

Appendix B7: Ecology Assessment -Off-site Highways

Document reference: LCC-RVBC-BO-SEI Appendix B7



**Haweswater Aqueduct Resilience Programme -
Proposed Bowland Section
Supplementary Environmental Information**

Appendix B7: Annex 7

Off-Site Highways Works – TR3 Hedgerows Report

January 2022



Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Alice Helyar, <i>Principal Ecologist</i>	Approved:	Eve Loxham, <i>Ecologist</i>
Report reference:	TR3 Highways Hedgerow Survey Report V1	Date:	05/01/2021
2 Project Drawings			
TR3 Hedgerow Plans Proposed Bowland Section		BOW167_HARP_9.5_HEDGEROWS_TR3_HIG HWAYS	
4 Ecology Surveys			
Surveyors:	Alice Helyar PhD, MSc, BSc (Hons), MCIEEM Eve Loxham MBiolSci (Hons), GradCIEEM Catrin Scott MRes, BSc (Hons) Jodie Marks MSc, BSc (Hons) Abigail Hamer BSc (Hons)		
Survey date(s):	24/11/2020, 25/11/2020, 26/11/2020, 30/11/2020, 01/12/2020, 02/12/2020, 08/12/2020, 10/12/2020, 14/12/2020 Survey descriptions and mapping extracted from the original Phase 1 Habitat Survey were undertaken between May 2019 and April 2020.		
Survey Method:	Hedgerows were assessed in accordance with The Hedgerow Regulations 1997. This report details all hedgerows currently identified with agreed access in place or roadside access which are within the TR3 Highways survey area, all of which have been subject to full assessment against the Hedgerow Regulations 1997. Hedgerow lengths detail the portion of the hedgerow within the survey area (and buffer).		
Weather Conditions:	24/11/2020 - Cloud cover (6/8), Wind Beaufort F3 SSE, 11 °C, no precipitation 25/11/2020 - Cloud cover (3/8), Wind Beaufort F2 WNW, 5 °C, no precipitation 26/11/2020 - Cloud cover (3/8), Wind Beaufort F1 S, 8 °C, no precipitation 30/11/2020 – Cloud cover (6/8), Wind Beaufort F5 ES, 10 °C, light precipitation 01/12/2020 - Cloud cover (0/8), Wind Beaufort F1 NW, 6 °C, no precipitation 02/12/2020 - Cloud cover (6/8), Wind Beaufort F4 E, 8 °C, light precipitation 08/12/2020 - Cloud cover (8/8), Wind Beaufort F5 SE, 8 °C, raining 10/12/2020 - Cloud cover (8/8), Wind Beaufort F4 SSE, 6 °C, no precipitation 14/12/2020 – cloud cover (8/8), Wind Beaufort F4 SW, 8 °C, raining For weather conditions relating to the Hedgerows Surveys undertaken in 2019-2020, refer to the separate pertaining reports; “TR3 Wray Compound Hedgerow Survey Report V1” (Bowland Ecology, 2020); “TR3 Wray Car Park Hedgerow Survey Report V1” (Bowland Ecology, 2020a) and “TR3 Hedgerow Survey Report V2” (Bowland Ecology, 2020b).		
Limitations to the survey:	The survey season for hedgerows is from April to October, with June and July being the most suitable months. Those surveyed outside the optimal survey season listed in the survey dates above may be limited by a reduced view of ground floral species and may require re-visiting to further establish their importance. Hedgerows at the survey boundary or along watercourse edges were viewed from one elevation due to lack of access to the other. Hedgerows included within this report have all been subject to a full hedgerow assessment.		

Additional hedgerows which are un-numbered are shown on the associated plans. At the time of writing this report, access to fully assess those hedgerows was not agreed and these have therefore not been subject to a full hedgerow regulations assessment.

4 Survey Results

TR3.HH1



The hedgerow is approximately 247 m long and 1.5 m in height and 1.5 m wide. There is one gap within the hedgerow which is less than 5% of the entire hedge and there are two associated mature trees. There is an associated dry ditch on the western side of the hedgerow. The hedgerow connects to one other hedgerow (TR3.HH46) but connections with other hedgerows or woodlands do not score four or more points. The canopy is species rich, being dominated by blackthorn (*Prunus spinosa*), with smaller amounts of hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*) and holly (*Ilex aquifolium*) (five woody species). The ground flora has notable species of lady fern (*Athyrium filix-femina*), herb Robert (*Geranium robertianum*), wood avens (*Geum urbanum*) and dog's mercury (*Mercurialis perennis*). Also noted within the ground flora were additional species including; bramble (*Rubus fruticosus* agg.), cow parsley (*Anthriscus sylvestris*), common nettle (*Urtica dioica*), ivy (*Hedera helix*), wood melick (*Melica uniflora*), ribwort plantain (*Plantago lanceolata*), tufted hairgrass (*Deschampsia cespitosa*), ground ivy (*Glechoma hederacea*), cleavers (*Galium aparine*), false oat grass (*Arrhenatherum elatius*), greater stitchwort (*Stellaria holostea*), horsetail (*Equisetum* sp.), garlic mustard (*Alliaria petiolata*), red campion (*Silene dioica*), barren strawberry (*Waldsteinia fragarioides*) and nipplewort (*Lapsana communis*). The ground flora is also likely to include English bluebell (*Hyacinthoides non-scripta*). The hedgerow appears to be more than 30 years in age.

It is likely that the hedgerow supports one Wildlife & Countryside Act (1981 as amended) protected species (English bluebell) due to the composition of the ground flora and proximity to a nearby broadleaved woodland, however, due to the timing of the survey it was not possible to confirm presence. If English bluebells are present, this hedgerow would be classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH2



The hedgerow is 60 m long and 1 m in height and 0.5 m wide. There are three gaps within the hedgerow, which constitute more than 10% of its length and there are no associated mature trees. Connections with other hedgerows or woodlands do not score four or more points. The canopy is dominated by sycamore (*Acer pseudoplatanus*) with smaller amounts of hazel, beech (*Fagus sylvatica*), ash (*Fraxinus excelsior*) and blackthorn (four woody species; excluding sycamore). The ground flora has notable species including; dog's mercury, hart's tongue (*Asplenium scolopendrium*), herb Robert and wood avens. Also noted within the ground flora were additional species including; foxglove (*Digitalis purpurea*), cow parsley, false oat grass, ivy, crosswort (*Cruciata laevipes*), cock's foot grass (*Dactylis glomerata*) and stitchwort sp. (*Stellaria* sp.). The hedgerow appears to be more than 30 years in age.

No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow is not classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH3

No photo.

The hedgerow is 102 m long, 1.5 m in height and 1.5 m wide and it is supported upon a bank for at least half of the length. There are no gaps within the hedgerow and there is one associated mature tree. The hedgerow connects to one other hedgerow (not surveyed). Connections with other hedgerows or woodlands do not score four or more points. The canopy is species rich, with dominant blackthorn and smaller amounts of hazel, hawthorn, holly, elder, wych elm (*Ulmus glabra*) and whitebeam sp. (*Sorbus* sp.) (seven woody species). The ground flora has notable species of lady fern, male fern (*Dryopteris filix-mas*), dog's mercury and wood avens. Also noted within the ground flora were additional species including; creeping buttercup (*Ranunculus repens*), garlic mustard, cock's foot grass, ivy, common hogweed (*Heracleum sphondylium*) and hedge woundwort (*Stachys sylvatica*). The hedgerow appears to be more than 30 years in age.





No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow is classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH4



The hedgerow is 103 m long and 1.5 m in height and 1.5 m wide. There is one gap within the hedgerow which is less than 5% of the hedgerow length and there are no associated mature trees. One parallel hedge lies within 15 m of the hedgerow (TR3.HH5). Connections with other hedgerows or woodlands do not score four or more points. The canopy is species rich with dominant hawthorn and smaller amounts of holly, blackthorn, ash and rose (*Rosa* sp.) also present (five woody species). Dog's mercury is the only notable species found within the ground flora, with additional species including; bramble, cow parsley, meadow sweet (*Filipendula ulmaria*), common nettle, bush vetch (*Vicia sepium*) and creeping bent (*Agrostis stolonifera*). The hedgerow is more than 30 years in age.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow is classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH5	
<p>The hedgerow is 106 m long and 1.5 m in height and 1.5 m wide. There is one gap within the hedgerow which forms approximately 5% of the hedgerow length and there are two associated mature trees. A parallel hedge lies within 15 m of the hedgerow (TR3.HH4). Connections with other hedgerows or woodlands do not score four or more points. The canopy is species rich, with abundant hawthorn. Hazel, holly, blackthorn, whitebeam and rose sp. are also present (six woody species). The ground flora has notable species of lady fern, broad buckler fern (<i>Dryopteris dilatata</i>) and herb Robert. Noted within the ground flora were additional species including; foxglove, meadow sweet, bush vetch, common nettle, creeping bent, bramble, black knapweed (<i>Centaurea nigra</i>), cleavers, bracken (<i>Pteridium aquilinum</i>), stitchwort sp., cow parsley and nipplewort. The hedgerow appears to be more than 30 years in age.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow is classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR3.HH6	
<p>The hedgerow is 75 m long and 1.5 m in height and 1.5 m wide. It does not have an associated bank, wall or ditch. There are no gaps within the hedgerow and there are no associated mature trees. Connections with other hedgerows or woodlands do not score four or more points. The canopy is species rich, with dominant hawthorn. Hazel, ash, holly and rose sp. are also present (five woody species). The ground flora has notable species of herb Robert. Also noted within the ground flora were additional species including; bramble, cow parsley, common nettle, common hogweed, cleavers, bracken, stitchwort sp. and crosswort. A parallel hedgerow is present within 15 m (TR3.HH7). The hedgerow appears to be more than 30 years in age.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow is classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR3.HH7	 

The hedgerow is 271 m long and 1 m in height and 1 m wide. There is one gap within the hedgerow which is less than 10% of the hedgerow length and there is one associated mature tree (there are 11 immature trees <20 cm diameter) within the hedgerow). Connections with other hedgerows or woodlands do not score four or more points. Two parallel hedgerows are present within 15 m (TR3.HH6 and TR3.HH8) and there is one connecting hedgerow (TR3.HH41). There is no associated ditch or bank. The canopy is species rich and dominated by hawthorn. Hazel, ash, holly, blackthorn and rose sp. are also present (six woody species). The ground flora has one notable species; herb Robert and other species present include; cow parsley, common hogweed, common nettle, bramble, cleavers, crosswort, ribwort plantain, yarrow (*Achillea millefolium*), meadow vetchling (*Lathyrus pratensis*), bush vetch and red fescue. The hedgerow appears to be more than 30 years in age.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow is classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH8



This hedgerow is 91 m in length, approximately 1.5 m in height and 2 m wide. There are no gaps or ditches along the length. There are no associated supporting banks or walls and there are no mature trees. The canopy is dominated by blackthorn, with hazel and holly also present (three woody species). Schedule 2 ground flora species recorded include male fern, lady fern, pignut (*Conopodium majus*), herb Robert, wood avens and dog's mercury. Additional ground flora species recorded include opposite leaved golden saxifrage (*Chrysosplenium oppositifolium*), cow parsley, bracken, meadow sweet, ivy, coltsfoot (*Tussilago farfara*), common hogweed, black knapweed and cleavers. Connections with other hedgerows or woodlands do not score four or more points, however there is a parallel hedgerow within 15 m (TR3.HH7). The hedgerow does not appear to be less than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH9



This hedgerow is 333 m in length, approximately 1.5 m in height and 2 m wide. There are no gaps in the hedgerow. There is no dry ditch associated with the hedgerow. The hedgerow is supported by a bank/wall. There is one mature tree associated with the hedgerow. The canopy is dominated by beech and with hazel, hawthorn, ash and holly also present (five woody species). Schedule 2 ground flora species present include male fern, lady fern, herb Robert, wood avens, dog's mercury, common polypody fern (*Polypodium vulgare*) and barren strawberry. Additional ground flora species recorded include; bramble, nipplewort, garlic mustard, ivy, cleavers, common nettle, common hogweed, reed canary grass (*Phalaris arundinacea*), meadow grass sp. (*Poa* sp.), meadowsweet, creeping buttercup, foxglove, cow parsley, dandelion (*Taraxacum officinale* agg.), sow thistle (*Sonchus* sp.), broadleaved dock (*Rumex obtusifolius*), hedge woundwort and sneezewort (*Achillea ptarmica*). Connections with other hedgerows or woodlands do not score four or more points, however there is a parallel hedgerow within 15 m (TR3.HH12). There are at least three woodland species within one metre, in any direction, of the outermost edge of the hedgerow. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH10



This hedgerow is 413 m in length, approximately 1.5 m in height and 1.5 m wide. There are no gaps in the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall. There are four mature trees associated with the hedgerow. The canopy is dominated by hazel and blackthorn with hawthorn, ash, rose and holly also present (six woody species). Schedule 2 ground flora species present include; lady fern, herb Robert, wood avens, dog's mercury, broad-leaved helleborine (*Epipactis helleborine*) and barren strawberry. Additional ground flora species recorded include; bramble, garlic mustard, black knapweed, cleavers, common hogweed, false oat grass, sow thistle (*Sonchus* sp.), broadleaved dock, and stitchwort sp.. Connections with other hedgerows or woodlands do not score four or more points, however there are two parallel hedgerows within 15 m (TR3.HH11 and TR3.HH13). There are at least three woodland species within one metre, in any direction, of the outermost edge of the hedgerow. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH11



This hedgerow is 140 m in length, approximately 1.5 m in height and 1.5 m wide. There are no gaps in the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall. There are two mature trees associated with the hedgerow. The canopy comprises a mix of blackthorn, beech, hawthorn, ash, rose and holly with no one species dominating the vegetation (six woody species). Schedule 2 ground flora species present include male fern, herb Robert, wood avens, dog's mercury and common polypody fern. Additional ground flora species recorded include; garlic mustard, common nettle, bramble, ivy, broadleaved dock, cow parsley, creeping buttercup, creeping thistle (*Cirsium arvense*), cleavers, meadowsweet, horsetail sp. and water avens (*Geum rivale*). Connections with other hedgerows or woodlands do not score four or more points, however there is a parallel hedgerow within 15 m (TR3.HH10). There are at least three woodland species within one metre, in any direction, of the outermost edge of the hedgerow. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH12



This hedgerow is 81 m in length, approximately 1.5 m in height and 2 m wide. There are no gaps in the hedgerow. There is no ditch associated with the hedgerow and it is not supported by a bank/wall. There are no mature trees associated with the hedgerow. The canopy is dominated by beech, with blackthorn, large leaved lime (*Tilia platyphyllos*), hawthorn, ash, rose and holly also present (seven woody species). Schedule 2 ground flora species present include dog's mercury and barren strawberry. Additional ground flora species recorded include; black knapweed, cow parsley, common nettle, meadowsweet, ivy, creeping buttercup and bramble. Connections with other hedgerows or woodlands do not score four or more points, however there is a parallel hedgerow within 15 m (TR3.HH9). The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH13



This hedgerow is 178 m in length, approximately 1.5 m in height and 3 m wide. There are no gaps in the hedgerow. There is no ditch associated with the hedgerow and it is not supported by a bank/wall. There are three mature trees associated with the hedgerow. The canopy comprises a mix of species with beech, blackthorn, hawthorn, ash, rose, large-leaved lime, elm sp. (*Ulmus* sp.), oak (*Quercus* sp.) and holly present with no species being dominant (nine woody species). Schedule 2 ground flora species present include lady fern, male fern, dog's mercury, common polypody and barren strawberry. Additional ground flora species recorded include; garlic mustard, cleavers, cow parsley, common nettle, common hogweed, creeping bent, dandelion, ivy, meadowsweet and coltsfoot. Signs of use by mammals, include paths through the hedgerow. Connections with other hedgerows or woodlands do not score four or more points, however there is a parallel hedgerow within 15 m (TR3.HH10). At least three Schedule 2 woodland ground flora species are present within one metre of the outermost edge of the hedgerow. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH14



This hedgerow is 78 m in length, approximately 1 m in height and 0.5 m wide. There are no gaps in the hedgerow. There is no associated ditch and the hedgerow is not supported by a bank/wall. There are no mature trees associated with the hedgerow. The canopy is exclusively dominated by beech (one woody species). Ground flora species recorded include; cock's foot grass, meadow grass sp., common nettle, Yorkshire fog, ivy, and red fescue. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be less than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH15



This hedgerow is 67 m in length, approximately 2 m in height and 2 m wide. There are no gaps in the hedgerow. There is a wet ditch along the western side of the hedgerow. The hedgerow is not supported by a bank/wall. There are two mature trees associated with the hedgerow. The canopy is dominated by hawthorn with hazel, ash, rose, elder and holly present (six woody species). Schedule 2 ground flora species present include male fern, herb Robert, wood avens and wild strawberry (*Fragaria vesca*). Additional ground flora species recorded include; bramble, cock's foot grass, meadow grass sp., common nettle, speedwell sp. (*Veronica* sp.), Yorkshire fog, ivy, foxglove, horsetail sp. and red fescue. Connections with other hedgerows or woodlands do not score four or more points. At least three woodland ground flora species are present within one metre of the outermost edge of the hedgerow. The hedgerow appears to be more than 30 years old and is adjacent to a footpath.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH16



This hedgerow is 30 m in length, approximately 3 m in height and 2 m wide. There is one gap, which comprises more than 10% of the total length of the hedgerow. There is no associated ditch. The hedgerow is supported by a bank/wall along at least half of its length. There are two mature trees associated with the hedgerow. The canopy is dominated by hawthorn with rose, elder and holly present (four woody species). Schedule 2 ground flora species present include male fern and wild strawberry. Additional ground flora species recorded include; ground ivy and ivy. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.




No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH17



This hedgerow is 229 m in length, approximately 1 m in height and 1 m wide. There are no gaps within the hedgerow. There is no associated ditch. The hedgerow is supported by a bank/wall along at least half of its length. There is one mature tree associated with the hedgerow. The canopy is dominated by hawthorn with hazel, ash, blackthorn, rose, elder and holly present (seven woody species). Schedule 2 ground flora species present include male fern and dog's mercury. Additional ground flora species recorded include common nettle, cleavers and common hogweed. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH18	
	<p>This hedgerow is 55 m in length, approximately 3 m in height and 1 m wide. There are no gaps within the hedgerow. There is no associated ditch. The hedgerow is supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated exclusively by beech (one woody species). There are no Schedule 2 ground flora species present. Additional ground flora species recorded include ivy. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH19	
	<p>This hedgerow is 260 m in length, approximately 2 m in height and 2 m wide. There is one gap within the hedgerow that is less than 10% of the total length. There is an associated wet ditch, located to the north of the hedgerow. The hedgerow is supported by a bank/wall along at least half of its length. There are three mature trees associated with the hedgerow. The canopy is dominated by hazel and hawthorn with ash, willow (<i>Salix</i> sp.), rowan (<i>Sorbus aucuparia</i>) and holly present (six woody species). Schedule 2 ground flora species present include lady fern, male fern, common polypody and dog's mercury. Additional ground flora species recorded include; bramble, common nettle, foxglove, cow parsley, vetch sp., cleavers and creeping buttercup. Connections with other hedgerows or woodlands do not score four or more points. There are two parallel hedgerows within 15 m (TR3.HH20 and TR3.HH22). The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH20	

This hedgerow is 242 m in length, approximately 1.5 m in height and 1 m wide. There are four gaps within the hedgerow that aggregate to less than 10% of the total length. There is no associated wet ditch and the hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by willow and alder (*Alnus glutinosa*), with hazel, hawthorn, blackthorn, rose and holly present (seven woody species). Schedule 2 ground flora species present include lady fern and male fern. Additional ground flora species recorded include; bramble, common nettle, foxglove, cow parsley, cleavers, creeping buttercup, meadow vetchling, germander speedwell (*Veronica chamaedrys*), red campion, bracken and bush vetch. There is a parallel hedgerow within 15 m. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow is parallel to two others (TR3.HH19 and TR3.HH21). The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH21



This hedgerow is 93 m in length, approximately 1.5 m in height and 1 m wide. There are no gaps within the hedgerow that aggregate to less than 10% of the total length. There is no associated wet ditch and the hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by blackthorn, with hazel and oak present (three woody species). Schedule 2 ground flora species present include lady fern and male fern. Additional ground flora species recorded include; bramble, common nettle, foxglove, cow parsley, vetch sp., creeping buttercup, red campion, bracken, hedgerow crane's bill (*Geranium pyrenaicum*) and sharp flowered rush (*Juncus acutiflorus*). There is a parallel hedgerow within 15 m (TR3.HH20). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.



