit would be advisable prior to commencing works.

Annex B: Habitat Suitability Assessment

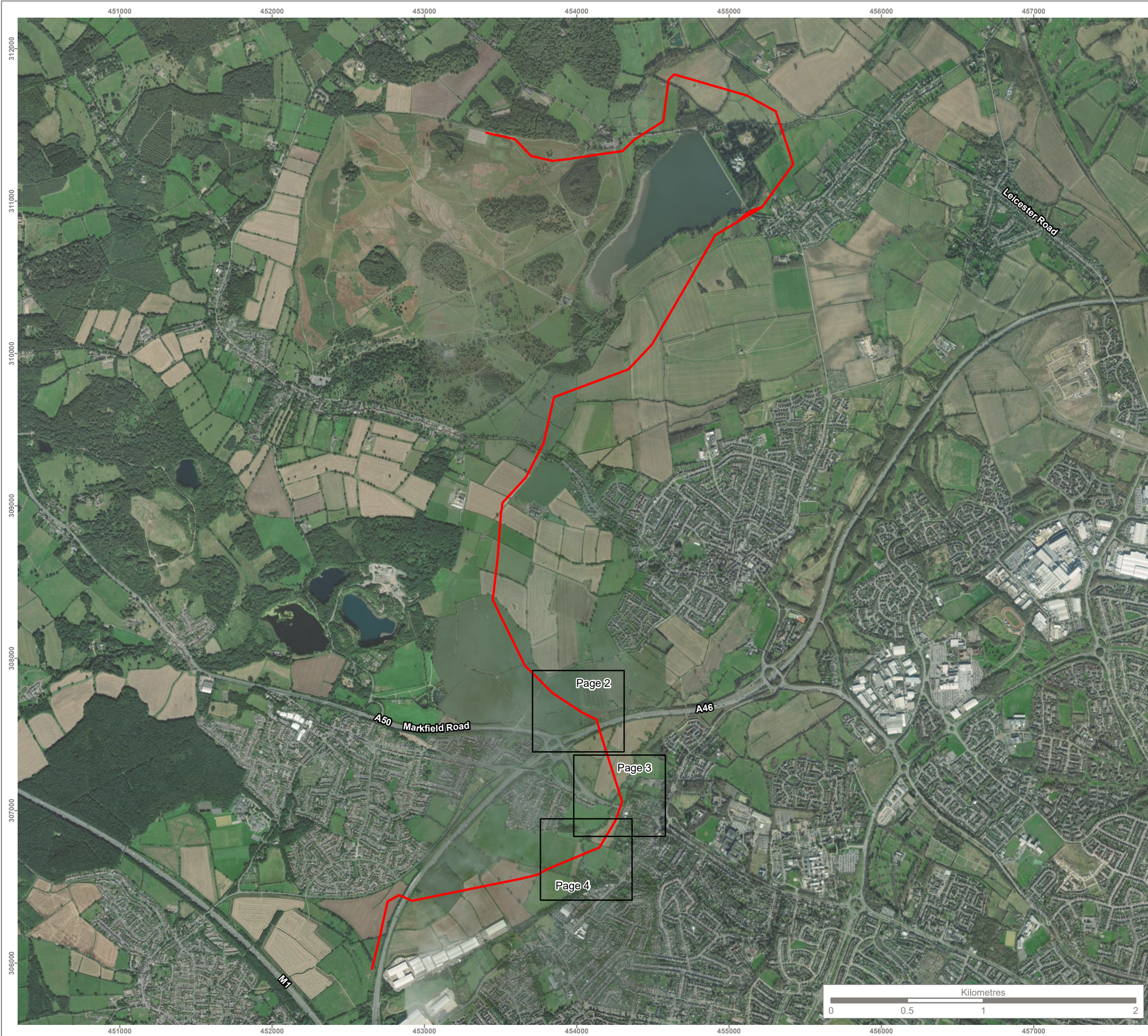
ate	18 th September 2024		
Ditch No	Watercourse Crossing 2 (WC2)		
Habitat Information			
Habitat	Shore/bank	Bordering land use	Vegetation (DAFORN*)
Stream	Earth	Arable / Agricultural	Bankside trees - O Bushes (hedges/scrub) - O Herbs - F Submerged weed - N Reeds/sedges - R Tall grass - O Short grass - O Disturbance: None
Bank Profile	Bank Width	Bank Depth	Species
Some shallow <45°, some vertical	2-5m	Up to 1m	Trees / scrub: - Ash – O - Willow - O - Alder – O - Bramble - A Forbs: - Nettle - A - Great willowherb - F - Hedge woundwort - R - Hedge bindweed – R - Reed canary grass – O Aquatic vegetation / Reeds / Sedges: - Greater pond sedge – R - Greater reed-mace - R
Current		Water depth	
Variable – some static, some slow, some fast sections		Up to 1m	
Water Vole Habitat Suitability Assessment (Score 1 if feature present and 0 if absent)			
(a) Well developed (>60%) bankside <u>and</u> emergent vegetation providing food & cover - 0 (b) A good variety of food plants including favoured plants and winter food sources - 0 (c) Suitable refuge areas above extremes in water levels - 0 (d) Soft, earth banks suitable for burrowing (30 to 60 degree slope) - 0 (e) Water permanently present (does not dry up) - 1 (f) Open water for swimming - 1 (g) Ledge or berm present at or close to water level - 1 (h) Lack of damage or erosion to the banks - 1 (i) Slow flowing current or static water - 0 (j) Non-native invasive plant species absent (Himalayan Balsam, Japanese knotweed) - 1 HABITAT ASSESSMENT SCORE (Total score of features present) - 5		Scores of; 0-2 Unsuitable 3-6 Sub-optimal 7-10 Optimal	*DAFORN Dominant 81-100% Abundant 61-80% Frequent 41-60% Occasional 21-40% Rare 1-20% None 0%