No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.



TR3.H21a

No Photo

This hedgerow is 94 m in length, approximately 1.5 m in height and 1 m wide. There are no gaps within the hedgerow that aggregate to less than 10% of the total length. There is no associated wet ditch and the hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow, however, three individual immature conifer trees are present in the hedgerow. The canopy is dominated by blackthorn, with hawthorn and elder also present (three woody species). Schedule 2 ground flora species present include lady fern and male fern. Additional ground flora species recorded include; bramble, common nettle, cow parsley, vetch sp., fox glove, bracken and hedgerow crane's bill. There is a parallel hedgerow within 15 m (TR3.HH19). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH22	
	<p>This hedgerow is 96 m in length, approximately 1.5 m in height and 1.5 m wide. There are no gaps within the hedgerow. There is no associated wet ditch and the hedgerow is not supported by a bank/wall along at least half of its length. There are one mature tree associated with the hedgerow. The canopy is dominated by blackthorn, with hazel, hawthorn, holly, rose sp. and elder present (six woody species). Schedule 2 ground flora species present include dog's mercury. Additional ground flora species recorded include; bramble, common nettle, cow parsley, creeping buttercup, common hogweed and cleavers. There is a parallel hedgerow within 15 m (TR3.HH23). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH23	
	<p>This hedgerow is 459 m in length, approximately 1.5 m in height and 1 m wide. There are no gaps within the hedgerow. There is no associated wet ditch and the hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by blackthorn and hawthorn, with hazel, ash, willow sp., rose sp. and elder present (seven woody species). Schedule 2 ground flora species present include; wood avens, dog's mercury and common polypody. Additional ground flora species recorded include; bramble, common nettle, cow parsley, creeping buttercup, common hogweed, cleavers, creeping thistle, honeysuckle (<i>Lonicera</i> sp.) and willowherb sp. There are parallel hedgerows within 15 m (TR3.HH24) and it connects to one other hedgerow (not surveyed). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>

TR3.HH24	
<p>This hedgerow is 368 m in length, approximately 1.5 m in height and 1 m wide. There are no gaps within the hedgerow. There is no associated wet ditch and the hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by blackthorn, with hazel, hawthorn, holly, rose sp. and elder present (six woody species). Schedule 2 ground flora species present include; male fern, wood avens and dog's mercury. Additional ground flora species recorded include; bramble, common nettle, cow parsley, creeping buttercup, common hogweed, cleavers, creeping thistle, hedge woundwort, ivy, ground ivy and garlic mustard. There is a parallel hedgerow within 15 m (TR3.HH23) and this hedgerow connects to two other hedgerows (both not surveyed). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR3.HH25	
<p>This hedgerow is 93 m in length, approximately 1.5 m in height and 1 m wide. There are no gaps within the hedgerow. There is no associated wet ditch and the hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by blackthorn, with hazel, hawthorn, holly and rose sp. present (five woody species). Schedule 2 ground flora species present include; male fern, herb Robert, wood avens, dog's mercury and common polypody. Additional ground flora species recorded include; bramble, common nettle, cow parsley, cleavers, hedge woundwort, ivy, garlic mustard, stitchwort sp., foxglove and raspberry (<i>Rubus idaeus</i>). There is a parallel hedgerow within 15 m (TR3.HH26). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR3.HH26	No photo.
<p>This hedgerow is 90 m in length, approximately 1 m in height and 1 m wide. There are no gaps within the hedgerow and there is no associated wet ditch. The hedgerow is supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by blackthorn, with hazel, hawthorn and holly present (four woody species). Schedule 2 ground flora species present include; lady fern, male fern, herb Robert, wood avens, dog's mercury and common polypody. Additional ground flora species recorded include; common mouse ear (<i>Cerastium fontanum</i>), cow parsley, cleavers, hedge woundwort, ivy, garlic mustard, stitchwort sp., foxglove, raspberry, sheep sorrel (<i>Rumex acetosella</i>), barren strawberry, common nettle and bush vetch. There is a parallel hedgerow within 15 m (TR3.HH25). Connections with other hedgerows or woodlands do not score four or more points.</p>	

The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH27



This hedgerow is 250 m in length, approximately 1.5 m in height and 1.5 m wide. There are no gaps within the hedgerow and there is no associated wet ditch. The hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy has abundant blackthorn, hawthorn and holly, with hazel, elder and oak also present (six woody species). Schedule 2 ground flora species present include; lady fern, wood avens and dog's mercury. Additional ground flora species recorded include; bramble, ivy, cleavers, common nettle and hedge woundwort. There is a parallel hedgerow within 15 m (TR3.HH31) and there are at least three woodland ground flora species within 1 m of the outermost edge of the hedgerow. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH28



This hedgerow is 160 m in length, approximately 1 m in height and 2 m wide. There are no gaps within the hedgerow and there is no associated wet ditch. The hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by hawthorn, with hazel, blackthorn, willow, elder and holly present (six woody species). Schedule 2 ground flora species present include; lady fern and dog's mercury. Additional ground flora species recorded include; bramble, ivy, cleavers, common nettle, ground ivy and hedge bindweed (*Calystegia sepium*). There is a parallel hedgerow within 15 m (TR3.HH30) and it connects to one other hedgerow (TR3.HH29). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.




No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH29



This hedgerow is 100 m in length, approximately 2 m in height and 2 m wide. There are no gaps within the hedgerow and there is an associated wet ditch (watercourse). The hedgerow is supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by hawthorn, with blackthorn and elder present (three woody species). Schedule 2 ground flora species present include; lady fern and dog's mercury. Additional ground flora species recorded include; bramble, ivy, cleavers, common nettle, garlic mustard and red campion. There is no parallel hedgerow within 15 m although the hedgerow does connect with one other (TR3.HH28). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH30	
	<p>This hedgerow is 56 m in length, approximately 2 m in height and 2 m wide. There are no gaps within the hedgerow and there is no associated wet ditch. The hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by blackthorn, with hawthorn, rose, elder and elm sp. present (five woody species). Schedule 2 ground flora species present include; lady fern, wood avens and dog's mercury. Additional ground flora species recorded include; bramble, ivy, cleavers, common nettle and garlic mustard. There is a parallel hedgerow within 15 m (TR3.HH28). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH31	
	<p>This hedgerow is 166 m in length, approximately 1.5 m in height and 1 m wide. The gaps within the hedgerow aggregate to less than 10% of the total length and there is no associated wet ditch. The hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by hawthorn, with elder also present (two woody species). Schedule 2 ground flora species present include; lady fern and wood avens. Additional ground flora species recorded include; bramble, ivy, cleavers, common nettle, cow parsley and garlic mustard. There is a parallel hedgerow within 15 m (TR3.HH27). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH32	

This hedgerow is 91 m in length, approximately 1.5 m in height and 1 m wide. The gaps within the hedgerow aggregate to less than 10% of the total length and there is no associated wet ditch. The hedgerow is supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is exclusively dominated by hawthorn (one woody species). Schedule 2 ground flora species present include; lady fern. Additional ground flora species recorded include; bramble, ivy, cleavers, common nettle, and garlic mustard. There is a parallel hedgerow within 15 m (TR3.HH33) and this hedgerow connects with one other (TR3.HH34). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH33



This hedgerow is 93 m in length, approximately 2.5 m in height and 1 m wide. The gaps within the hedgerow aggregate to less than 10% of the total length and there is no associated wet ditch. The hedgerow is supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by hawthorn and blackthorn, with rose sp. also present (three woody species). Schedule 2 ground flora species present include; lady fern. Additional ground flora species recorded include; bramble, ivy, cleavers and red campion. There is a parallel hedgerow within 15 m (TR3.HH32) and this hedgerow connects with one other (TR3.HH34). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.




No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH34



This hedgerow is 229 m in length, approximately 2.5 m in height and 1 m wide. The gaps within the hedgerow aggregate to less than 10% of the total length and there is no associated wet ditch. The hedgerow is supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by blackthorn, with hawthorn, rose sp. and elder also present (four woody species). Schedule 2 ground flora species present include; lady fern and wood avens. Additional ground flora species recorded include; bramble, cleavers, common nettle, red campion, garlic mustard, hedge woundwort, ground ivy and common hogweed. There are two parallel hedgerows within 15 m (TR3.HH35 and TR3.HH38) and this hedgerow connects with two others (TR3.HH32 and TR3.HH33). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH35	
	<p>This hedgerow is 98 m in length, approximately 1.5 m in height and 1 m wide. The gaps within the hedgerow aggregate to less than 10% of the total length and there is no associated wet ditch. The hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by blackthorn with elder also present (two woody species). Schedule 2 ground flora species present include; lady fern. Additional ground flora species recorded include; common nettle, red campion, garlic mustard, hedge woundwort, ground ivy and common hogweed. There is a parallel hedgerow within 15 m (TR3.HH34). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH36	
	<p>This hedgerow is 35 m in length, approximately 1.5 m in height and 1 m wide. The gaps within the hedgerow aggregate to less than 10% of the total length and there is no associated wet ditch. The hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by hawthorn with blackthorn, holly, rose and elder also present (five woody species). No Schedule 2 ground flora species were recorded. Additional ground flora species recorded include; common nettle, garlic mustard and common hogweed. There is a parallel hedgerow within 15 m (TR3.HH37). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH37	

This hedgerow is 31 m in length, approximately 1 m in height and 1 m wide. The gaps within the hedgerow aggregate to less than 10% of the total length and there is no associated wet ditch. The hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by blackthorn with hawthorn, and elder also present (three woody species). Schedule 2 ground flora species present include; lady fern and wood avens. Additional ground flora species recorded include; ground ivy, cow parsley, cleavers, common nettle, ivy, common hogweed and ground elder. There is a parallel hedgerow within 15 m (TR3.HH36). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH38

No photo.

This hedgerow is 46 m in length, approximately 1.5 m in height and 1 m wide. The gaps within the hedgerow aggregate to less than 10% of the total length and there is no associated wet ditch. The hedgerow is not supported by a bank/wall along at least half of its length. There are no mature trees associated with the hedgerow. The canopy is dominated by blackthorn with hawthorn, and holly also present (three woody species). Schedule 2 ground flora species present include; dog's mercury and wood avens. Other ground flora species recorded include; common nettle, ground ivy, common hogweed, cow parsley, hedge woundwort, cleavers and creeping buttercup. There is a parallel hedgerow within 15 m (TR3.HH34). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.



No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.




TR3.HH39



This hedgerow is 116 m in length, approximately 1.5 m in height and 1 m wide. The gaps within the hedgerow aggregate to less than 10% of the total length and there is no associated wet ditch. The hedgerow is supported by a bank/wall along at least half of its length. There are three mature trees associated with the hedgerow. The canopy is dominated by hawthorn with blackthorn, hazel and holly also present (four woody species). No Schedule 2 ground flora species were recorded. Other ground flora species recorded include; common nettle, ground ivy, common hogweed, cow parsley, hedge woundwort, cleavers and creeping buttercup. There is no parallel hedgerow within 15 m. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be less than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH40	
<p>This hedgerow is 95 m in length, approximately 2 m in height and 1 m wide. There are no gaps within the hedgerow and there are no mature trees associated with the hedgerow. A wet ditch is associated with the hedgerow, running along the southern side of the hedgerow. The hedgerow is not supported by a bank/wall along at least half of its length. The canopy is dominated by blackthorn with hawthorn, hazel and holly also present (four woody species). No Schedule 2 ground flora species were recorded. Other ground flora species recorded include; common nettle, common hogweed, cow parsley, cleavers and creeping buttercup. There is no parallel hedgerow within 15 m. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be less than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR3.HH41	No photo.
<p>This hedgerow is 66 m in length, approximately 2 m in height and 1.5 m wide. There are no gaps within the hedgerow and there are no mature trees associated with the hedgerow. A wet ditch is associated with the hedgerow, running along the southern side of the hedgerow. The hedgerow is not supported by a bank/wall along at least half of its length. The canopy is dominated by blackthorn with hawthorn, hazel, elder and holly also present (five woody species). Schedule 2 ground flora species present include lady fern, herb Robert and wood avens. Other ground flora species recorded include; common nettle, bramble, cow parsley, cleavers and creeping buttercup. There is no parallel hedgerow within 15 m although the hedgerow connects with one other (TR3.HH7). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be less than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR3.HH42	
<p>This hedgerow is 213 m in length, approximately 1.5 m in height and 1 m wide. There is one gap within the hedgerow, which does not exceed 10% of the length of the hedgerow and there is one mature tree associated with the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall along at least half of its length. The canopy has abundant hawthorn with blackthorn, hazel, elder and holly also present (five woody species). Schedule 2 ground flora species present include lady fern, herb Robert and wood avens. Other ground flora species recorded include; common nettle, bramble, cow parsley, cleavers and creeping buttercup. There is no parallel hedgerow within 15 m. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	

TR3.HH43	
	<p>This hedgerow is 56 m in length, approximately 7 m in height and 1.5 m wide. There are no gaps associated with the hedgerow, and there are no mature trees or ditches associated with the hedgerow. The hedgerow is not supported by a bank/wall along at least half of its length. The canopy is exclusively comprised of beech (one woody species). Schedule 2 ground flora species present include male fern, wood avens and barren strawberry. Other ground flora species recorded include; bramble, ivy and creeping buttercup. There is a parallel hedgerow within 15 m (TR3.HH44). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH44	
	<p>This hedgerow is 49 m in length, approximately 1.5 m in height and 1 m wide. There are two gaps within the hedgerow, which exceeds 10% of the length of the hedgerow and there are no mature trees associated with the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall along at least half of its length. The canopy has abundant hawthorn with blackthorn, hazel, ash, elder and rose also present (six woody species). Schedule 2 ground flora species were recorded as being absent. Other ground flora species recorded include; bramble, ivy, garlic mustard and cleavers. There is a parallel hedgerow within 15 m (TR3.HH43). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH45	

This hedgerow is 106 m in length, approximately 3 m in height and 2 m wide. There are no gaps within the hedgerow, and there are no mature trees associated with the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall along at least half of its length. The canopy has abundant hawthorn and blackthorn with hazel, beech, rose, elder, elm and large-leaved lime also present (eight woody species). Schedule 2 ground flora species recorded as being present include; dog's mercury, lady fern and male fern. Other ground flora species recorded include; foxglove, red campion, hedge woundwort, bramble, creeping buttercup and soft rush (*Juncus effusus*). An old stone boundary wall runs adjacent to hedgerow, which has been recently laid. There is no parallel hedgerow within 15 m. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH46



This hedgerow is 106 m in length, approximately 1.5 m in height and 3 m wide. There are no gaps within the hedgerow, and there is one mature tree associated with the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall along at least half of its length. The canopy has abundant hawthorn and blackthorn, with hazel, beech, rose, large-leaved lime, elm and elder also present (eight woody species). Schedule 2 ground flora species were recorded as being absent. Other ground flora species recorded include; foxglove, red campion, hedge woundwort, bramble, creeping buttercup and soft rush. The hedgerow has been previously laid and has an adjacent old stone boundary wall. There is no parallel hedgerow within 15 m. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.



No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**



TR3.HH47

No photo.



This hedgerow is 29 m in length, approximately 1.5 m in height and 3 m wide. There are no gaps within the hedgerow, and there is one mature tree associated with the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall along at least half of its length. The canopy is dominated by blackthorn with elder also present (two woody species). Schedule 2 ground flora species were recorded as being absent. Other ground flora species recorded include; garlic mustard, foxglove, common nettle and creeping buttercup. There is no parallel hedgerow within 15 m. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.



No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.




TR3.HH48	
	<p>This hedgerow is 82 m in length, approximately 2 m in height and 1.5 m wide. There are no gaps within the hedgerow, and there is one mature tree associated with the hedgerow. There is a no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall along at least half of its length. The canopy is dominated by ash with hawthorn, blackthorn, hazel, holly and elm also present (six woody species). Schedule 2 ground flora species recorded as being present include; lady fern, broad buckler-fern, herb Robert, wood avens and dog's mercury. Other ground flora species recorded include; meadow sweet, ivy, garlic mustard, creeping cinquefoil (<i>Potentilla reptans</i>), cow parsley and cleavers. There is a parallel hedgerow within 15 m (TR3.HH49). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH49	
	<p>This hedgerow is 87 m in length, approximately 1.5 m in height and 1 m wide. There are no gaps within the hedgerow, and there is one mature tree associated with the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall along at least half of its length. The canopy has abundant ash with hawthorn, hazel, holly and elder also present (five woody species). Schedule 2 ground flora species recorded as being present include; male fern, wood avens and dog's mercury. Other ground flora species recorded include; ivy and garlic mustard. There is a parallel hedgerow within 15 m (TR3.HH48). Connections with other hedgerows or woodlands do not score four or more points. The hedgerow appears to be more than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
<p><i>The following hedgerow descriptions are from "TR3 Wray Compound Hedgerow Survey Report V1" (Bowland Ecology, 2020).</i></p>	

TR3.WH1	
	<p>This roadside hedge is approximately 500 m in length, 2 m wide and 2-3 m tall. There are no associated trees or ditch, and the hedgerow is situated on a bank. There is one gap in the hedgerow which accounts for <5% of the total length. Outside the survey area there are connections with two other hedgerows (scoring two connection points), and there are two parallel hedgerows (TR3.WH3 and TR3.WH4) within 15 m.</p> <p>The canopy is overall species-rich and includes dominant blackthorn, with additional hazel, hawthorn, ash, elder and sessile oak (<i>Quercus petraea</i>) (total six woody species). Schedule 2 ground flora recorded along the length of the hedgerow includes lady fern, dog's mercury and wood avens. Other ground flora recorded includes; cleavers, perennial rye grass (<i>Lolium perenne</i>), Yorkshire fog, garlic mustard, red campion, bramble, ivy and cock's foot grass. The hedgerow is established and mature and therefore obviously more than 30 years in age. It has previously been laid and recently cut / maintained.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.WH2	
	<p>This hedgerow is along a field boundary, is approximately 60 m in length, 3 m tall and 2 m wide. There are no associated trees or ditch, and the hedgerow is situated on a tall bank which slopes steeply down towards the north. There are no gaps along the hedgerow length. There are no connections to other hedgerows, ponds or woodland, and there are no parallel hedgerows within 15 m.</p> <p>The canopy comprises dominant blackthorn and rare hawthorn (total two woody species). Schedule 2 ground flora species recorded include dog's mercury and lady fern. Additional ground flora species recorded include; red campion, common hogweed, cock's foot grass, common nettle and meadow grass sp.. There were signs of use of the hedgerow by nesting birds and rabbit (<i>Oryctolagus cuniculus</i>). The hedgerow is established and mature and therefore obviously more than 30 years in age. Some parts of the hedgerow are growing out and becoming "leggy".</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>

TR3.WH3	
	<p>This roadside hedgerow is approximately 310 m in length, 3 m tall and 2 to 3 m wide. There are no associated trees or ditch, and the hedgerow is situated on a bank. There are no gaps within the hedgerow. Outside the survey area there are connections to three other hedgerows. This hedgerow is parallel within 15 m of two others (TR3.WH1 and TR3.WH4).</p> <p>The canopy is dominated by blackthorn, with additional species recorded including hazel, hawthorn, ash, rose species and elder (total six woody species). Schedule 2 ground flora species recorded include dog's mercury, male fern and wood avens. Additional ground flora species recorded include; cock's foot grass, common nettle, cleavers, meadow grass, foxglove, ivy, bracken, creeping thistle, garlic mustard, bramble and creeping buttercup. It has previously been laid and recently cut / maintained.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.WH4	
	<p>This roadside hedgerow is approximately 526 m in length, 3 m in height and 2 to 3 m wide. There are two gaps within the hedgerow accounting for <5% of the length. There are no associated trees or ditch, and the hedgerow is situated on a bank. There are connections to two other hedgerows (TR3.WH6 and TR3.WH7), and it is also parallel within 15 m to two hedgerows (TR3.WH1 and TR3.WH3).</p> <p>The canopy is dominated by blackthorn, with additional species recorded including hazel, hawthorn, rose species and elder (total five woody species). Schedule 2 ground flora species recorded include dog's mercury, herb Robert, male fern, lady fern and wood avens. Additional ground flora species include; common nettle, ivy, garlic mustard, creeping thistle, common mouse ear, common hogweed, yarrow, cleavers, red campion, bracken and cock's foot grass. Sections of the hedge have become outgrown and "leggy". It has been previously laid, is fenced on one side and has also been recently cut / maintained. The hedgerow is established and mature and therefore obviously more than 30 years in age.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>