Date	18 th September 2024		
Ditch No	Watercourse Crossing 3 (WC3)		
Habitat Information			
Habitat	Shore/bank	Bordering land use	Vegetation (DAFORN*)
Brook	Earth	Arable / Agricultural	Bankside trees - F Bushes (hedges/scrub) - F Herbs - F Submerged weed - R Reeds/sedges - R Tall grass - R Short grass - R Disturbance: None
Bank Profile	Bank Width	Bank Depth	Species
Some shallow <45°, some vertical	5-10m	Up to 1m	Trees / scrub: - Willow - F - Alder – F - Bramble – F - Hawthorn - O Forbs: - Nettle - F - Great willowherb - O - Gypsywort – R - Watercress – R - Water figwort – R - Reed canary grass - R - Water forget-me-not - R Aquatic vegetation / Reeds / Sedges: - Pendulous sedge – R - Brooklime - R
Current		Water depth	
Fast		Up to 1m	
Water Vole Habitat Suitability Assessment (Score 1 if feature present and 0 if absent)			
(a) Well developed (>60%) bankside <u>and</u> emergent vegetation providing food & cover - 0 (b) A good variety of food plants including favoured plants and winter food sources - 0 (c) Suitable refuge areas above extremes in water levels - 0 (d) Soft, earth banks suitable for burrowing (30 to 60 degree slope) - 0 (e) Water permanently present (does not dry up) - 1 (f) Open water for swimming - 1 (g) Ledge or berm present at or close to water level - 1 (h) Lack of damage or erosion to the banks - 1 (i) Slow flowing current or static water - 0 (j) Non-native invasive plant species absent (Himalayan Balsam, Japanese knotweed) - 1 HABITAT ASSESSMENT SCORE (Total score of features present) - 5		Scores of; 0-2 Unsuitable 3-6 Sub-optimal 7-10 Optimal	*DAFORN Dominant 81-100% Abundant 61-80% Frequent 41-60% Occasional 21-40% Rare 1-20% None 0%