TR3.WH5	
	<p>This hedgerow delineates a field boundary and is approximately 100 m in length, 3 m in height and 2 m wide. There are no gaps along the length of the hedgerow. There are no associated trees or a ditch, and the hedgerow is not situated on a bank. This hedgerow does not connect to and is not parallel to any other hedgerows.</p> <p>The canopy is dominated by blackthorn, with additional species recorded including hazel, hawthorn, ash and willow (total five woody species). Schedule 2 ground flora species were absent. Other ground flora species recorded include cock's foot grass, common nettle, meadow grass and foxglove. The hedgerow has been previously laid, and recently felled. It is established and mature and therefore obviously more than 30 years in age.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997, however, it is possible that additional Schedule 2 ground flora species may be present during the optimal time period and this may incur a change in classification to 'Important'.</p>
TR3.WH6	
	<p>This hedgerow delineates a field boundary and is approximately 110 m in length, 2 m in height and 2 m wide. There are two gaps along the length of the hedgerow, accounting for approximately 10% of the length. There are no associated trees or a ditch, and the hedgerow is not situated on a bank. This hedgerow connects to one other hedgerow (TR3.WH4).</p> <p>The canopy is dominated by hawthorn, with additional species recorded including blackthorn (total two woody species). Schedule 2 ground flora species were absent. Other ground flora species recorded include; cock's foot grass, common nettle, meadow grass, bittercress species (<i>Cardamine</i> sp.) and common mouse ear. The hedgerow is tall and "leggy" and is fenced on both sides. There are signs of use by nesting birds. It appears to be less than 30 years old.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>

TR3.WH7	
<p>This hedgerow follows a field boundary and is approximately 140 m in length, 2 m in height and 2 m wide. There are two gaps along the length of the hedgerow, accounting for approximately 10% of the length. There are no associated trees or a ditch. The hedgerow is situated on a bank. This hedgerow connects to one other hedgerow (TR3.WH4).</p> <p>The canopy is dominated by elder, with additional species recorded including blackthorn, rose species and hazel (total four woody species). Schedule 2 ground flora species present include lady fern and male fern. Other ground flora species recorded include; bramble, common nettle, meadow grass, red campion, cock's foot grass, cleavers and foxglove. The hedgerow has previously been laid, has recently been cut and is fenced. It is established and mature and therefore obviously more than 30 years in age.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>The following hedgerow descriptions are from "TR3 Wray Car Park Hedgerow Survey Report V1" (Bowland Ecology, 2020a)</p>	
TR3.WCPH1	
<p>The hedgerow is approximately 30 m long and 1 m in height and 1 m wide. There are no gaps within the hedgerow and no associated mature trees. Connections with other hedgerows or woodlands do not score four or more points. There is no associated ditch with the hedgerow, however, it is supported by a wall. The hedgerow is parallel with one other hedgerow; TR3.WCPH2). The canopy is species-poor, being dominated by sycamore, with smaller amounts of holly and elder (two qualifying woody species). The ground flora has notable species of dog's mercury. Also noted within the ground flora were additional species including; ivy and common hogweed. The hedgerow appears to be more than 30 years in age.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	

TR3.WCPH2	
<p>The hedgerow is approximately 75 m long and 2 m in height and 2 m wide; it is supported on a wall. There are no gaps within the hedgerow and no associated mature trees. Connections with other hedgerows or woodlands do not score four or more points. The hedgerow is parallel with one other hedgerow; TR3.WCPH1). There is no associated ditch with the hedgerow. The canopy is species rich, being dominated by blackthorn, with smaller amounts of hawthorn, hazel, alder, ash and elder (six woody species). The ground flora has notable species of dog's mercury. Also noted within the ground flora were additional species including; ivy and bramble. The hedgerow appears to be more than 30 years in age.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow is classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR3.WCPH3	
<p>The hedgerow is 90 m long and 1 m in height and 1 m wide. It is not supported upon a bank or wall. There is one large gap within the hedgerow, which comprises more than 15 % of the total length and there are no associated mature trees. Connections with other hedgerows or woodlands do not score four or more points. There is no associated wet ditch. The canopy is species-poor, with dominant hawthorn, abundant blackthorn and occasional elder (three woody species). The ground flora has notable species of dog's mercury and wood avens. Also noted within the ground flora were additional species including; bramble, raspberry, ivy, common nettle and black bryony sp. (<i>Dioscorea communis</i>). The hedgerow does not appear to be more than 30 years in age.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow is not classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p><i>The following hedgerow descriptions are from "TR3 Hedgerow Survey Report V2" (Bowland Ecology, 2020b).</i></p>	
TR3.H1	

This hedgerow is 55 m in length and 1 m wide and located along a public road. The northern end of the hedgerow is located on top of a stone wall and appears to form the boundary of a residential dwelling - the height of the hedgerow above the top of the wall is approximately 1.5 m. The southern end of the hedgerow is located on a bank. There are no connections with other hedgerows. It is fenced from the adjacent field and appears to have been recently trimmed/flailed. The hedgerow is established and mature and therefore obviously more than 30 years in age.

The hedgerow has one associated sycamore mature tree, and no gaps. There is no associated ditch. The canopy comprises frequent hazel and hawthorn with occasional holly and more rarely yew (*Taxus baccata*) (four canopy species). There are several notable (Schedule 2) ground flora species as follows: lords-and-ladies (*Arum maculatum*), dog's mercury, hart's tongue and common polypody. Other ground flora noted includes ivy, cleavers, red campion, common chickweed (*Stellaria media*), common nettle, lesser celandine (*Ranunculus ficaria*), hedge mustard (*Alliaria petiolata*) and bramble. No Wildlife & Countryside Act protected species have been identified to be present.

The hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997, however, as it appears to form the boundary of a residential dwelling the Regulations may not apply in this case.

TR3.H2



This roadside hedgerow is 30 m in length and 1 m in height. It is 1.5 m wide and has one associated mature tree (sycamore). There is no associated ditch and no gaps but one connection to another hedgerow. There is an associated hedge bank. The hedgerow is of significant age (not less than 30 years).

The canopy comprises holly, hazel, hawthorn and elder (four canopy species). Notable (Schedule 2) ground flora species are frequent and comprise: lords-and-ladies, broad buckler fern, male-fern, herb Robert, dog's mercury, hart's tongue, barren strawberry and primrose (*Primula vulgaris*). Other ground flora present includes ivy, cleavers, red campion, common chickweed, common nettle, lesser celandine, hedge mustard, bramble, meadowsweet, greater stitchwort (*Stellaria holostea*), bush vetch and cow parsley. No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.H3



This roadside hedgerow is 90 m in length, 1.5 m wide and 2.5 m in height. It is a roadside hedgerow with no gaps and one associated mature tree (sycamore). There is no associated ditch but an associated hedge bank. There is a connection to one other hedgerow. The hedgerow is mature and established has been historically laid and is over 30 years in age.

The canopy is dominated by holly with hazel, ash and rose, with smaller amounts of blackthorn (five canopy species). Notable (Schedule 2) ground flora species are lords-and-ladies, dog's mercury and barren strawberry. Other ground flora present at the time of survey was ivy, foxglove, cow parsley, meadowsweet, cleavers, dock (*Rumex* sp.), creeping buttercup, soft rush, common hogweed and dandelion. No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.H4



A roadside hedgerow 145 m in length, 1 m in height and 1.5 m wide. It has no gaps, no ditch and five associated mature trees (sycamore). There are connections to two other hedgerows. It has been historically laid and is more than 30 years in age. It has been recently flailed and is fenced from the adjacent sheep grazed field. There is an associated hedge bank on the roadside.

The canopy comprises hawthorn, holly and elder, with additional blackthorn more rarely (four canopy species). The notable (Schedule 2) ground flora species are lords-and-ladies, dog's mercury and primrose. Other climbers and ground flora noted comprises honeysuckle, cleavers, rosebay willowherb (*Chamerion angustifolium*), common nettle, ivy, bracken and abundant bramble. No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.



TR3.H5





A roadside hedgerow 100 m in length, 2 m in height and 2 m wide. There are no gaps or ditches and no associated mature trees. There is a connection to one other hedgerow. It has been recently trimmed/flailed and is a mature established hedgerow which is more than 30 years old. It is fenced from the adjacent sheep grazed field to the west. There is a small associated hedge bank.

The canopy is dominated by holly with hawthorn and more rarely hazel and elder (four canopy species). The notable (Schedule 2) ground flora species are lords-and-ladies, broad buckler fern, male-fern, common polypody and barren strawberry. Other climbers and ground flora noted include honeysuckle, cleavers, greater stitchwort, bracken, foxglove, bush vetch and garlic mustard. No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.H7	
	<p>A roadside hedgerow which is 170 m in length, 1.5 m in height and 1.5 m wide. There are a small number of gaps totalling around 2% of the total length of the hedgerow, and no associated mature trees or ditches. The hedgerow has been historically laid in some sections and is more than 30 years old. It has been recently flailed/trimmed. There are no connected hedgerows but it connects to a block of broadleaved woodland.</p> <p>The canopy is composed of dominant hazel and abundant hawthorn and ash with smaller amounts of holly, blackthorn and gooseberry (<i>Ribes uva-crispa</i>; six canopy species). Notable (Schedule 2) ground flora species are relatively few and comprise lords-and-ladies and dog's mercury. Additional ground flora species are red campion, cleavers, common nettle, bramble, cow parsley, ivy, honeysuckle and garlic mustard. No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.H8	
	<p>This roadside hedgerow is 450 m in length, 2 m in height and 1.5 m wide. There is one gap of approximately 10 m which is less than 5% of the overall length of the hedgerow. There are three associated mature trees (sycamore). There is no associated ditch but the hedgerow has a bank of approximately 1 m for much of its length. There is one connection to another hedgerow. It is fenced from the adjacent sheep grazed field and has been historically laid (more than 30 years old).</p> <p>The canopy is mixed and has no clear dominant with the following species noted: hazel, hawthorn, ash, holly, blackthorn, rose species, elder, rowan and gorse (<i>Ulex europaeus</i>; nine canopy species). Notable (Schedule 2) ground flora species are abundant and comprise lords-and-ladies, broad buckler fern, male-fern, wood avens, wild strawberry, herb Robert, common polypody and primrose. Other climber and ground flora species noted include greater stitchwort, honeysuckle (abundant), foxglove, bush vetch, cleavers and dock species. No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>

TR3.H9	
<p>This roadside hedgerow is 380 m in length, 1.5 m in height and 2 m wide. There is only one small gap which is less than 1% of the total length of the hedgerow. There is no associated ditch or hedge bank. There are nine associated mature trees (predominantly oak). It has been recently trimmed/flailed and is more than 30 years old.</p> <p>The canopy is extremely mixed and comprises abundant holly and hawthorn with hazel, ash, blackthorn, pedunculate oak (<i>Quercus robur</i>), rose species, gooseberry, elder, and rowan (ten canopy species). Notable (Schedule 2) ground flora species are also abundant and diverse and comprise lords-and-ladies, male-fern, herb Robert, wild strawberry, wood avens, dog's mercury, hart's tongue, common polypody, barren strawberry, wood sage (<i>Teucrium scorodonia</i>) and common dog violet (<i>Viola riviniana</i>). Other climbers and ground flora are honeysuckle, cleavers, garlic mustard, ivy, common nettle, cow parsley, greater stitchwort, lesser celandine, meadowsweet, bush vetch, red campion and creeping buttercup. No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR3.H10	
<p>A roadside hedgerow 800 m in length, 1.5 in height and 1.5 wide. It has recently been flailed/trimmed and is a mature established hedgerow more than 30 years old. There are four gaps, totalling no more than 1% of the overall hedgerow length. There is one associated mature tree (sycamore), no ditches and no hedge bank. There is a connection to one other hedgerow (across a road gap).</p> <p>The canopy is extremely diverse with no clear dominant species with abundant holly and hawthorn and additional hazel, ash, blackthorn, rose species, willow (<i>Salix</i> sp.), elder and rowan (nine canopy species). Notable (Schedule 2) ground flora species are as follows: ramsons (<i>Allium ursinum</i>), broad buckler fern, male-fern, wood avens, barren strawberry, primrose and wood sage. Other climbers and ground flora species noted include greater stitchwort, lesser celandine, ground elder, bush vetch, common bird's-foot trefoil (<i>Lotus corniculatus</i>), snowdrop (<i>Galanthus nivalis</i>), common knapweed (<i>Centaurea nigra</i>), red campion, yarrow and hedge woundwort. No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	

TR3.H11	
	<p>A roadside hedgerow 700 m in length, 1.5 m in height and 1.5 m wide. There is one associated mature tree (ash), no associated ditch or hedge bank. There are three connections with other hedgerows. The hedgerow has been recently trimmed/flailed and is more than 30 years old.</p> <p>The canopy is diverse and mixed with dominant holly. Other canopy species are: hazel, hawthorn, ash, blackthorn, rose species, willow species, elder, rowan and gorse (ten canopy species). Notable (Schedule 2) ground flora species are lords-and-ladies, broad buckler fern, male-fern and wood avens. Additional climbers and ground flora species are black bryony (<i>Tamus communis</i>), greater stitchwort, honeysuckle, hedge woundwort with significant bracken cover. No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
<h3>5 Hedgerow Summary</h3>	
<p>Overall, hedgerows within section TR3 Highways are frequent in occurrence along the roadside field boundaries, as field boundaries away from roads and along residential property boundaries. Thirty-nine of the seventy hedgerows surveyed are classified as important; TR3.HH1, TR3.HH3-HH7, TR3.HH9-HH13, TR3.HH15-HH17, TR3.HH19-HH20, TR3.HH22-HH28, TR3.HH34, TR3.HH36, TR3.HH45-HH46, TR3.HH48-HH49, TR3.WH3-4, TR3.WCPH2, TR3.H1-H3, TR3.H5, TR3.H8-H11. Five hedgerows are obviously less than 30 years in age (TR3.HH14, TR3.HH39, TR3.HH40, TR3.HH41 and TR3.WH6) and are therefore not classified as important.</p> <p>Most hedgerows are managed (cut) and show signs of previously being laid, although some have become "leggy" due to lack of management. The most common dominant woody species are hawthorn and blackthorn with hazel, rose and elder occurring frequently.</p> <p>The hedgerows provide bird nesting habitat and can provide commuting routes for bats. The hedgerow bases also provide a refuge for small mammals, large mammals (including badger) and amphibians. Some of the associated mature trees also have potential to support roosting bats (assessed separately) and raptors.</p> <p>No invasive species were recorded as being present within the hedgerows.</p> <p>Hedgerows are listed as a Habitat of Principal Importance under the Natural Environment and Rural Communities Act, 2006.</p>	

References

Bowland Ecology. 2020. *TR3 Wray Compound Hedgerow Survey Report V1*.

Bowland Ecology. 2020a. *TR3 Wray Car Park Hedgerow Survey Report V1*.

Bowland Ecology. 2020b. *TR3 Hedgerow Survey Report V2*.

The Hedgerow Regulations 1997. Available at [The Hedgerows Regulations 1997 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/1997/24/section/1) [accessed on 17.12.2020].



**Haweswater Aqueduct Resilience Programme -
Proposed Bowland Section
Supplementary Environmental Information**

Appendix B7: Annex 8

Off-Site Highways Works – TR3 Bat Tree Report

January 2022



Proposed Bowland Section

Haweswater Aqueduct Resilience Programme - Proposed Bowland Section



Project No: B27070CT
Document Title: Proposed Bowland Section
Supplementary Environmental Information (SEI)
Appendix B7 Annex 8: Off-Site Highways Works – TR3 Bat Tree Report
Document ID: LCC_RVBC-BO_SEI-Appendix B7 Annex 8
Revision: 0
Date: January 2022
Client Name: United Utilities
Author: Bowland Ecology Limited




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Document history and status




Revision	Date	Description	Author	Checked	Reviewed	Approved




1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Alice Helyar, <i>Principal Ecologist</i>	Approved:	Eve Loxham, <i>Ecologist</i>
Report reference:	TR3 Highways Bat Tree Assessment Report V1	Date:	13/01/2021
2 Project Drawings			
Bat Risk Trees and Tree Groups		BOW167_HARP_9.5_BATS_TR3_HIGHWAYS	
Proposed Bowland Section			
4 Ecology Surveys			
Surveyors:	Alice Helyar PhD, MSc, BSc (Hons), MCIEEM Eve Loxham MBiolSci (Hons) Catrin Scott MRes, BSc (Hons) Jodie Marks, MSc, BSc (Hons) Abigail Hamer, BSc (Hons)		
Survey date(s):	24/11/2020, 25/11/2020, 26/11/2020, 30/11/2020, 01/12/2020, 02/12/2020, 08/12/2020, 10/12/2020, 14/12/2020 Survey descriptions and mapping extracted from the original Phase 1 Habitat Survey were undertaken between May 2019 and April 2020.		
Survey Method:	<p>This report details all trees currently identified in TR3 Highways survey area, all of which have been subject to full assessment in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition) (Collins, 2016). A preliminary ground level assessment to identify trees supporting Potential Roosting Features (PRF's) was undertaken during the extended Phase 1 habitat survey. The assessment was aided by close focus binoculars and high-powered torches. All trees were assigned a unique reference number and their locations marked on a plan.</p> <p>Any evidence of bat usage and all PRF's visible from ground level were recorded for future reference, including their approximate height and orientation of access points. Representative photographs were taken and the tree species recorded. Where numerous trees within a group, such as a woodland or tree line were noted to have bat roosting potential, these were assessed as a group.</p> <p>Trees or groups of trees were classified as Low, Moderate or High suitability as bat roosting habitat (groups classified according to the highest potential tree) in accordance with Table 4.1 (Page 35) of The Good Practice Guidelines, summarised as follows:</p> <p>Low – A tree of sufficient size and age to contain PRFs but none seen from the ground, or features seen with only very limited roosting potential.</p> <p>Moderate – A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitats but unlikely to support a roost of high conservation status.</p> <p>High – A tree with one or more PRFs, that are obviously suitable for larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.</p>		
Weather Conditions:	24/11/2020 - Cloud cover (6/8), Wind Beaufort F3 SSE, 11°C, no precipitation 25/11/2020 - Cloud cover (3/8), Wind Beaufort F2 WNW, 5°C, no precipitation 26/11/2020 - Cloud cover (3/8), Wind Beaufort F1 S, 8°C, no precipitation		



	<p>30/11/2020 – Cloud cover (6/8), Wind Beaufort F5 ES, 10.5 °C, light precipitation</p> <p>01/12/2020 - Cloud cover (0/8), Wind Beaufort F1 NW, 6 °C, no precipitation</p> <p>02/12/2020 - Cloud cover (6/8), Wind Beaufort F4 E, 8 °C, light precipitation</p> <p>08/12/2020 - Cloud cover (8/8), Wind Beaufort F5 SE, 8 °C, raining</p> <p>10/12/2020 - Cloud cover (8/8), Wind Beaufort F4 SSE, 6 °C, no precipitation</p> <p>14/12/2020 – cloud cover (8/8), Wind Beaufort F4 SW, 8 °C, raining</p> <p>For weather conditions relating to the bat tree assessments undertaken in 2019-2020, refer to “TR3 Ecology Survey Data Report: Bat Tree Report V2” (Bowland Ecology, 2020).</p>
Limitations to the survey:	Trees at the boundary of the survey area and adjacent to large watercourses were assessed from one side only due to lack of access on the other. Further surveys may be required to establish the presence of bat roosts.
4 Survey Results	
Individual Trees	
TR3.HBT1	
	<p>NGR: SD 64436 68913</p> <p>Species: Oak species (<i>Quercus</i> sp.)</p> <p>Categorisation: Low potential</p>
TR3.HBT2	
	<p>NGR: SD 64562 69310</p> <p>Species: Ash (<i>Fraxinus excelsior</i>)</p> <p>Categorisation: High potential</p> <p>(Ancient/veteran ash tree with multiple features. Avoid impacts)</p>


TR3.HBT3	
	<p>NGR: SD 64645 69246</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>
TR3.HBT4	
	<p>NGR: SD 64096 68465</p> <p>Species: Common beech (<i>Fagus sylvatica</i>)</p> <p>Categorisation: Moderate potential</p>
TR3.HBT5	
	<p>NGR: SD 64126 68449</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>




TR3.HBT6		<p>NGR: SD 64135 68452</p> <p>Species: Common beech</p> <p>Categorisation: Low potential</p>
TR3.HBT7		<p>NGR: SD 64275 68575</p> <p>Species: Ash</p> <p>Categorisation: Moderate potential</p>
TR3.HBT8		<p>NGR: SD 64276 68581</p> <p>Species: Common lime (<i>Tilia x europaea</i>)</p> <p>Categorisation: Low potential</p>




TR3.HBT9	
	<p>NGR: SD 63906 69582</p> <p>Species: Oak species</p> <p>Categorisation: High potential</p>
TR3.HBT10	
	<p>NGR: SD 60576 68191</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>
TR3.HBT11	
	<p>NGR: SD 58361 67768</p> <p>Species: Oak species</p> <p>Categorisation: High potential</p>




TR3.HBT12		
		<p>NGR: SD 57857 67622</p> <p>Species: Oak species</p> <p>Categorisation: Moderate potential</p>
TR3.HBT13		
		<p>NGR: SD 57857 67622</p> <p>Species: Oak species</p> <p>Categorisation: Moderate potential</p>
TR3.HBT14		
		<p>NGR: SD 61148 69367</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>

TR3.HBT15	
	<p>NGR: SD 61255 69525</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>
TR3.HBT16	
No photo.	<p>NGR: SD 62254 70293</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>
<p><i>The following bat tree descriptions are from "TR3 Ecology Survey Data Report: Bat Tree Report V2" (Bowland Ecology, 2020).</i></p>	
TR3.BT1	
	<p>NGR: SD 60664 67299</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>


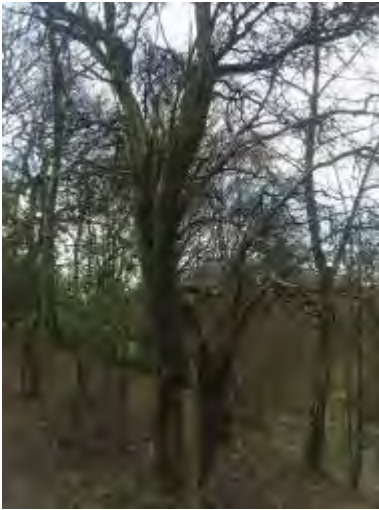

TR3.BT2	
	<p>NGR: SD 60671 67282</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>
TR3.BT3	
	<p>NGR: SD 60693 67268</p> <p>Species: Oak species</p> <p>Categorisation: High potential</p>
TR3.BT4	
	<p>NGR: SD 60877 67098</p> <p>Species: Ash</p> <p>Categorisation: Moderate potential</p>

TR3.BT5	
	<p>NGR: SD 60884 67096</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>
TR3.BT6	
	<p>NGR: SD 60909 67078</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>
TR3.BT7	
	<p>NGR: SD 60735 67187</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>




TR3.BT8	
	<p>NGR: SD 61080 66901</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>
TR3.BT9	
	<p>NGR: SD 61137 66875</p> <p>Species: Oak species</p> <p>Categorisation: Moderate potential</p>
TR3.BT10	
	<p>NGR: SD 61176 66879</p> <p>Species: Oak species</p> <p>Categorisation: Moderate potential</p>




TR3.BT11	
	<p>NGR: SD 61204 66868</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>
TR3.BT12	
	<p>NGR: SD 61221 66861</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>
TR3.BT13	
	<p>NGR: SD 61933 66571</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>



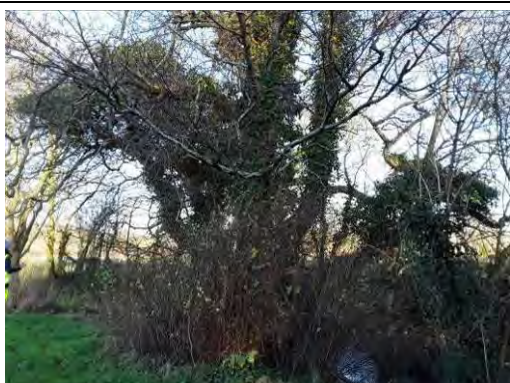

TR3.BT14	
	<p>NGR: SD 61482 66665</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>
TR3.BT15	
	<p>NGR: SD 62056 66422</p> <p>Species: Oak species</p> <p>Categorisation: Low potential</p>
TR3.BT16	
	<p>NGR: SD 62062 66411</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>





TR3.BT17	
	<p>NGR: SD 62113 66417</p> <p>Species: Oak species</p> <p>Categorisation: Moderate potential</p>
TR3.BT18	
	<p>NGR: SD 62133 66403</p> <p>Species: Apple (<i>Malus</i> sp.)</p> <p>Categorisation: Low potential</p>
TR3.BT19	
	<p>NGR: SD 36214 66359</p> <p>Species: Oak species</p> <p>Categorisation: High potential</p>



TR3.BT20	
	<p>NGR: SD 62257 66288</p> <p>Species: Holly (<i>Ilex aquifolium</i>)</p> <p>Categorisation: Low potential</p>
TR3.BT21	
	<p>NGR: SD 62244 66289</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>
TR3.BT22	
	<p>NGR: SD 62237 66290</p> <p>Species: Unknown (dead tree)</p> <p>Categorisation: Low potential</p>

TR3.BT23	
	<p>NGR: SD 62117 66431</p> <p>Species: Sycamore (<i>Acer pseudoplatanus</i>)</p> <p>Categorisation: Low potential</p>
GROUPS	
TR3.HBG1	
	<p>NGR: SD 64474 69026</p> <p>Species: Oak species, beech, alder (<i>Alnus glutinosa</i>), silver birch (<i>Betula pendula</i>), sycamore</p> <p>Number of trees: 100+</p> <p>Categorisation: Moderate potential</p>
TR3.HBG2	
	<p>NGR: SD 64077 68391</p> <p>Species: Oak, ash, sycamore</p> <p>Number of trees: 100+</p> <p>Categorisation: Low potential</p>

TR3.HBG3	
	<p>NGR: SD 64268 68659</p> <p>Species: Oak species, alder</p> <p>Number of trees: 7</p> <p>Categorisation: Moderate potential</p>
TR3.HBG4	
<p>No photo.</p>	<p>NGR: SD 64300 68562</p> <p>Species: Ash, sycamore</p> <p>Number of trees: 5</p> <p>Categorisation: Moderate potential</p>
TR3.HBG5	
	<p>NGR: SD 64008 69523</p> <p>Species: Sycamore, ash, alder, oak species</p> <p>Number of trees: 15</p> <p>Categorisation: High potential</p>
TR3.HBG6	
	<p>NGR: SD 64049 69566</p> <p>Species: Ash, lime</p> <p>Number of trees: 20</p> <p>Categorisation: Low potential</p>

TR3.HBG7	
	<p>NGR: SD 62111 70092</p> <p>Species: Sycamore, oak species, beech, ash, holly</p> <p>Number of trees: 100+</p> <p>Categorisation: Moderate potential</p>
TR3.HBG8	
	<p>NGR: SD 62113 70124</p> <p>Species: Oak species, beech, ash, lime</p> <p>Number of trees: 50</p> <p>Categorisation: High potential</p>
TR3.HBG9	
	<p>NGR: SD 62273 70237</p> <p>Species: Oak species</p> <p>Number of trees: 10</p> <p>Categorisation: High potential</p>
TR3.HBG10	
	<p>NGR: SD 63182 66025</p> <p>Species: Alder, oak species, holly</p> <p>Number of trees: 13</p> <p>Categorisation: Low potential</p>

TR3.HBG11	
	<p>NGR: SD 62888 66086</p> <p>Species: Oak species, alder</p> <p>Number of trees: 4</p> <p>Categorisation: Low potential</p>
TR3.HBG12	
	<p>NGR: SD 62029 66588</p> <p>Species: Oak species, alder</p> <p>Number of trees: 11</p> <p>Categorisation: Low potential</p>
TR3.HBG13	
	<p>NGR: SD 63822 68056</p> <p>Species: Alder</p> <p>Number of trees: 3</p> <p>Categorisation: Low potential</p>
TR3.HBG14	
	<p>NGR: SD 61095 69346</p> <p>Species: Sycamore, ash, beech</p> <p>Number of trees: 20</p> <p>Categorisation: Low potential</p>

TR3.HBG15	
	<p>NGR: SD 62118 66264</p> <p>Species: Oak species, sycamore, hazel (<i>Corylus avellana</i>)</p> <p>Number of trees: 20</p> <p>Categorisation: Moderate</p>
TR3.HBG16	
No photo.	<p>NGR: SD 64404 69054</p> <p>Species: Ash, hazel</p> <p>Number of trees: 10</p> <p>Categorisation: Moderate</p>
<p><i>The following bat tree group descriptions are from "TR3 Ecology Survey Data Report: Bat Tree Report V2" (Bowland Ecology, 2020).</i></p>	
TR3.BG1	
	<p>NGR: SD 60626 67378</p> <p>Species: Beech, hazel, ash, sycamore</p> <p>Number of trees: 4</p> <p>Overall categorisation: Low potential</p>
TR3.BG2	
	<p>NGR: SD 62160 66302</p> <p>Species: Oak species, sycamore, beech, holly, silver birch</p> <p>Number of trees: 10</p> <p>Overall categorisation: Moderate potential</p>

References

Bowland Ecology. (2020). *TR3 Ecology Survey Data Report: Bat Tree Report V2*.

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



THE
ENVIRONMENT
PARTNERSHIP

**Haweswater Aqueduct Resilience Programme -
Proposed Bowland Section
Supplementary Environmental Information**

Appendix B7: Annex 9

**Off-Site Highways Works – TR3 2022 Additional Areas Ecology Data
Summaries**

February 2022



Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

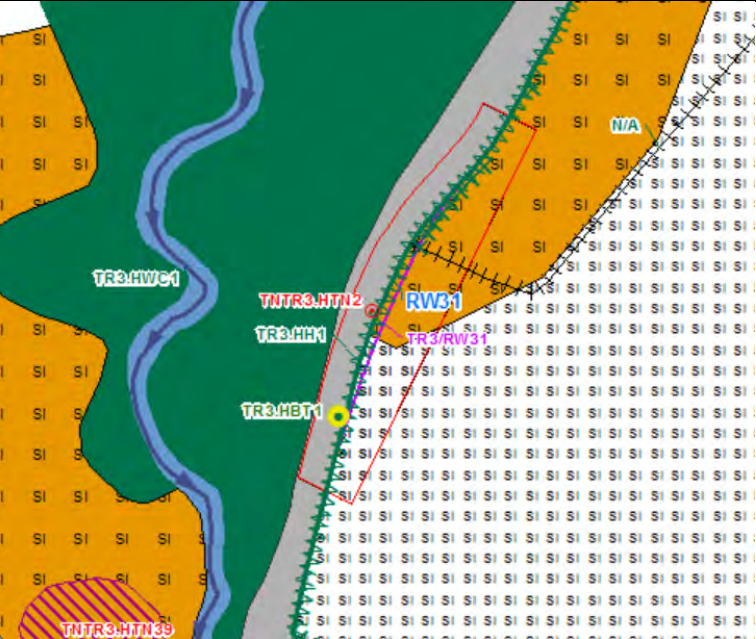

Project No: B27070CT
Document Title: Proposed Bowland Section
Supplementary Environmental Information (SEI)
Appendix B7 Annex 9: Off-Site Highways Works – TR3 2022 Additional Areas Ecology
Data Summaries
Document ID: LCC_RVBC-BO_SEI-Appendix B7 Annex 9
Revision: 0
Date: February 2022
Client Name: United Utilities
Author: Kim Gallaher
Author: Liz Seal

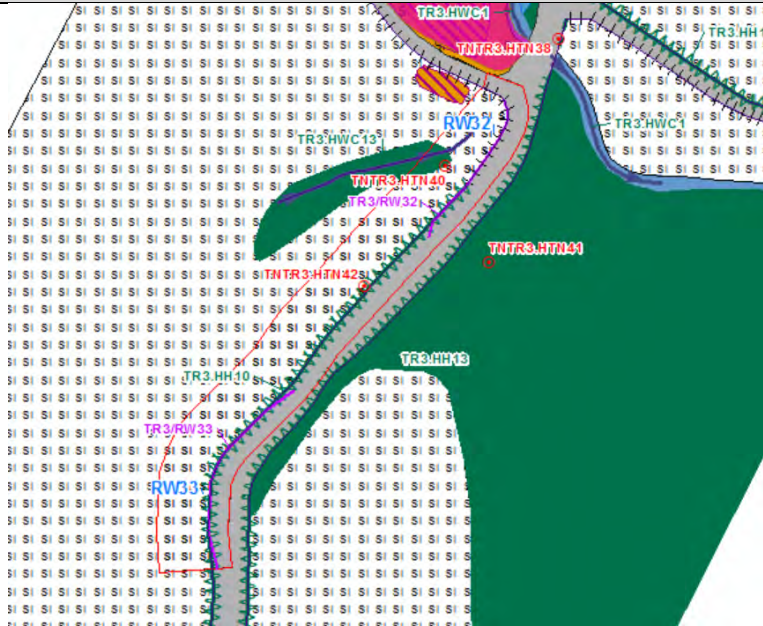

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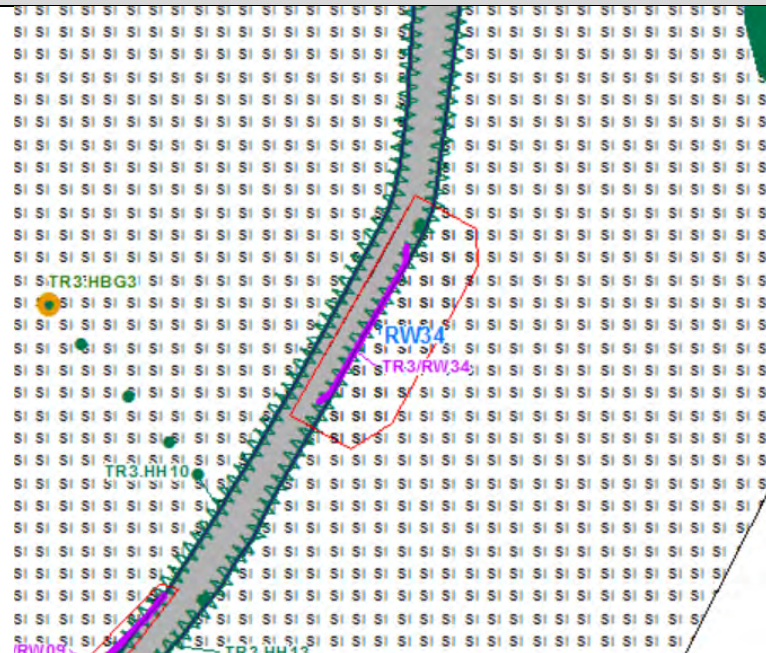
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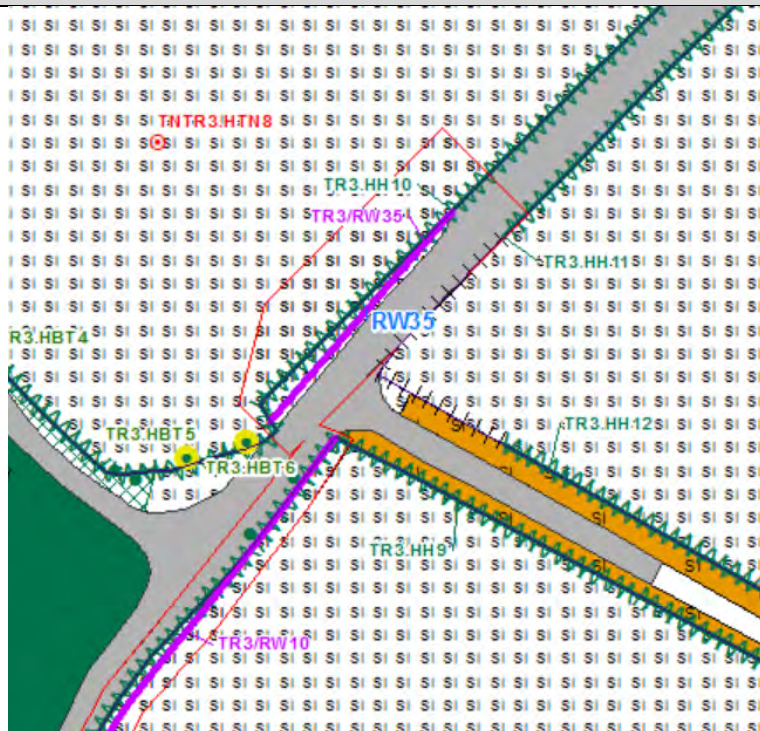

Revision	Date	Description	Author	Checked	Reviewed	Approved

TR3 Bowland Highway Improvements – Ecology Baseline

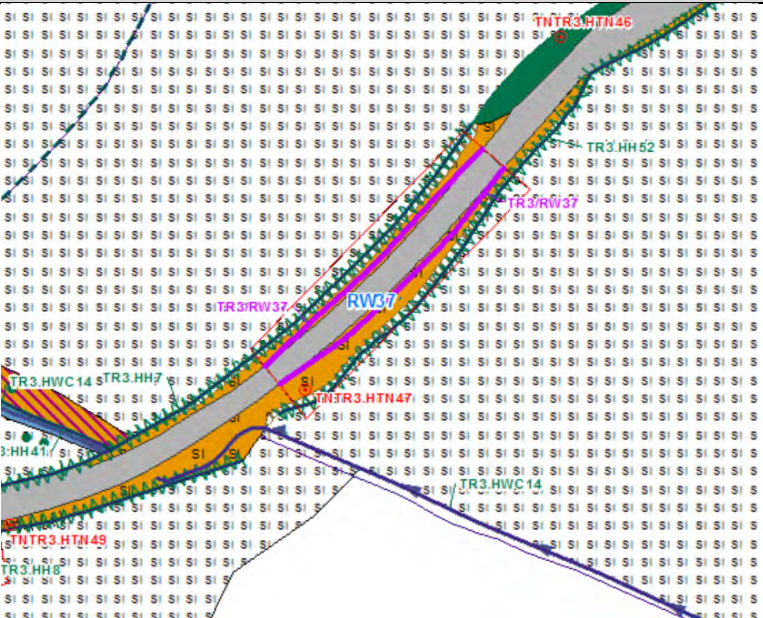

Works ID	TR3/RW31	Survey Date	02/11/21	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	3.2km south west of site	Deciduous woodland	Adjacent to site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	4.7km south west of site	SD66-09 SINC	Adjacent to site		
Robert Hall Moor SSSI	1.1km south west of site	SD66-04 SINC	700m south east of site		
Far Holme Meadow SSSI	3.3km south of site	SD66-03 SINC	1.2km south east of site		
		66NW22 BHS	1.4km south west of site		
		66NW25 BHS	600m south west of site		
		66NW24 BHS	1.0km south west of site		
		66NW18 BHS	1.9km south west of site		
		66NW32 BHS	Adjacent to site		
		66NW19 BHS	1.7km north west of site		
		SD67-07 SINC	1.8km north west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds within 500m of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland Scattered broadleaved trees	Species-rich intact hedgerow Scrub Semi-improved neutral grassland Poor semi-improved grassland Semi-natural broad-leaved woodland Running water				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none">One tree within the works area has low potential to support roosting bats (TR3.HBT1). Removal of this tree may be required to facilitate works.The hedgerow has nesting bird potential.The adjacent SI grasslands have ground nesting bird potential.Watercourse within close proximity to the site (River Wenning <20 m) could have suitability to support commuting and foraging riverine species (otter/water vole).The adjacent woodland provides suitable habitat for small and large mammals (including badger (<i>Meles meles</i>)), nesting habitat for birds as well as roosting, foraging and commuting habitat for bats. Being adjacent to the river it may also provide lay-up sites for otter (<i>Lutra lutra</i>). No impacts to this habitat are anticipated.The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).Amphibians are unlikely to be present due lack of connectivity with potential breeding ponds (none within 500 m).			<ul style="list-style-type: none">Habitats will not be reinstated on completion of the worksWorks lie adjacent to a SINC.Current proposals will require removal of approximately 70 m of species-rich intact hedgerow (TR3.HH1) and associated species-rich verge which has flora characteristic of woodland ground flora (TR3.HTN2)Hedgerow could be classed as important under the Hedgerow Regulations 1997.Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow.It appears the tree with low bat roost potential is likely to require removal to facilitate the works. Further surveys will be required in relation to roosting bats before works can commence.Works will result in the small loss of SI grassland associated with the roadside verge and adjoining fields. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider fields.Works should avoid the nesting bird season or be subject to nesting bird checks.A pre-commencement survey for badger and otter should be carried out within the site and within a suitable buffer of the surrounding areas prior to works commencing.		