Date	19 th September 2024		
Ditch No	Watercourse Crossing 4 (WC4)		
Habitat Information			
Habitat	Shore/bank	Bordering land use	Vegetation (DAFORN*)
Brook	Earth	Arable / Agricultural	Bankside trees - A Bushes (hedges/scrub) - A Herbs - F Submerged weed - R Reeds/sedges - R Tall grass - R Short grass - R Disturbance: None
Bank Profile	Bank Width	Bank Depth	Species
Some shallow <45°, some vertical	5-10m	Up to 1m	Trees / scrub: - Willow - A - Alder – A - Hawthorn – F - Rose - F - Bramble – F Forbs: - Nettle - A - Great willowherb - O - Reed canary grass - R - Reed sweet grass - R - Water forget-me-not – R Aquatic vegetation / Reeds / Sedges: - Bur-reed – R
Current		Water depth	
Fast		Up to 1m	
Water Vole Habitat Suitability Assessment (Score 1 if feature present and 0 if absent)			
(a) Well developed (>60%) bankside <u>and</u> emergent vegetation providing food & cover - 0 (b) A good variety of food plants including favoured plants and winter food sources - 0 (c) Suitable refuge areas above extremes in water levels - 0 (d) Soft, earth banks suitable for burrowing (30 to 60 degree slope) - 0 (e) Water permanently present (does not dry up) - 1 (f) Open water for swimming - 1 (g) Ledge or berm present at or close to water level - 1 (h) Lack of damage or erosion to the banks - 1 (i) Slow flowing current or static water - 0 (j) Non-native invasive plant species absent (Himalayan Balsam, Japanese knotweed) - 1 HABITAT ASSESSMENT SCORE (Total score of features present) - 5		Scores of; 0-2 Unsuitable 3-6 Sub-optimal 7-10 Optimal	*DAFORN Dominant 81-100% Abundant 61-80% Frequent 41-60% Occasional 21-40% Rare 1-20% None 0%

Drawings

Drawing 1: G10480.026 Water Vole and Otter Survey Results



KEY

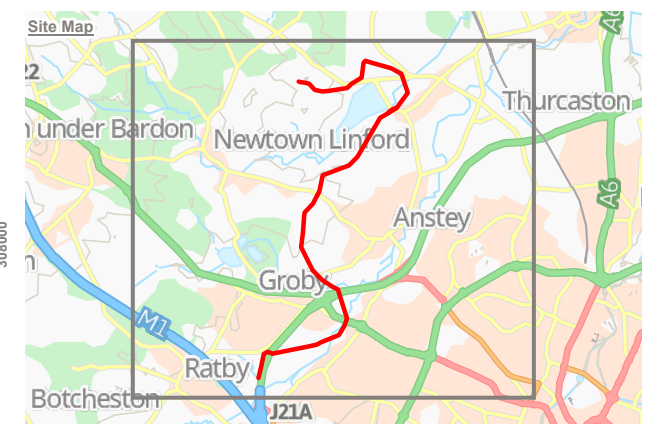
- Pipeline route
- Page extent and page number

Note:

The locations of species, habitats and habitat features are indicative.



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Rev	Description	Drawn	Approved	Date