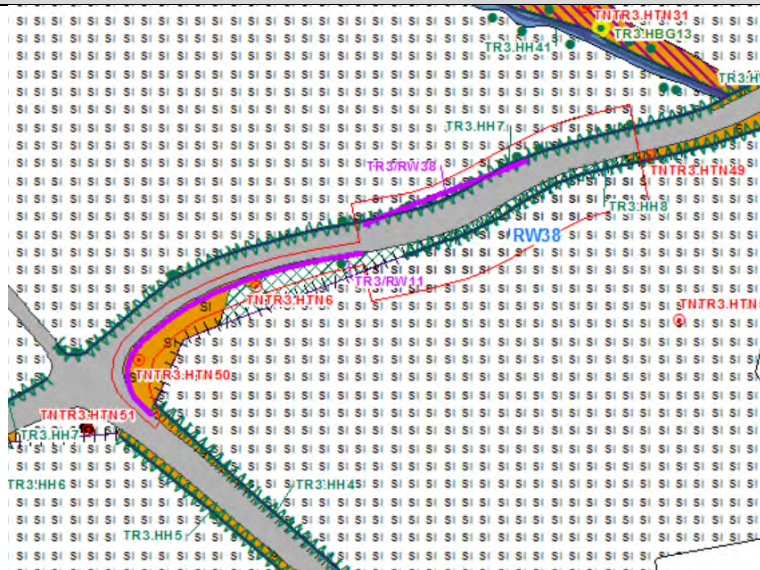

Works ID	TR3/RW32 & RW33	Survey Date	02/11/21	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	3.2km south west of site	Deciduous woodland	Adjacent to site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	4.7km south west of site	John’s Bank Grasslands BHS	Adjacent to site		
Robert Hall Moor SSSI	1.1km south west of site	SD66-09 SINC	10m north of site		
Far Holme Meadow SSSI	3.3km south of site	SD66-04 SINC	700m south east of site		
		SD66-03 SINC	1.2km south east of site		
		66NW22 BHS	1.4km south west of site		
		66NW25 BHS	600m south west of site		
		66NW24 BHS	1.0km south west of site		
		66NW18 BHS	1.9km south west of site		
		66NW32 BHS	Adjacent to site		
		66NW19 BHS	1.7km north west of site		
		SD67-07 SINC	1.8km north west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds within 500m of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Poor semi-improved grassland	Species-rich intact hedgerow Poor semi-improved grassland Semi-natural broad-leaved woodland Wet ditch				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none">The hedgerow has nesting bird potential.Poor semi-improved grassland and semi-natural broad-leaved woodland adjacent to the site have potential to support ground nesting birds.Limited diversity in habitats on and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).Amphibians are unlikely to be present due lack of connectivity with potential breeding ponds (none within 500 m).			<ul style="list-style-type: none">Habitats will not be reinstated on completion of the worksRW32 works lie adjacent to a BHS.Current proposals will require removal of approximately 100 m of species-rich intact hedgerow and associated bank habitat.Hedgerow could be classed as important under the Hedgerow Regulations 1997.Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow.Loss of a small area of adjacent species-poor semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field.Works should avoid the nesting bird season or be subject to nesting bird checks.		

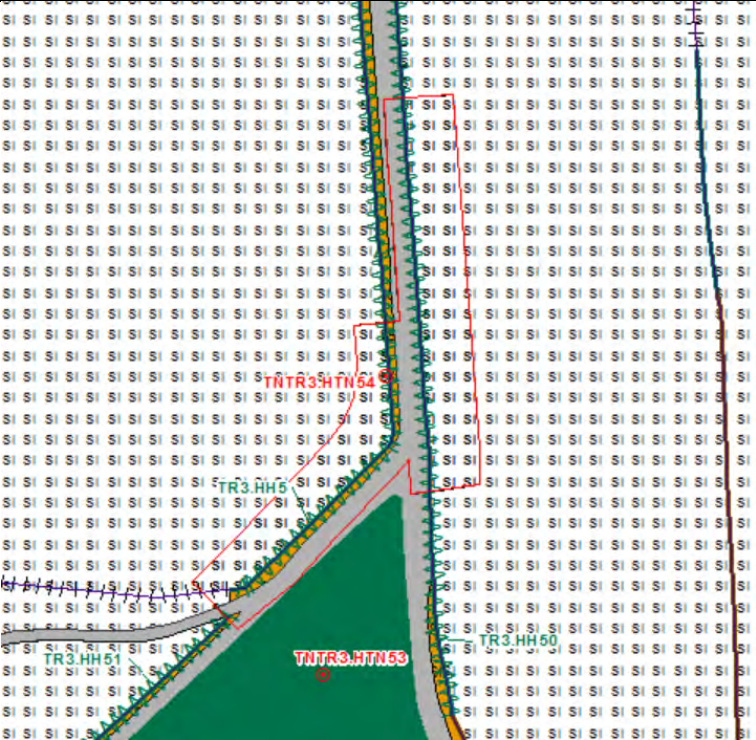

Works ID	TR3/RW34	Survey Date	02/11/21	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	3.1km south west of site	66NW25 BHS	300m west of site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	2.6km south west of site	66NW24 BHS	700m west of site		
Robert Hall Moor SSSI	500m west of site	66NW18 BHS	1.6km west of site		
Far Holme Meadow SSSI	2.9km south of site	6NW22 BHS	1.0km south west of site		
		66NW23 BHS	1.6km south of site		
		SD66-03 SINC	1.0km south east of site		
		SD66-04 SINC	700m east of site		
		SD66-09 SINC	200m north of site		
		66NW32 BHS	200m north of site		
		66NW19 BHS	1.8km north west of site		
		66NW17 BHS	1.5km south west of site		
		66NW21 BHS	1.5km south west of site		
		66NW20 BHS	1.5km south west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds within 500m of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan	Site Photos		
Species-rich intact hedgerow Poor semi-improved grassland	Species-rich intact hedgerow Poor semi-improved grassland Scattered broad-leaved trees		None		
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none">The hedgerow has nesting bird potential.The SI grassland has ground nesting bird potentialLimited diversity in habitats on and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).Amphibians are unlikely to be present due lack of connectivity with potential breeding ponds (none within 500 m).			<ul style="list-style-type: none">Habitats will not be reinstated on completion of the worksCurrent proposals will require removal of approximately 40 m of species-rich intact hedgerow and associated bank habitat (TR3.HH13).Hedgerow could be classed as important under the Hedgerow Regulations 1997.Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow.Loss of a small area of adjacent species-poor semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field.Works should avoid the nesting bird season or be subject to nesting bird checks.		

Works ID	TR3/RW35	Survey Date	02/11/21	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	2.4km south west of site	66NW22 BHS	700m south west of site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	3.7km south west of site	66NW25 BHS	200m north west of site		
Robert Hall Moor SSSI	400m north west of site	66NW24 BHS	600m west of site		
Far Holme Meadow SSSI	2.7km south of site	66NW18 BHS	1.5kmwest of site		
		66NW32 BHS	400m north east of site		
		66NW23 BHS	1.2km south west of site		
		66NW20 BHS	1.2km south west of site		
		66NW29 BHS	1.6km south of site		
		SD66-03 SINC	1.1km south east of site		
		SD66-04 SINC	800m east of site		
		SD66-09 SINC	500m north of site		
		66NW17 BHS	1.7km south west of site		
		66NW19 BHS	1.8km north west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond approx. 480m southeast of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Poor semi-improved grassland	Species-rich intact hedgerow Poor semi-improved grassland Scattered broad-leaved trees Semi-improved neutral grassland				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none">Two trees in close proximity to the works have low potential to support roosting bats (TR3.HBT5 and HBT6). These tree will not be removed to facilitate works but there is a risk overhanging branches may require removal.The hedgerow has nesting bird potential.The SI grassland has ground nesting bird potentialThe mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).Amphibians are unlikely to be present due to distance of nearest potential breeding pond (> 480m).			<ul style="list-style-type: none">Habitats will not be reinstated on completion of the worksCurrent proposals will require removal of approximately 50 m of species-rich intact hedgerow (TR3.HH10) and associated bank habitat.Hedgerow could be classed as important under the Hedgerow Regulations 1997.Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow.Loss of a small area of adjacent species-poor semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field.Works should avoid the nesting bird season or be subject to nesting bird checks.Works should avoid any impacts to trees with bat potential in proximity of the site. If any branches require removal to facilitate works, further surveys will be required in relation to roosting bats before works can commence.		

Works ID	TR3/RW36	Survey Date	02/11/21	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	2.4km south west of site	66NW22 BHS	700m south west of site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	3.7km south west of site	66NW25 BHS	200m north west of site		
Robert Hall Moor SSSI	400m north west of site	66NW24 BHS	600m west of site		
Far Holme Meadow SSSI	2.7km south of site	66NW18 BHS	1.5kmwest of site		
		66NW32 BHS	400m north east of site		
		66NW23 BHS	1.2km south west of site		
		66NW20 BHS	1.2km south west of site		
		66NW29 BHS	1.6km south of site		
		SD66-03 SINC	1.1km south east of site		
		SD66-04 SINC	800m east of site		
		SD66-09 SINC	500m north of site		
		66NW17 BHS	1.7km south west of site		
		66NW19 BHS	1.8km north west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
2 ponds 200m and 250m south of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland	Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland Semi-natural broad-leaved woodland Bare ground				

Works ID		TR3/RW37		Survey Date		02/11/21		Surveyor		Bowland Ecology Ltd.	
Statutory Designated Wildlife Sites within 5km				Non Statutory Designated Wildlife Sites within 2km				Historic Species Records			
Clear Beck Meadow SSSI		2.4km south west of site		66NW22 BHS		700m south west of site		Brown hare		Within 1000m tetrad containing the site	
Roeburndale Woods SSSI		3.7km south west of site		66NW25 BHS		200m north west of site					
Robert Hall Moor SSSI		400m north west of site		66NW24 BHS		600m west of site					
Far Holme Meadow SSSI		2.7km south of site		66NW18 BHS		1.5kmwest of site					
				66NW32 BHS		400m north east of site					
				66NW23 BHS		1.2km south west of site					
				66NW20 BHS		1.2km south west of site					
				66NW29 BHS		1.6km south of site					
				SD66-03 SINC		1.1km south east of site					
				SD66-04 SINC		800m east of site					
				SD66-09 SINC		500m north of site					
				66NW17 BHS		1.7km south west of site					
				66NW19 BHS		1.8km north west of site					
Ponds present within 500m (mapping review only)				Desktop constraints							
2 ponds 170m and 240m southeast of the site				None							
Habitats Present within Site		Habitats Present adjacent to Site		Habitat Plan				Site Photos			
Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland		Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland Semi-natural broad-leaved woodland Running water (Clear Beck) Marshy grassland									
Protected Species Assessment						Summary of Constraints					
<ul style="list-style-type: none">• The hedgerows have nesting bird potential.• The SI grasslands have ground nesting bird potential• The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates and amphibians).						<ul style="list-style-type: none">• Habitats will not be reinstated on completion of the works• Both sides of the road contain mature, species-rich hedgerows (TR3.HH7 and TR3.HH52).• Current proposals will require removal of approximately 120 m of species-rich intact hedgerow and associated bank habitat.• Hedgerow could be classed as important under the Hedgerow Regulations 1997.• Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow.• Loss of a small area of adjacent species-poor semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field.• Works should avoid the nesting bird season or be subject to nesting bird checks.• Works are located in close proximity to a watercourse (Clear Beck). Assumed impacts could be avoided.					

Works ID	TR3/RW38	Survey Date	02/11/21	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	2.0km west of site	66NW22 BHS	200m south west of site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	3.4km south west of site	66NW24 BHS	400m north west of site		
Robert Hall Moor SSSI	630m north of site	66NW18 BHS	1.1km north west of site		
Far Holme Meadow SSSI	2.4km south east of site	66NW25 BHS	400m north of site		
		66NW32 BHS	1.0km north east of site		
		SD66-04 SINC	1.3km north east of site		
		SD66-09 SINC	1.1km north east of site		
		SD66-03 SINC	1.2km east of site		
		66NW23 BHS	700m south of site		
		66NW20 BHS	800m south of site		
		66NW21 BHS	900m south of site		
		66NW17 BHS	800 south west of site		
		66NW30 BHS	1.8km south east of site		
		66NW11 BHS	1.8km south west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
2 ponds 200m and 250m east of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland Scrub	Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland Running water (Clear Beck) Marshy grassland			 <div>Bowland Ecology HARP TR3 Lowerhouses Highway PP07 02.11.2021 10:42 54 10678, 2 55484</div>	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none">The hedgerow has nesting bird potential.The SI grassland has ground nesting bird potentialThe mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).Amphibians are unlikely to be present due to distance of nearest potential breeding pond (> 200m).			<ul style="list-style-type: none">Habitats will not be reinstated on completion of the worksCurrent proposals will require removal of approximately 70 m of species-rich intact hedgerow (TR3.HH7) and associated bank habitat.Hedgerow could be classed as important under the Hedgerow Regulations 1997.Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow.Loss of a small area of adjacent species-poor semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field.Works should avoid the nesting bird season or be subject to nesting bird checks.		

Works ID	Spen Brow Holding Area	Survey Date	02/11/21	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	2.0km west of site	66NW22 BHS	200m south west of site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	3.4km south west of site	66NW24 BHS	400m north west of site		
Robert Hall Moor SSSI	630m north of site	66NW18 BHS	1.1km north west of site		
Far Holme Meadow SSSI	2.4km south east of site	66NW25 BHS	400m north of site		
		66NW32 BHS	1.0km north east of site		
		SD66-04 SINC	1.3km north east of site		
		SD66-09 SINC	1.1km north east of site		
		SD66-03 SINC	1.2km east of site		
		66NW23 BHS	700m south of site		
		66NW20 BHS	800m south of site		
		66NW21 BHS	900m south of site		
		66NW17 BHS	800 south west of site		
		66NW30 BHS	1.8km south east of site		
		66NW11 BHS	1.8km south west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
2 ponds 230m and 250m northeast of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland	Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland Semi-natural broad-leaved woodland				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none">The hedgerows have nesting bird potential.The SI grassland has ground nesting bird potentialThe mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).Amphibians are unlikely to be present due to distance of nearest potential breeding pond (>230m).			<ul style="list-style-type: none">Habitats will be reinstated on completion of the worksCurrent proposals will require removal of approximately 200 m of species-rich intact hedgerow and associated bank habitat.Hedgerow could be classed as important under the Hedgerow Regulations 1997.Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow.Loss of a small area of adjacent species-poor semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field.Works should avoid the nesting bird season or be subject to nesting bird checks.		



THE
ENVIRONMENT
PARTNERSHIP

**Haweswater Aqueduct Resilience Programme -
Proposed Bowland Section
Supplementary Environmental Information**

Appendix B7: Annex 10

**Off-Site Highways Works – TR3 2022 Additional Areas Target Note
Report**

February 2022



Haweswater Aqueduct Resilience Programme - Proposed Bowland Section



Project No: B27070CT
Document Title: Proposed Bowland Section
Supplementary Environmental Information (SEI)
Appendix B7 Annex 10: Off-Site Highways Works – TR3 2022 Additional Areas Target
Note Report
Document ID: LCC_RVBC-BO_SEI-Appendix B7 Annex 10
Revision: 0
Date: February 2022
Client Name: United Utilities
Author: Kim Gallaher
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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Jack Taylor, assistant ecologist	Approved:	Alice Helyar, Principal Ecologist
Report reference:	TR3 Highway Revisions 2021_Target Notes Lower Houses_V1 TR3 Highway Revisions 2021_Target Notes Lower Houses_V2	Date:	09 /11/2021 31/01/2022
2 Project Drawings			
3 Ecology Surveys			
Surveyors:	Jack Taylor BSc (Hons), QCIEEM		
Survey date(s):	02 /11/2021,		
Survey Method:	The extended Phase 1 habitat survey followed standard methodology (JNCC, 2010 and CIEEM, 2013). All features of ecological significance were target noted and a colour coded map of the habitats on site has been produced. Buildings and structures were assessed in accordance with Collins, 2016, with regard to the potential to support bat roosts. Habitat Condition has been assessed in accordance with Natural England Biodiversity Metric (July 2019; Crosher <i>et al.</i> 2019).		
Weather Conditions:	02 /11/2021 - 11 degrees with 75% cloud cover, infrequent light drizzle, light breeze BF2. For weather conditions relating to the Hedgerows Surveys undertaken in 2020, refer to the separate pertaining reports; “TR3 Highways Ecology Survey Data Report – Target Note Report V1 15.01.2021” (Bowland Ecology 2021), “TR3 Wray Compound Hedgerow Survey Report V1” (Bowland Ecology, 2020); “TR3 Wray Car Park Hedgerow Survey Report V1” (Bowland Ecology, 2020a) and “TR3 Hedgerow Survey Report V2” (Bowland Ecology, 2020b).		
Limitations to the survey:	Habitats were assessed from the road side due to access restrictions, consequently habitats, including hedgerows and trees for bat potential, further back from the road side could not be assessed in detail. The surveys were carried out in November 2021. Optimal survey months for Phase 1 Habitat Surveys vary between habitat types, e.g., woodlands and hedgerows are best surveyed in spring, grasslands in mid-summer and heathlands in autumn. Where habitats were not surveyed during the optimal time of year, a full assessment may not have been possible. Hedgerows and watercourses at the edges of the survey are were viewed from a single elevation due to lack of access.		
4 Target Notes			

TR3.HTN38	 <p>Bowland Ecology HARP TR3 Lower Houses Highway PP04 02.11.2021 09:16 S411425 -2.54572</p>
	<p>A small section of species poor defunct hedgerow consisting of hawthorn (<i>Crataegus monogyna</i>), ash (<i>Fraxinus excelsior</i>) and hazel (<i>Corylus avellana</i>) is present on the eastern side of Eskew lane bounding a grazed field to the east. It does not qualify as a hedgerow due to the short length (less than 20 m), however, it has been replanted and cut into the shape of a hedgerow.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>
TR3.HTN39	 <p>Bowland Ecology HARP TR3 Lower Houses Highway PP04 02.11.2021 12:17 S411418 -2.54608</p>
	<p>A patch of marshy grassland is present to the west of Eskew beck immediately north of a gravel track. The area is dominated by soft rush (<i>Juncus effusus</i>) and appears quite waterlogged. Sitting in a natural depression, the area is likely fed by run off from the surrounding fields.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>
TR3.HTN40	no picture
	<p>A small section of around 12 m of hedgerow on the western side of Long Lane has recently been removed and replaced with wire fence. The remaining ground flora comprises dog's mercury (<i>Mercurialis perennis</i>), ivy (<i>Hedera helix</i>), bedstraw sp. (<i>Galium</i> sp.), garlic mustard (<i>Alliaria petiolata</i>), herb Robert (<i>Geranium robertianum</i>), bramble (<i>Rubus fruticosus</i>) and male fern (<i>Dryopteris filix-mas</i>). Based on the existing hedgerow (TN7) the species composition of the removed section can be estimated to comprise sycamore (<i>Acer pseudoplatanus</i>), hazel, holly (<i>Ilex aquifolium</i>).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>

TR3.HTN41	 <p>Released Ecology HARP TR3 Lower Houses Highway PP04 02/11/2021 09:23 54.12496, -2.50779</p>
<p>Semi-natural deciduous woodland bordering Long Lane to the east. The trees are semi-mature to mature with smaller saplings present as well. The canopy species primarily consists of oak (<i>Quercus robur</i>), alder, beech (<i>Fagus sylvatica</i>) and silver birch (<i>Betula pendula</i>). The understory is generally sparse but is occasionally dense towards the road edge and includes the species; hazel, holly and hawthorn. Between the road and woodland sits a hedgerow consisting of hawthorn and hazel. The hedgerow is heavily overgrown with ivy. The hedgerow ground flora includes; dog's mercury, male fern, common polypody (<i>Polypodium vulgare</i>), garlic mustard, Yorkshire fog (<i>Holcus lanatus</i>), colt's foot (<i>Tussilago farfara</i>), common nettle (<i>Urtica dioica</i>), broadleaved dock (<i>Rumex obtusifolius</i>) and herb Robert. Extending from the south of the woodland a line of trees (primarily beech) closely follows the road for around 12-15 m merging with the hedgerow for its length. The line of trees terminates with a large oak tree.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR3.HTN42	 <p>Released Ecology HARP TR3 Lower Houses Highway PP04 02/11/2021 09:31 54.11396, -2.51609</p>
<p>The hedgerow on the western side of Long Lane is made up of sycamore, hazel and holly with additional dog rose (<i>Rosa canina</i>). The associated verge, approximately 0.6 m wide, includes abundant nettle, dog's mercury, bedstraw sp., male fern, cow parsley (<i>Anthriscus sylvestris</i>), common polypody and hogweed (<i>Heracleum sphondylium</i>). Additional more infrequent species include garlic mustard, dandelion (<i>Taraxicum</i> agg.), sow thistle (<i>Sonchus</i> sp.), creeping thistle (<i>Cirsium arvense</i>), herb Robert and colt's foot.</p> <p>Habitat condition (provisional): Moderate (Score 1)</p>	

TR3.HTN43	 <p>Bowland Ecology HARP TR3 Lowerhouses Highway PP06 02.11.2021 10:06 S4 10856, -2.5518</p>
<p>Broadleaf semi-natural woodland bordering Long lane to the west. The woodland is linear in nature, extending back approximately 25-30 m from the road which it follows closely. The woodland has a mixed age structure with relatively large and mature canopy species include ash, oak and sycamore. The shrub layer comprises hazel, blackthorn (<i>Prunus spinosa</i>), hawthorn and holly and is reasonable dense along the edge of the road but does not form a continuous barrier. Habitat condition (provisional): Poor (Score 1)</p>	
TR3.HTN44	 <p>Bowland Ecology HARP TR3 Lowerhouses Highway PP06 02.11.2021 10:07 S4 10866, -2.55172</p>  <p>Bowland Ecology HARP TR3 Lowerhouses Highway PP06 02.11.2021 10:07 S4 10867, -2.55163</p>
<p>An agricultural yard area is present to the east of Long lane, accessible through a field gate. The yard is covered by a layer of hard-standing gravel with limited terrestrial ground cover. Towards the east of the yard (further back from the road) there is a storage shed constructed from steel girders and corrugated metal. The shed is completely open to the west and appears to be wet inside. Additionally, several large stacks of logs are being stored in the yard with diameters ranging from 0.3-0.6 m. Common nettle, bramble and rosebay willowherb sp (<i>Epilobium angustifolium</i>) have grown up</p>	

around the logs. As well as the logs a large pile of what appear to be wood chips is also present. The yard is bordered by a tree line of alder and oak to the east and west.

Habitat condition (provisional): Poor (Score 1)

TR3.HTN45



A particularly wide section of roadside verge is present on the eastern side of Long lane with tall ruderal and semi-improved neutral grassland vegetation. Bordered to the east by a hazel dominated hedgerow, the verge extends back from the road by around 5 m at its widest. Species present in the verge include Yorkshire fog, cock's foot, burdock (*Arctium lappa*), creeping thistle, spear thistle (*Cirsium vulgare*), cow parsley, common sow thistle, common nettle, broadleaved dock, hogweed, knapweed sp. (*Centurea nigra*), willow herb sp.



Habitat condition (provisional): Moderate (Score 2)



TR3.HTN46







A small group/copse of deciduous trees comprising semi-mature alder bordering Long lane to the west. Beneath the canopy trees, the understory consisting of wych elm (*Ulmis glabra*), hazel, holly, blackthorn and hawthorn. The ground flora includes the species male fern, dog's mercury, dandelion, common sow thistle, willow herb sp., creeping buttercup (*Ranunculus repens*).



Habitat condition (provisional): Poor (Score 1)

TR3.HTN47	
	<p>Another section of wide road side verge, somewhat continuous with TR3.HTN45 with similar dimensions (approximately 5 m wide). The verge has semi-improved neutral grassland vegetation transitioning to tall ruderal vegetation further away from the road. The verge is bordered by a hazel and hawthorn hedge. Two mature oak and two mature alder trees are present along the course of the hedgerow. Species present in the verge include: creeping buttercup, herb Robert, dandelion, dock, greater plantain (<i>Plantago major</i>), Yorkshire fog, bush vetch (<i>Vicia sepium</i>), nettle, creeping buttercup, common hogweed, male fern, bramble, and willowherb sp.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>
TR3.HTN48	
	<p>An area of marshy grassland situated in the fields on the north-western side of Long lane bordering a small stream (clear beck). The area has abundant soft rush growth with more scattered and infrequent growth extending out particularly to the east. Species composition could not be assessed from the road side; if impacted recommend further assessment.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>

TR3.HTN49	 <p>Bowland Ecology HARP TR3 Lowerhouses Highway PP07 02.11.2021 10:42 54.10678, -2.55484</p>
	<p>The road is bordered on both sides by hedgerow comprising hazel and hawthorn with addition sections of holly. The associated road side verge on the south-eastern side is reasonable wide - around 2 m - and has extensive tall ruderal growth. Species present include: bush vetch, dandelion, nettle, bramble, nipple wort (<i>Lapsana communis</i>), black knapweed, willowherb sp., male fern, garlic mustard, and horse tail (<i>Equisetum</i> sp.). The bordering hedgerow on the south-eastern side of the road ends with a patch of dense gorse scrub.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>
TR3.HTN50	 <p>Bowland Ecology HARP TR3 Lowerhouses Highway PP07/PP08 02.11.2021 10:55 54.1066, -2.55584</p>
	<p>At the junction of Long lane and Fairheath road there is an especially large area of roadside verge – approximately 10 m wide. The section is fenced off from the field to the east and bordered by Long lane to the north-west and Fairheath road to the south. The area is indicative of species rich semi-improved neutral grassland and is dominated by meadow grass sp. and bush vetch with additional species including greater plantain, horse tail sp. (<i>Equisetum</i> sp.), creeping thistle, black knapweed, meadow sweet (<i>Filipendula ulmaria</i>) and cow parsley.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>

TR3.HTN51	 
	<p>To the south of the junction between Long land and Fairheath road a small section of amenity grassland is present with a bus shelter. The shelter is irregular cemented stone on the outside with breeze block interior, an unglazed window opening is present on the eastern aspect. The roof comprises cement tiles supported by a timber frame. The interior has substantial amounts of bird droppings, likely from pigeons. It is considered to offer low/negligible bat roosting potential.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>
TR3.HTN52	
	<p>The hedgerows running along Fairheath road primarily consists hawthorn and holly with additional sycamore and dog rose. The two immature trees growing within the hedgerow, are holly and rowan. The associated road side verge on the south-western road side is relatively wide at roughly 3 m, with species including: meadow grass sp. (<i>Poa</i> sp.), black</p>

<p>knapweed, bush vetch, creeping buttercup, wood avens (<i>Geum urbanum</i>), dog's mercury, greater plantain, ribwort plantain, herb Robert and colt's foot.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR3.HTN53</p>	
<p>A section of deciduous woodland which is bounded by Furnessford road to the east and Spen brow to the west. The woodland has a mixed age structure with mature canopy trees comprising primarily of oak and silver birch with additional beech and hazel. The understory is relatively sparse internally but is occasionally dense towards the road side, species include hawthorn and holly. The ground flora beneath the canopy consists of almost exclusive of male fern with additional broad buckler fern (<i>Dryopteris dilatata</i>) and bramble. Towards the road verge side additional species are present including black knapweed, Yorkshire fog, nettle, creeping buttercup and ribwort plantain.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	

TR3.HTN54	 <p>Bowland Ecology HARP TR3 Lowerhouses Highway PP09 02.11.2021 11:50 54.10298, -2.55383</p>
<p>The hedgerow on the western side of the road comprises oak, hawthorn and bramble with infrequent patches of honey suckle and holly. A small willow tree is present growing out of the hedgerow on the western road side. On the opposite side of the road the hedgerow comprises hawthorn and sycamore with no oak present. The associated verges on Spennings Brow include meadow grass sp., cow parsley, garlic mustard, bedstraw sp., hedge wound wort (<i>Stachys sylvatica</i>) and an abundance of cleavers (<i>Galium aparine</i>).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
Watercourses	
TR3.HWC1	 <p>Bowland Ecology HARP TR3 Lowerhouses Highway PP09 02.11.2021 12:16 54.11318, -2.54609</p>
<p>Moderate flowing stream approximately 1.5 to 5 m wide. 0.1-0.5 m deep with some pools and riffles. Flowing over cobbles, stones, gravels and silt. Shallow banks are earth and stone, with some larger rocks. Downstream the watercourse has some</p>	

sections of much steeper embankments, which are bare rock with some vertical and undercut areas. Bordered by broadleaved woodland on the eastern bank and species-poor semi-improved grassland, with some small areas of marshy grassland and possible semi-improved neutral grassland to the west. The stream is channelised under the bridge with a concrete culvert structure. On the western side of the road the stream is surrounded by deciduous woodland on both banks. The watercourse flows in a northerly direction. Potential for salmonids, otter (*Lutra lutra*), and white-clawed crayfish (*Austropotamobius pallipes*) but is low risk for water vole (*Arvicola amphibius*).


Habitat condition (provisional): Poor (Score 1)

TR3.HWC13



A small wet ditch on the western side of the road with running water flowing in a northerly direction into Eskew beck. The stream is very small around 0.6 m wide and the banks are poorly defined, especially towards the northern end immediately before joining the larger Eskew beck. Towards the southern end the watercourse is surrounded by semi-mature hawthorn and alder (*Alnus glutinosa*).

Habitat condition (provisional): Poor (Score 1)

TR3.HWC14	
	<p>A small stream (Clear Beck) flowing under Long lane from east to west. The stream follows parallel to the road for around 20 m on the eastern road side before crossing under a stone culvert. The channel ranges in width from around 0.6 m on the south-eastern side of the road to 1.5 m on the north western side. The banks of the stream on the south-eastern side of the road are heavily overgrown with tall ruderal vegetation including willowherb sp., creeping thistle, nettle and bramble which completely covers the water channel itself. Meanwhile on the north-western side the banks are colonised by taller scrub vegetation comprising hazel, holly and bramble. The bed of the stream is of a silty substrate with large irregular stone blocks reinforcing the banks, upon which ferns and bryophytes are growing at the water level.</p> <p>habitat condition (provisional): Poor (Score 1)</p>

References

- Bowland Ecology. (2020). *TR3 Wray Compound Target Note Report V1*.
- Bowland Ecology. (2020a). *TR3 Wray Car Park Target Note Report V1*.
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- Collins (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London.
- Crosher, I., Gold, S., Heaver, M., Heydon, M., Moore, L., Panks, S., Scott, S., Stone, D. & White, N. (2019). *The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version, July 2019)*. Natural England.

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Natural England (July 2019). *The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version)*.



**Haweswater Aqueduct Resilience Programme -
Proposed Bowland Section
Supplementary Environmental Information**

Appendix B7: Annex 11

**Off-Site Highways Works – TR3 2022 Additional Areas Hedgerows
Report**

February 2022



Proposed Bowland Section

Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

Project No: B27070CT
Document Title: Proposed Bowland Section
Supplementary Environmental Information (SEI)
Appendix B7 Annex 11: Off-Site Highways Works – TR3 2022 Additional Areas Hedgerows Report
Document ID: LCC_RVBC-BO_SEI-Appendix B7 Annex 11
Revision: 0
Date: February 2022
Client Name: United Utilities
Author: Bowland Ecology Limited

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	<i>Jack Taylor, assistant ecologist</i>	Approved:	Alice Helyar, <i>Principal Ecologist</i>
Report reference:	TR3 Highway Revisions 2021_Hedgerows Lower Houses_V1	Date:	09/11/2021
2 Project Drawings			
TR3 Hedgerow Plans Proposed Bowland Section		BOW167_HARP_9.5_HEDGEROWS_TR3_HIGHWAYS	
4 Ecology Surveys			
Surveyors:	Jack Taylor BSc (Hons), QCIEEM		
Survey date(s):	02 /11/2021 Survey descriptions and mapping extracted from the initial highways Phase 1 Habitat Survey were undertaken between November and December 2020.		
Survey Method:	Hedgerows were assessed in accordance with The Hedgerow Regulations 1997. This report details all hedgerows currently identified with agreed access in place or roadside access which are within the TR3 Highways survey area, all of which have been subject to full assessment against the Hedgerow Regulations 1997. Hedgerow lengths detail the portion of the hedgerow within the survey area (and buffer).		
Weather Conditions:	02 /11/2021 - 11 degrees with 75% cloud cover, infrequent light drizzle, light breeze BF2. For weather conditions relating to the Hedgerows Surveys undertaken in 2019-2020, refer to the separate pertaining reports; “TR3 Highways Ecology Survey Data Report – Hedgerow Report V1 14.01.2021” (Bowland Ecology 2021), “TR3 Wray Compound Hedgerow Survey Report V1” (Bowland Ecology, 2020); “TR3 Wray Car Park Hedgerow Survey Report V1” (Bowland Ecology, 2020a) and “TR3 Hedgerow Survey Report V2” (Bowland Ecology, 2020b).		
Limitations to the survey:	The survey season for hedgerows is from April to October, with June and July being the most suitable months. Those surveyed outside the optimal survey season listed in the survey dates above may be limited by a reduced view of ground floral species and may require re-visiting to further establish their importance. Hedgerows at the survey boundary or along watercourse edges were viewed from one elevation due to lack of access to the other. Hedgerows included within this report have all been subject to a full hedgerow assessment. Additional hedgerows which are un-numbered are shown on the associated plans. At the time of writing this report, access to fully assess those hedgerows was not agreed and these have therefore not been subject to a full hedgerow regulations assessment.		
4 Survey Results			

TR3.HH1	
	<p>The hedgerow is approximately 247 m long and 1.5 m in height and 1.5 m wide. There is one gap within the hedgerow which is less than 5% of the entire hedge and there are two associated mature trees. There is an associated dry ditch on the western side of the hedgerow. The hedgerow connects to one other hedgerow (TR3.HH46) but connections with other hedgerows or woodlands do not score four or more points. The canopy is species rich, being dominated by blackthorn (<i>Prunus spinosa</i>), with smaller amounts of hazel (<i>Corylus avellana</i>), hawthorn (<i>Crataegus monogyna</i>), elder (<i>Sambucus nigra</i>) and holly (<i>Ilex aquifolium</i>) (five woody species). The ground flora has notable species of lady fern (<i>Athyrium filix-femina</i>), herb Robert (<i>Geranium robertianum</i>), wood avens (<i>Geum urbanum</i>) and dog's mercury (<i>Mercurialis perennis</i>). Also noted within the ground flora were additional species including; bramble (<i>Rubus fruticosus</i> agg.), cow parsley (<i>Anthriscus sylvestris</i>), common nettle (<i>Urtica dioica</i>), ivy (<i>Hedera helix</i>), wood melick (<i>Melica uniflora</i>), ribwort plantain (<i>Plantago lanceolata</i>), tufted hairgrass (<i>Deschampsia cespitosa</i>), ground ivy (<i>Glechoma hederacea</i>), cleavers (<i>Galium aparine</i>), false oat grass (<i>Arrhenatherum elatius</i>), greater stitchwort (<i>Stellaria holostea</i>), horsetail (<i>Equisetum</i> sp.), garlic mustard (<i>Alliaria petiolata</i>), red campion (<i>Silene dioica</i>), barren strawberry (<i>Waldsteinia fragarioides</i>) and nipplewort (<i>Lapsana communis</i>). The ground flora is also likely to include English bluebell (<i>Hyacinthoides non-scripta</i>). The hedgerow appears to be more than 30 years in age.</p> <p>It is likely that the hedgerow supports one Wildlife & Countryside Act (1981 as amended) protected species (English bluebell) due to the composition of the ground flora and proximity to a nearby broadleaved woodland, however, due to the timing of the survey it was not possible to confirm presence. If English bluebells are present, this hedgerow would be classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>
TR3.HH4	

The hedgerow is 103 m long and 1.5 m in height and 1.5 m wide. There is one gap within the hedgerow which is less than 5% of the hedgerow length and there are no associated mature trees. One parallel hedge lies within 15 m of the hedgerow (TR3.HH5). Connections with other hedgerows or woodlands do not score four or more points. The canopy is species rich with dominant hawthorn and smaller amounts of holly, blackthorn, ash (*Fraxinus excelsior*) and rose (*Rosa* sp.) also present (five woody species). Dog's mercury is the only notable species found within the ground flora, with additional species including; bramble, cow parsley, meadow sweet (*Filipendula ulmaria*), common nettle, bush vetch (*Vicia sepium*) and creeping bent (*Agrostis stolonifera*). The hedgerow is more than 30 years in age.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow is classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH5



The hedgerow is 106 m long and 1.5 m in height and 1.5 m wide. There is one gap within the hedgerow which forms approximately 5% of the hedgerow length and there are two associated mature trees. A parallel hedge lies within 15 m of the hedgerow (TR3.HH4). Connections with other hedgerows or woodlands do not score four or more points. The canopy is species rich, with abundant hawthorn. Hazel, holly, blackthorn, whitebeam and rose sp. are also present (six woody species). The ground flora has notable species of lady fern, broad buckler fern (*Dryopteris dilatata*) and herb Robert. Noted within the ground flora were additional species including; foxglove (*Digitalis purpurea*), meadow sweet, bush vetch, common nettle, creeping bent, bramble, black knapweed (*Centaurea nigra*), cleavers (*alium aparine*), bracken (*Pteridium aquilinum*), stitchwort sp., cow parsley and nipplewort (*Lapsana communis*). The hedgerow appears to be more than 30 years in age.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow is classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH6



The hedgerow is 75 m long and 1.5 m in height and 1.5 m wide. It does not have an associated bank, wall or ditch. There are no gaps within the hedgerow and there are no associated mature trees. Connections with other hedgerows or woodlands do not score four or more points. The canopy is species rich, with dominant hawthorn. Hazel, ash, holly and rose sp. are also present (five woody species). The ground flora has notable species of herb Robert. Also noted within the ground flora were additional species including; bramble, cow parsley, common nettle, common hogweed, cleavers, bracken, stitchwort sp. and crosswort (*Cruciata laevipes*). A parallel hedgerow is present within 15 m (TR3.HH7). The hedgerow appears to be more than 30 years in age.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow is classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH7



The hedgerow is 271 m long and 1 m in height and 1 m wide. There is one gap within the hedgerow which is less than 10% of the hedgerow length and there is one associated mature tree (there are 11 immature trees <20 cm diameter) within the hedgerow). Connections with other hedgerows or woodlands do not score four or more points. Two parallel hedgerows are present within 15 m (TR3.HH6 and TR3.HH8) and there is one connecting hedgerow (TR3.HH41). There is no associated ditch or bank. The canopy is species rich and dominated by hawthorn. Hazel, ash, holly, blackthorn and rose sp. are also present (six woody species). The ground flora has one notable species; herb Robert and other species present include; cow parsley, common hogweed, common nettle, bramble, cleavers, crosswort, ribwort plantain, yarrow (*Achillea millefolium*), meadow vetchling (*Lathyrus pratensis*), bush vetch and red fescue. The hedgerow appears to be more than 30 years in age.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow is classified under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH8



This hedgerow is 91 m in length, approximately 1.5 m in height and 2 m wide. There are no gaps or ditches along the length. There are no associated supporting banks or walls and there are no mature trees. The canopy is dominated by blackthorn, with hazel and holly also present (three woody species). Schedule 2 ground flora species recorded include male fern, lady fern, pignut (*Conopodium majus*), herb Robert, wood avens and dog's mercury. Additional ground flora species recorded include opposite leaved golden saxifrage (*Chrysosplenium oppositifolium*), cow parsley, bracken, meadow sweet, ivy, coltsfoot (*Tussilago farfara*), common hogweed, black knapweed and cleavers. Connections with other hedgerows or woodlands do not score four or more points, however there is a parallel hedgerow within 15 m (TR3.HH7). The hedgerow does not appear to be less than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH9