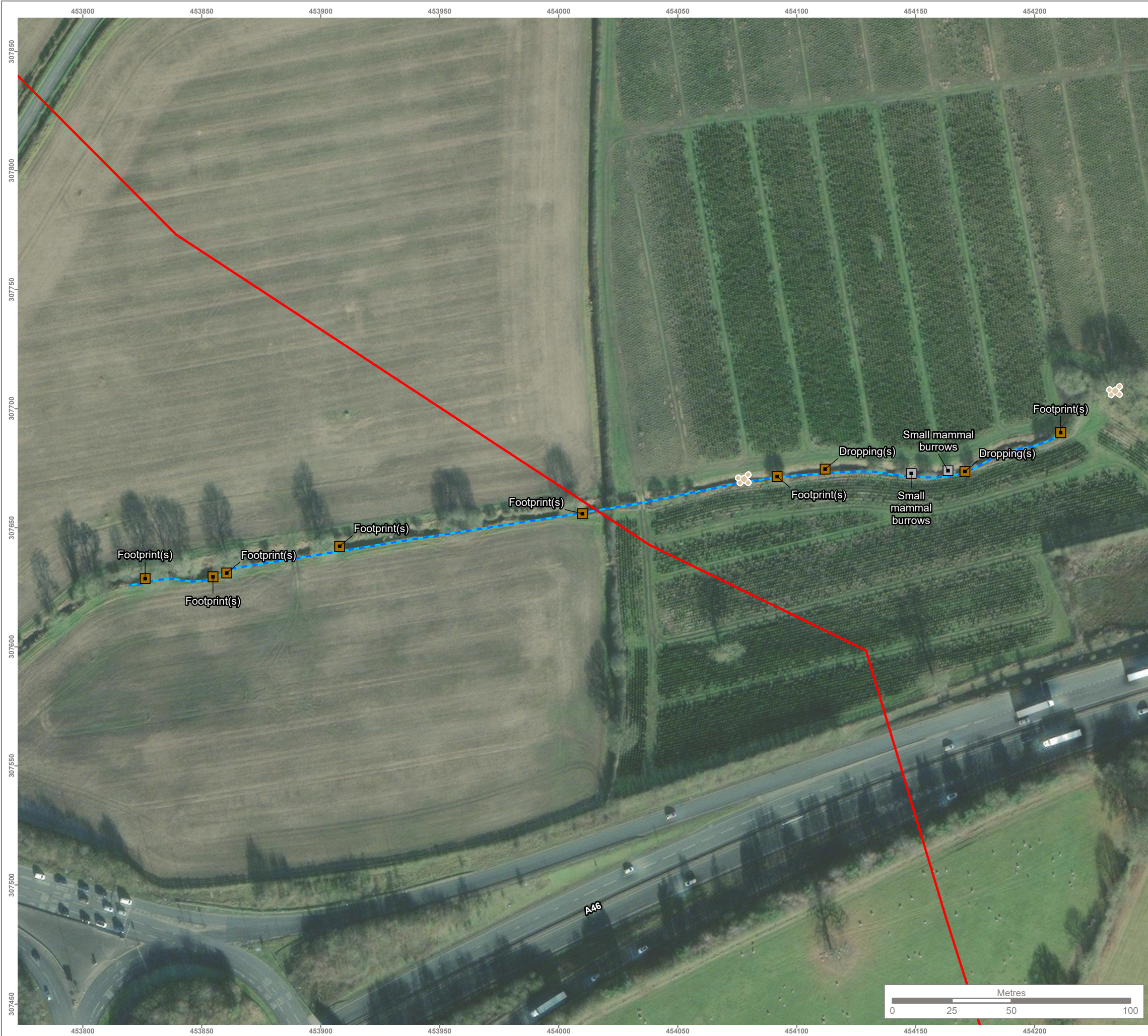
**THE
ENVIRONMENT
PARTNERSHIP**

401 Faraday Street, Birchwood Park, Warrington, WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Hallgates to Elms Farm Pipeline, Leicestershire

Title
**Water Vole and Otter Survey Results
Overview**

Drawing Number G10480.026.1				Page 1 of 4
Drawn AP	Checked CW	Approved KM	Scale 1:25,000 @ A3	Date 18/10/2024



KEY

Pipeline route

Watercourse survey extent (200m upstream and downstream of crossing)

Otter Evidence

Dropping(s) (x2)

Other Findings

Evidence of Rat

Evidence of other mammal

Note:
The locations of species, habitats and habitat features are indicative.