This hedgerow is 333 m in length, approximately 1.5 m in height and 2 m wide. There are no gaps in the hedgerow. There is no dry ditch associated with the hedgerow. The hedgerow is supported by a bank/wall. There is one mature tree associated with the hedgerow. The canopy is dominated by beech and with hazel, hawthorn, ash and holly also present (five woody species). Schedule 2 ground flora species present include male fern, lady fern, herb Robert, wood avens, dog's mercury, common polypody fern (*Polypodium vulgare*) and barren strawberry. Additional ground flora species recorded include; bramble, nipplewort, garlic mustard, ivy, cleavers, common nettle, common hogweed, reed canary grass (*Phalaris arundinacea*), meadow grass sp. (*Poa* sp.), meadowsweet, creeping buttercup, foxglove, cow parsley, dandelion (*Taraxacum officinale* agg.), sow thistle (*Sonchus* sp.), broadleaved dock (*Rumex obtusifolius*), hedge woundwort and sneezewort (*Achillea ptarmica*). Connections with other hedgerows or woodlands do not score four or more points, however there is a parallel hedgerow within 15 m (TR3.HH12). There are at least three woodland species within one metre, in any direction, of the outermost edge of the hedgerow. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH10



This hedgerow is 413 m in length, approximately 1.5 m in height and 1.5 m wide. There are no gaps in the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall. There are four mature trees associated with the hedgerow. The canopy is dominated by hazel and blackthorn with hawthorn, ash, rose and holly also present (six woody species). Schedule 2 ground flora species present include; lady fern, herb Robert, wood avens, dog's mercury, broad-leaved helleborine (*Epipactis helleborine*) and barren strawberry. Additional ground flora species recorded include; bramble, garlic mustard, black knapweed, cleavers, common hogweed, false oat grass, sow thistle (*Sonchus* sp.), broadleaved dock, and stitchwort sp.. Connections with other hedgerows or woodlands do not score four or more points, however there are two parallel hedgerows within 15 m (TR3.HH11 and TR3.HH13). There are at least three woodland species within one metre, in any direction, of the outermost edge of the hedgerow. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH13



This hedgerow is 178 m in length, approximately 1.5 m in height and 3 m wide. There are no gaps in the hedgerow. There is no ditch associated with the hedgerow and it is not supported by a bank/wall. There are three mature trees associated with the hedgerow. The canopy comprises a mix of species with beech, blackthorn, hawthorn, ash, rose, large-leaved lime, elm sp. (*Ulmus* sp.), oak (*Quercus* sp.) and holly present with no species being dominant (nine woody species). Schedule 2 ground flora species present include lady fern, male fern, dog's mercury, common polypody and barren strawberry. Additional ground flora species recorded include; garlic mustard, cleavers, cow parsley, common nettle, common hogweed, creeping bent, dandelion, ivy, meadowsweet and coltsfoot. Signs of use by mammals, include paths through the hedgerow. Connections with other hedgerows or woodlands do not score four or more points, however there is a parallel hedgerow within 15 m (TR3.HH10). At least three Schedule 2 woodland ground flora species are present within one metre of the outermost edge of the hedgerow. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH50



This hedgerow is 250 m in length, approximately 1.5 m in height and 1.5 m wide. There are no gaps in the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall. There are no mature trees associated with the hedgerow. The canopy is dominated by hawthorn with holly, rose and willow also present (four woody species). Schedule 2 ground flora species present include; lady fern, and dog's mercury. Additional ground flora species recorded include; bramble, bush vetch, ivy, cleavers, common nettle, male fern, and stitchwort sp.. Connections with other hedgerows or woodlands do not score four or more points, however there is one parallel hedgerows within 15 m (TR3.HH11 and TR3.HH13). The hedgerow does not appear to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified as present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH51



This hedgerow is 50 m in length, approximately 2 m in height and 1.5 m wide. There are no gaps in the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall. There is one mature tree associated with the hedgerow. The canopy is dominated by hawthorn with holly, rose and sycamore also present (four woody species). No schedule 2 ground flora species are present. Additional ground flora species recorded include; bramble, bush vetch, common nettle, cow parsley, creeping buttercup, ivy and raspberry. Connections with other hedgerows or woodlands do not score four or more points. There is a parallel woodland but no parallel hedgerow. There are at least three woodland species within one metre, in any direction, of the outermost edge of the hedgerow. The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. This hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR3.HH52



This hedgerow is 200 m in length, approximately 2 m in height and 2 m wide. There are no gaps in the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall. There are six mature trees associated with the hedgerow. The most abundant canopy species are hazel and hawthorn with holly, blackthorn, rose, willow and elder also present (seven woody species). Schedule 2 ground flora species present include dog's mercury. Additional ground flora species recorded include; bramble, common nettle, common hog weed, cleavers, creeping thistle, ivy, male fern and meadow sweet. Connections with other hedgerows or woodlands do not score four or more points, however there is one parallel hedgerows within 15 m (TR3.HH53). The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

TR3.HH53



This hedgerow is 80 m in length, approximately 2 m in height and 1.5 m wide. There are no gaps in the hedgerow. There is no ditch associated with the hedgerow. The hedgerow is not supported by a bank/wall. There are five mature trees associated with the hedgerow. The canopy is dominated by holly with hawthorn, hazel, blackthorn rose and elder also present (six woody species). Schedule 2 ground flora species present include; wood avens and dog's mercury. Additional ground flora species recorded include; bramble, garlic mustard, common vetch, male fern and sow thistle. Connections with other hedgerows or woodlands scores four points, and there is one parallel hedgerows within 15 m (TR3.HH52). The hedgerow appears to be more than 30 years old.

No Wildlife & Countryside Act protected species have been identified to be present. **This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.**

5 Hedgerow Summary

Overall, hedgerows within survey area are frequent in occurrence along the roadside field boundaries, as field boundaries away from roads and along residential property boundaries. Ten of the thirteen hedgerows surveyed are classified as important; TR3.HH1, TR3.HH5, TR3.HH6, TR3.HH7, TR3.HH9, TR3.HH10, TR3.HH13, TR3.HH52, TR3.HH53. Two hedgerows are obviously less than 30 years in age (TR3.HH8 and TR3.HH50) and are therefore not classified as important. Most hedgerows are managed (cut) and show signs of previously being laid, although some have become “leggy” due to lack of management. The most common dominant woody species are hawthorn and blackthorn with hazel, rose and elder occurring frequently.

The hedgerows provide bird nesting habitat and can provide commuting routes for bats. The hedgerow bases also provide a refuge for small mammals, large mammals (including badger) and amphibians. Some of the associated mature trees also have potential to support roosting bats (assessed separately) and raptors.

No invasive species were recorded as being present within the hedgerows.

Hedgerows are listed as a Habitat of Principal Importance under the Natural Environment and Rural Communities Act, 2006.

References

Bowland Ecology. 2020. TR3 Wray Compound Hedgerow Survey Report V1.

Bowland Ecology. 2020a. *TR3 Wray Car Park Hedgerow Survey Report V1*.

Bowland Ecology. 2020b. *TR3 Hedgerow Survey Report V2.*Bowland Ecology 2021 *TR3 Highways Ecology Survey Data Report – Hedgerows V1* 14.01.2021

The Hedgerow Regulations 1997. Available at [The Hedgerows Regulations 1997 \(legislation.gov.uk\)](https://www.legislation.gov.uk/uksi/1997/1000/contents/make) [accessed on 17.12.2020].



**Haweswater Aqueduct Resilience Programme -
Proposed Bowland Section
Supplementary Environmental Information**

Appendix B7: Annex 12

**Off-Site Highways Works – TR3 2022 Additional Areas Bat Tree
Report**

February 2022



Proposed Bowland Section

Haweswater Aqueduct Resilience Programme - Proposed Bowland Section



Project No: B27070CT
Document Title: Proposed Bowland Section
Supplementary Environmental Information (SEI)
Appendix B7 Annex 12: Off-Site Highways Works – TR3 2022 Additional Areas Bat Tree Report
Document ID: LCC_RVBC-BO_SEI-Appendix B7 Annex 12
Revision: 0
Date: February 2022
Client Name: United Utilities
Author: Bowland Ecology Limited




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Document history and status




Revision	Date	Description	Author	Checked	Reviewed	Approved



1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Jack Taylor, <i>Assistant Ecologist</i>	Approved:	Alice Helyar, <i>Principal Ecologist</i>
Report reference:	TR3 Highways Revisions 2021_Low Houses – bat tree assessment V1	Date:	11/11/2021
2 Project Drawings			
Bat Risk Trees and Tree Groups Proposed Bowland Section		BOW167_HARP_9.5_BATS_TR3_HIGHWAYS	
4 Ecology Surveys			
Surveyors:	Alice Helyar PhD, MSc, BSc (Hons), MCIEEM Jack Taylor Bsc (Hons), QCIEEM		
Survey date(s):	10/11/21		
Survey Method:	<p>This report details all trees currently identified in TR3 Highways Low Houses survey area, all of which have been subject to full assessment in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition) (Collins, 2016). A preliminary ground level assessment to identify trees supporting Potential Roosting Features (PRF's) was undertaken during the extended Phase 1 habitat survey. The assessment was aided by close focus binoculars and high-powered torches. All trees were assigned a unique reference number and their locations marked on a plan.</p> <p>Any evidence of bat usage and all PRF's visible from ground level were recorded for future reference, including their approximate height and orientation of access points. Representative photographs were taken and the tree species recorded. Where numerous trees within a group, such as a woodland or tree line were noted to have bat roosting potential, these were assessed as a group.</p> <p>Trees or groups of trees were classified as Low, Moderate or High suitability as bat roosting habitat (groups classified according to the highest potential tree) in accordance with Table 4.1 (Page 35) of The Good Practice Guidelines, summarised as follows:</p> <p>Low – A tree of sufficient size and age to contain PRFs but none seen from the ground, or features seen with only very limited roosting potential.</p> <p>Moderate – A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitats but unlikely to support a roost of high conservation status.</p> <p>High – A tree with one or more PRFs, that are obviously suitable for larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.</p>		
Weather Conditions:	10/11/2021 – Cloud cover (6/8), Wind Beaufort F0-1 N, 11 °C, no precipitation For weather conditions relating to the bat tree assessments undertaken in 2019-2020, refer to “TR3 Ecology Survey Data Report: Bat Tree Report V2” (Bowland Ecology, 2020). For weather conditions relating to the bat trees assessments undertaken at Wray Car Park, refer to ‘TR3 Wray Car Park Bat Tree Assessment Report V1’ (Bowland Ecology, 2020a).		
Limitations to the survey:	Trees at the boundary of the survey area and adjacent to large watercourses were assessed from one side only due to lack of access to view the other elevations. Further surveys may be required to		

	establish the presence of bat roosts.
4 Survey Results	
Individual Trees	
TR3.HBT17	
 <p>Bowland Ecology HARP TR3 10.11.2023 11:06 54.11348, -2.54678</p>	<p>NGR: SD 64344 98710</p> <p>Species: Oak species (<i>Quercus</i> sp.)</p> <p>Categorisation: Moderate potential</p>
TR3.HBT18	
 <p>Bowland Ecology HARP TR3 10.11.2023 11:12 54.11348, -2.54691</p>	<p>NGR: SD 64562 69310</p> <p>Species: Ash (<i>Fraxinus excelsior</i>)</p> <p>Categorisation: Low potential</p>
TR3.HBT19	
No picture	<p>NGR: SD 64340 68680</p> <p>Species: lime</p> <p>Categorization: low</p>
TR3.HBT20	

	<p>NGR: SD 63904 68060</p> <p>Species: oak species (<i>Quercus</i> sp.)</p> <p>Categorization: low</p>
TR3.HBT21	
	<p>NGR: SD 63901 68071</p> <p>Species: oak species (<i>Quercus</i> sp.)</p> <p>Categorization: moderate</p>
TR3.HBT22	
	<p>NGR: SD 63921 68071</p> <p>Species: oak (<i>Quercus</i> sp.)</p> <p>Categorization: moderate</p>
TR3.HBT23	

 <p>Bowland Ecology HARP TR3 10.11.2021 11:35 54.10737, -2.55365</p>	<p>NGR: SD 63915 98085</p> <p>Species: oak (<i>Quercus</i> sp.)</p> <p>Categorization: moderate</p>
TR3.HBT24	
 <p>Bowland Ecology HARP TR3 10.11.2021 11:36 54.10728, -2.55361</p>	<p>NGR: SD 63972 68128</p> <p>Species: oak (<i>Quercus</i> sp.)</p> <p>Categorization: low</p>
Tree groups	
TR3.HBG17	
 <p>Bowland Ecology HARP TR3 10.11.2021 11:10 54.11311, -2.54676</p>	<p>NGR: SD 64440 68763</p> <p>Species: oak, alder, beech, silver birch</p> <p>Number of trees: >100</p> <p>Categorization: moderate</p>
TR3.HBG18	

	<p>NGR: SD 64047 68310</p> <p>Species: oak, sycamore, ash</p> <p>Number of trees: >100</p> <p>Categorization: high</p>
TR3.HBG19	
	<p>NGR: SD 64050 68207</p> <p>Species: oak, sycamore, alder</p> <p>Number of trees: 10</p> <p>Categorization: moderate</p>
TR3.HBG20	
	<p>NGR: SD 63941 98119</p> <p>Species: oak, hazel</p> <p>Number of trees: approximately 15</p> <p>Categorization: moderate</p>
TR3.HBG21	

 <p>Bowland Ecology HABP-TR3 10.11.2021 11:37 54.12381, -2.57947</p>	<p>NGR:SD 63883 68044</p> <p>Species: alder (<i>Alnus glutinosa</i>)</p> <p>Number of trees: 2</p> <p>Categorization: low</p>
<p>TR3.HBG22</p>	
 <p>Bowland Ecology HABP-TR3 10.11.2021 11:40 54.12381, -2.57947</p>	<p>NGR:SD 63837 67525</p> <p>Species: oak, silverbirch, beech</p> <p>Number of trees: >100</p> <p>Categorization: moderate</p>

References

Bowland Ecology. (2020). *TR3 Ecology Survey Data Report: Bat Tree Report V2*.

Bowland Ecology. (2020a). *TR3 Wray Car Park Ecology Survey Data Report: Bat Tree Assessment V1*.

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



**Haweswater Aqueduct Resilience Programme -
Proposed Bowland Section
Supplementary Environmental Information**

Appendix B7: Annex 13

**Off-Site Highways Works – TR3 2022 Additional Areas Phase 1
Habitat Survey Plan**

February 2022



Proposed Bowland Section

Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

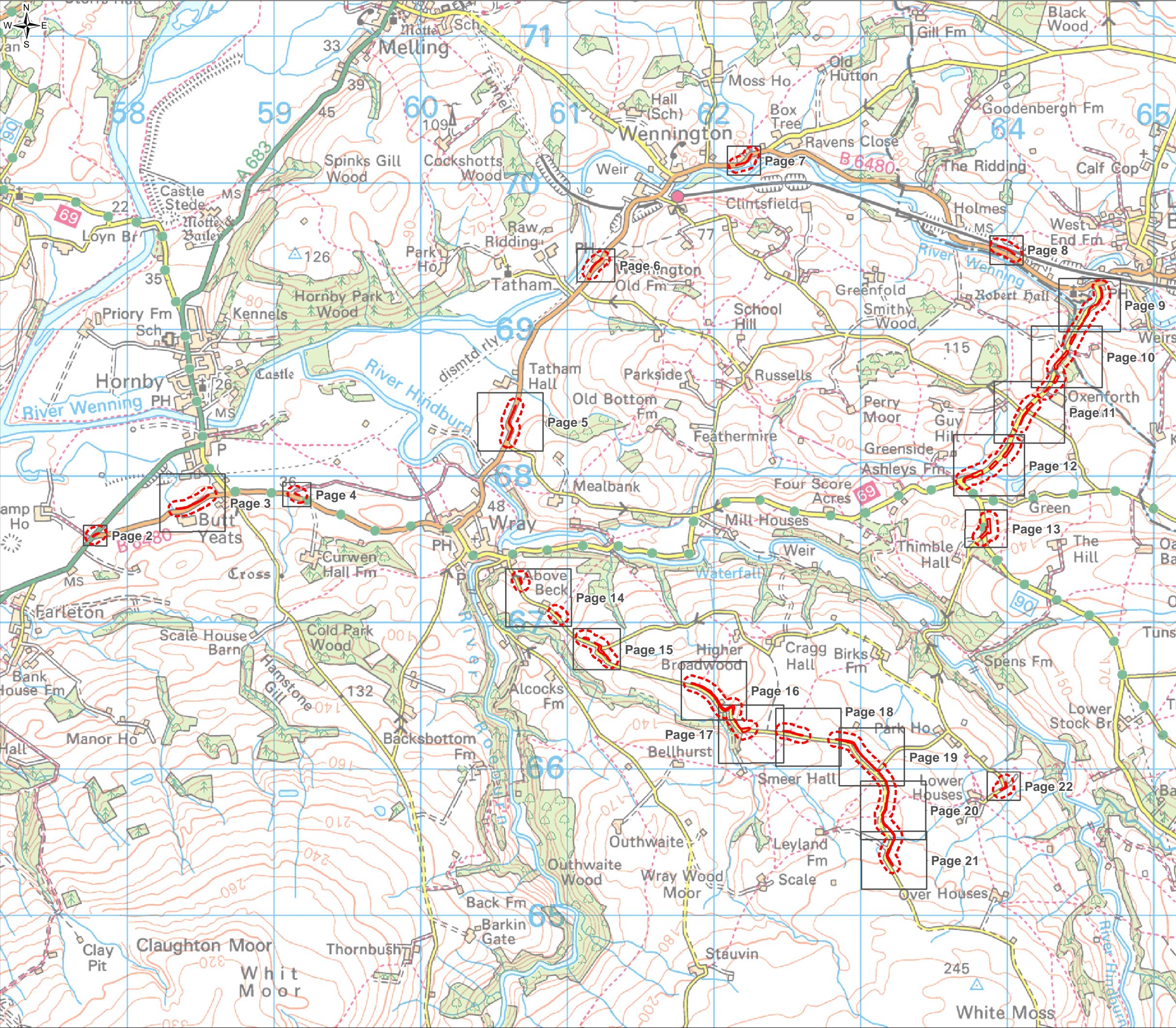
Project No: B27070CT
Document Title: Proposed Bowland Section
Supplementary Environmental Information (SEI)
Appendix B7 Annex 13: Off-Site Highways Works – TR3 2022 Additional Areas Phase 1
Habitat Survey Plan
Document ID: LCC_RVBC-BO_SEI-Appendix B7 Annex 13
Revision: 0
Date: February 2022
Client Name: United Utilities
Author: Bowland Ecology Limited

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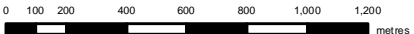
Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved

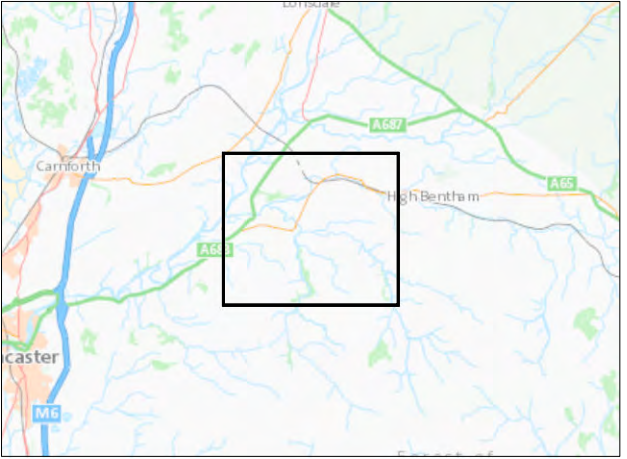
FIGURE 5B




- Legend
- Highways improvement works
 - Highways improvement works - 50m buffer
 - Page and page number



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
 Water for the North West					
PROJECT UNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 1 OF 22					
SCALE 1:25,000					SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.1					REVISION 0