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Site Map

Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP

401 Faraday Street, Birchwood Park, Warrington, WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Hallgates to Elms Farm Pipeline, Leicestershire

Title
Water Vole and Otter Survey Results
Watercourse Crossing 2

Drawing Number
G10480.026.2

Page 2 of 4

Drawn	Checked	Approved	Scale	Date
AP	CW	KM	1:1,600 @ A3	18/10/2024



KEY

- Pipeline route
- Watercourse survey extent (200m upstream and downstream of crossing)

Otter Evidence

- Feeding remains (x1)

Other Findings

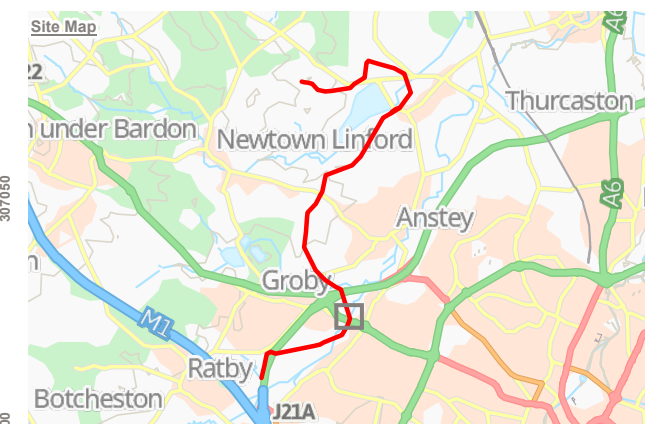
- Evidence of Rat
- Evidence of other mammal

Note:

The locations of species, habitats and habitat features are indicative.



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401 Faraday Street, Birchwood Park, Warrington, WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Hallgates to Elms Farm Pipeline, Leicestershire

Title
Water Vole and Otter Survey Results
Watercourse Crossing 3

Drawing Number G10480.026.3				Page 3 of 4
Drawn AP	Checked CW	Approved KM	Scale 1:1,600 @ A3	Date 18/10/2024



KEY

- Pipeline route
- Watercourse survey extent (200m upstream and downstream of crossing)

Otter Evidence

- Dropping(s) (x2)

Other Findings

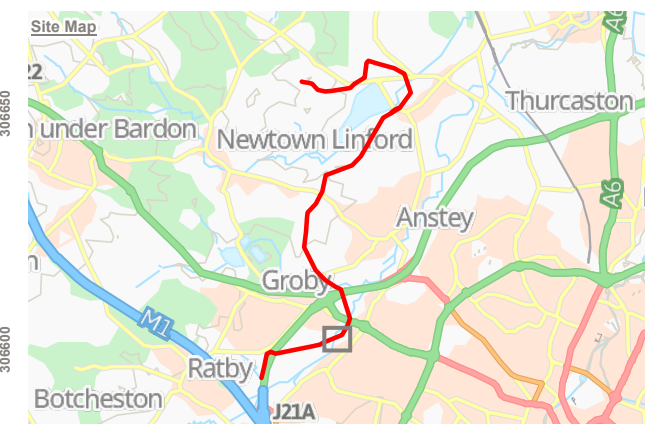
- Evidence of Rat

Note:

The locations of species, habitats and habitat features are indicative.



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401 Faraday Street, Birchwood Park, Warrington, WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Hallgates to Elms Farm Pipeline, Leicestershire

Title
Water Vole and Otter Survey Results
Watercourse Crossing 4

Drawing Number G10480.026.4				Page 4 of 4
Drawn AP	Checked CW	Approved KM	Scale 1:1,600 @ A3	Date 18/10/2024



THE
ENVIRONMENT
PARTNERSHIP

**HEAD OFFICE
WARRINGTON**

Tel: 01925 844004
E-mail: tep@tep.uk.com

**MARKET
HARBOROUGH**

Tel: 01858 383120
E-mail: mh@tep.uk.com

GATESHEAD

Tel: 0191 605 3340
E-mail: gateshead@tep.uk.com

LONDON

Tel: 020 3096 6050
E-mail: london@tep.uk.com

CORNWALL

Tel: 01326 240081
E-mail: cornwall@tep.uk.com