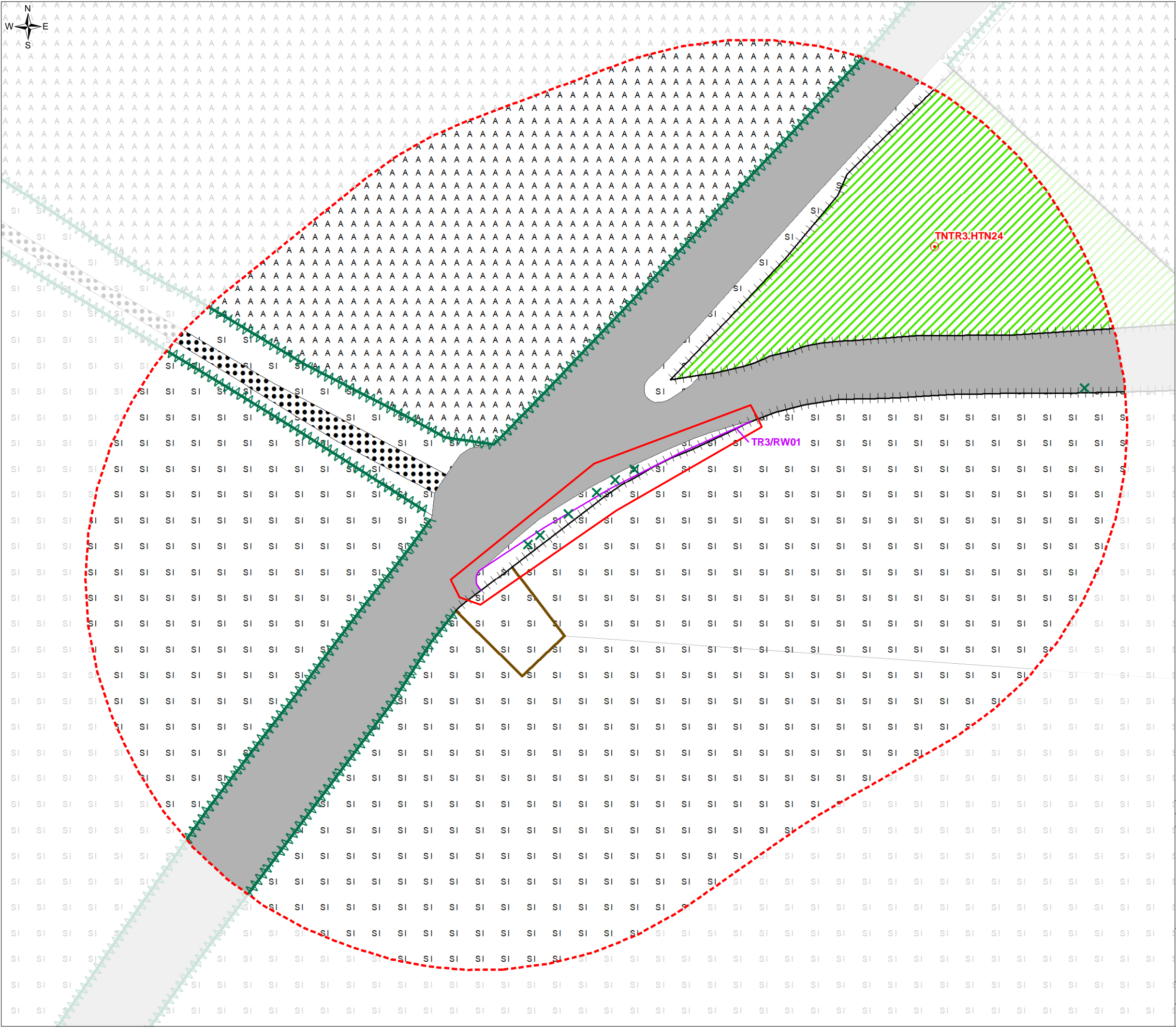


FIGURE 5B

Legend

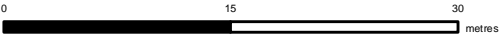
- Highways improvement works
- Highways improvement works - 50m buffer

Highways Proposed Works

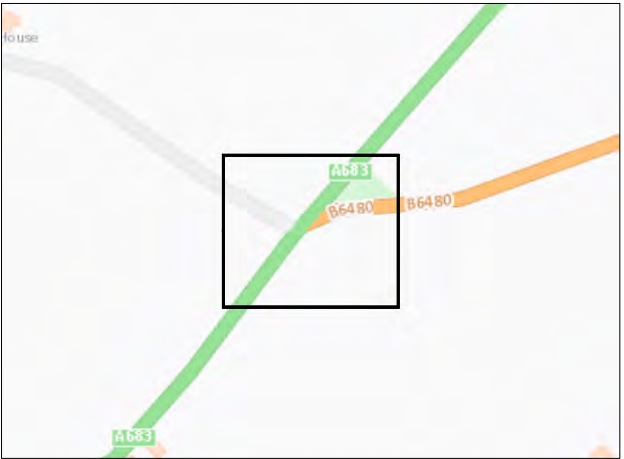
- Road widening

Phase Habitat 1 Survey

- Target note
- Scattered scrub
- Native species-rich intact hedge
- Fence
- Wall
- Plantation coniferous woodland
- Poor semi-improved grassland
- Arable
- Bare ground
- Hardstanding



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




B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
<div> Water for the North West</div>					
PROJECT UNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 2 OF 22					
SCALE 1:500					SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.2					REVISION 0



FIGURE 5B

Highways improvement works

Highways improvement works - 50m buffer

Highways Proposed Works

Road widening

Running water

Arable

Amenity grassland

Building

Bare ground

Hardstanding

Phase Habitat 1 Survey

Target note

Scattered scrub

Scattered broad-leaved tree

Native species-rich intact hedge

Species-poor intact hedge

Fence

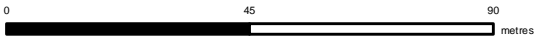
Wall

Plantation broad-leaved woodland

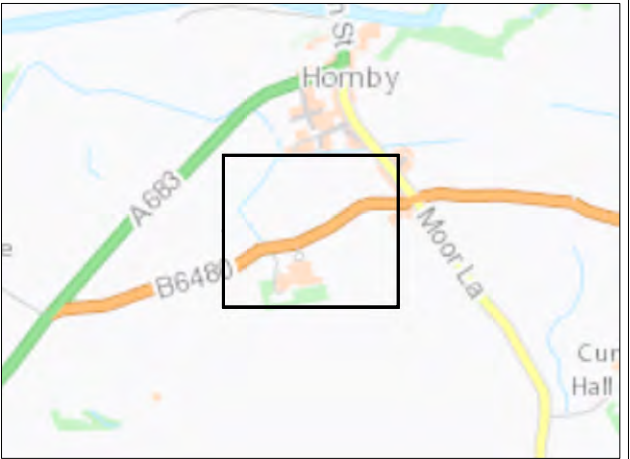
Improved grassland

Poor semi-improved grassland

Tall ruderal



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



PROJECT UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II
PHASE 1 HABITAT SURVEY
PAGE 3 OF 22

SCALE 1:1,400	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.3	REVISION 0



FIGURE 5B

Legend

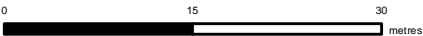
- Highways improvement works
- Highways improvement works - 50m buffer

Highways Proposed Works

- Road widening

Phase Habitat 1 Survey

- Target note
- Scattered scrub
- Native species-rich intact hedge
- Species-poor intact hedge
- Fence
- Semi-improved neutral grassland
- Improved grassland
- Poor semi-improved grassland
- Building
- Bare ground
- Hardstanding



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



PROJECT UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II
PHASE 1 HABITAT SURVEY
PAGE 4 OF 22

SCALE 1:600	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.4	REVISION 0



FIGURE 5B

Legend

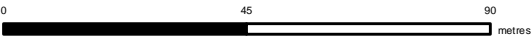
- Highways improvement works
- Highways improvement works - 50m buffer

Highways Proposed Works

- Road widening

Phase Habitat 1 Survey

- Native species-rich intact hedge
- Species-poor intact hedge
- Fence
- Semi-improved neutral grassland
- Poor semi-improved grassland
- Hardstanding



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



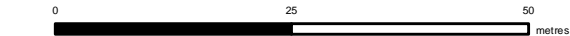
PROJECT UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II
PHASE 1 HABITAT SURVEY
PAGE 5 OF 22

SCALE 1:1,400	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.5	REVISION 0



FIGURE 5B

- Legend**
- Highways improvement works
 - Highways improvement works - 50m buffer
 - Highways Proposed Works
 - Road widening
 - Phase Habitat 1 Survey
 - Target note
 - Scattered scrub
 - Scattered broad-leaved tree
 - Scattered coniferous tree
 - Running water
 - Native species-rich intact hedge
 - Species-poor intact hedge
 - Fence
 - Wall
 - Semi-natural broad-leaved woodland
 - Dense/continuous scrub
 - Poor semi-improved grassland
 - Running water
 - Amenity grassland
 - Building
 - Bare ground
 - Hardstanding



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



PROJECT UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II
PHASE 1 HABITAT SURVEY
PAGE 6 OF 22

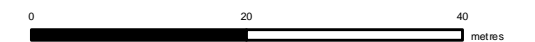
SCALE 1:800	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.6	REVISION 0



FIGURE 5B

Legend

- Highways improvement works
- Highways improvement works - 50m buffer
- Highways Proposed Works
 - Road widening
- Phase Habitat 1 Survey
 - Target note
 - Scattered broad-leaved tree
 - Scattered coniferous tree
 - Running water
 - Native species-rich intact hedge
 - Species-poor intact hedge
 - Fence
 - Wall
 - Semi-natural broad-leaved woodland
 - Semi-natural mixed woodland
- Semi-improved neutral grassland
- Poor semi-improved grassland
- Running water
- Amenity grassland
- Building
- Hardstanding



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



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VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



PROJECT
UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II
PHASE 1 HABITAT SURVEY
PAGE 7 OF 22

SCALE 1:700	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.7	REVISION 0

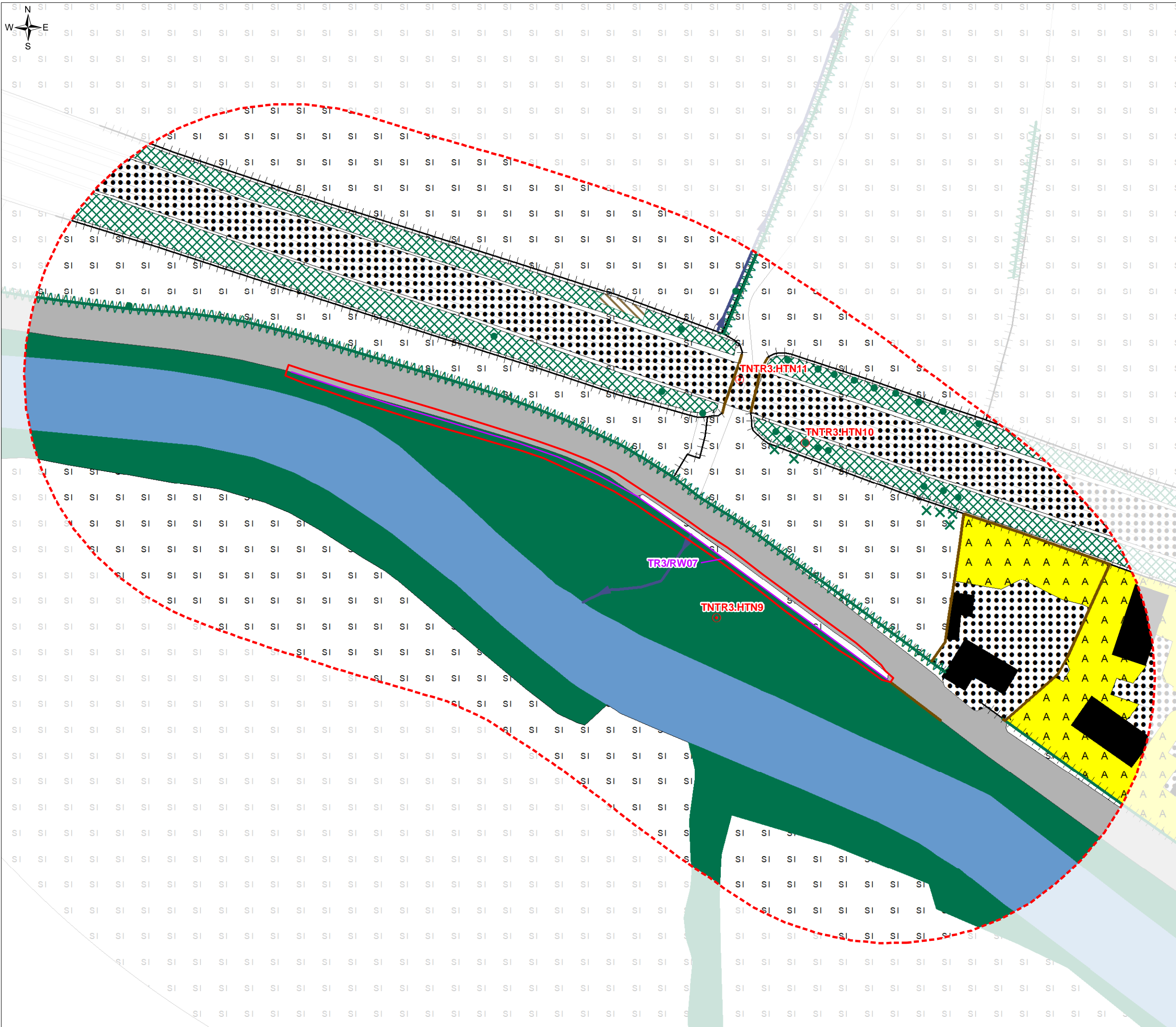
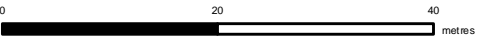


FIGURE 5B

- Legend**
- Highways improvement works
 - Highways improvement works - 50m buffer
 - Highways Proposed Works
 - Road widening
 - Phase Habitat 1 Survey
 - Target note
 - Scattered scrub
 - Scattered broad-leaved tree
 - Running water
 - Native species-rich intact hedge
 - Species-poor intact hedge
 - Fence
 - Wall
 - Semi-natural broad-leaved woodland
 - Dense/continuous scrub
- Poor semi-improved grassland
 - Tall ruderal
 - Running water
 - Amenity grassland
 - Building
 - Bare ground
 - Hardstanding



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




B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
<div> Water for the North West</div>					
PROJECT UNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 8 OF 22					
SCALE 1:700					SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.8					REVISION 0



FIGURE 5B

Legend

- Highways improvement works
- Highways improvement works - 50m buffer
- Highways Proposed Works
 - Road widening
- Phase Habitat 1 Survey
 - Target note
 - Scattered broad-leaved tree
 - Scattered coniferous tree
 - Running water
 - Native species-rich intact hedge
 - Species-poor intact hedge
 - Dry ditch
 - Species-poor defunct hedge
 - Fence
 - Wall
- Semi-natural broad-leaved woodland
- Semi-improved neutral grassland
- Poor semi-improved grassland
- Running water
- Dense continuous saltmarsh
- Acid/neutral exposure inland cliff
- Amenity grassland
- Building
- Private garden
- Bare ground
- Hardstanding



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



PROJECT UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II
PHASE 1 HABITAT SURVEY
PAGE 9 OF 22

SCALE 1:1,300	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.9	REVISION 0



FIGURE 5B

Highways improvement works

Highways improvement works - 50m buffer

Highways Proposed Works

Road widening

Target note

Scattered scrub

Scattered broad-leaved tree

Running water

Native species-rich intact hedge

Dry ditch

Species-poor defunct hedge

Fence

Semi-natural broad-leaved woodland

Semi-improved neutral grassland

Marsh/marshy grassland

Poor semi-improved grassland

Running water

Hardstanding

Phase Habitat 1 Survey

Target note

Scattered scrub

Scattered broad-leaved tree

Running water

Native species-rich intact hedge

Dry ditch

Species-poor defunct hedge

Fence

Semi-natural broad-leaved woodland

Semi-improved neutral grassland

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

B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE

PROJECT	UNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 10 OF 22
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SCALE 1:1,500	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.10	REVISION 0

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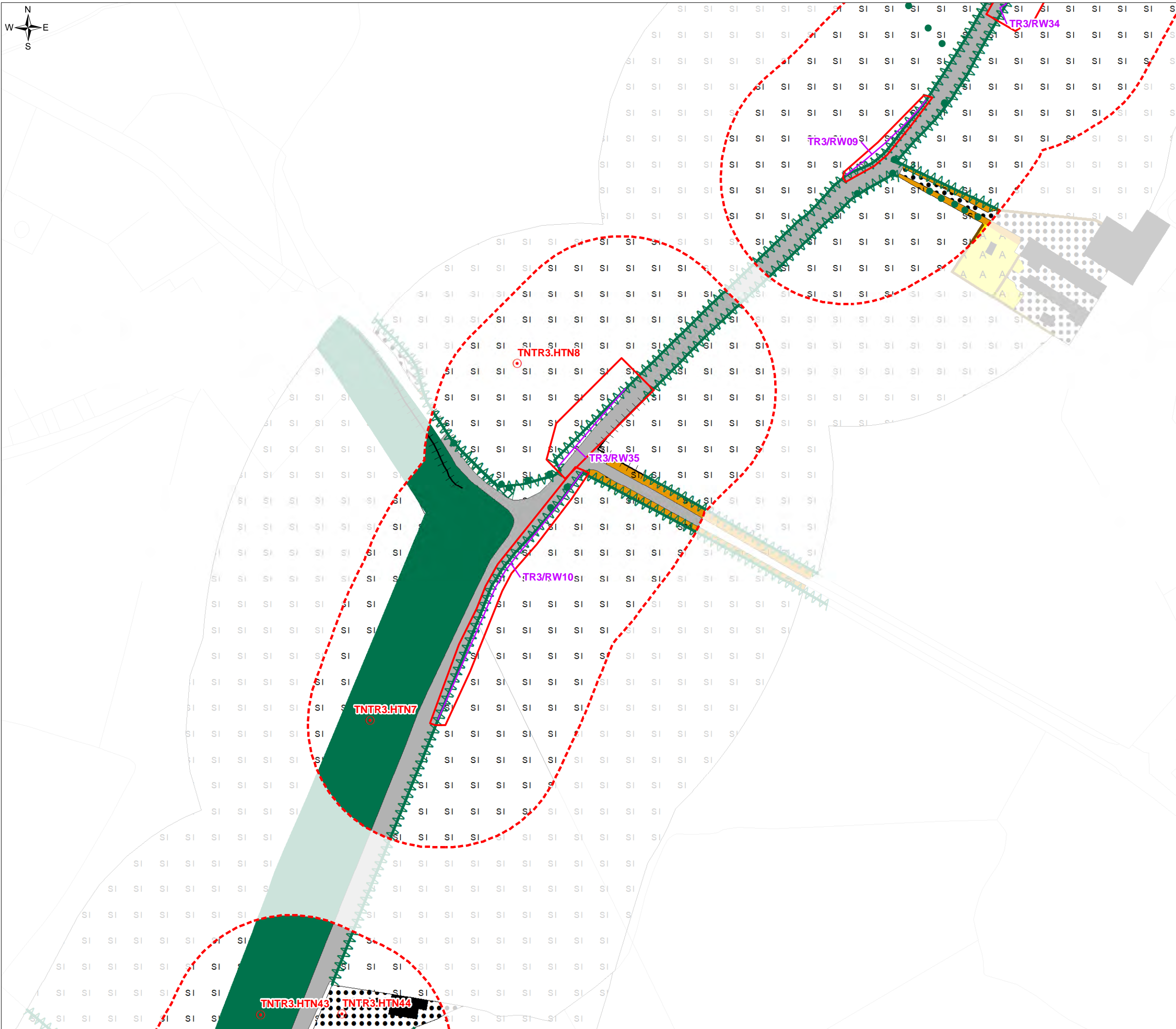


FIGURE 5B

Legend

Highways improvement works

Highways improvement works - 50m buffer

Highways Proposed Works

Road widening

Phase Habitat 1 Survey

Target note

Scattered broad-leaved tree

Native species-rich intact hedge

Species-poor intact hedge

Fence

Wall

Semi-natural broad-leaved woodland

Dense/continuous scrub

Semi-improved neutral grassland

Poor semi-improved grassland

Tall ruderal

Amenity grassland

Building

Bare ground

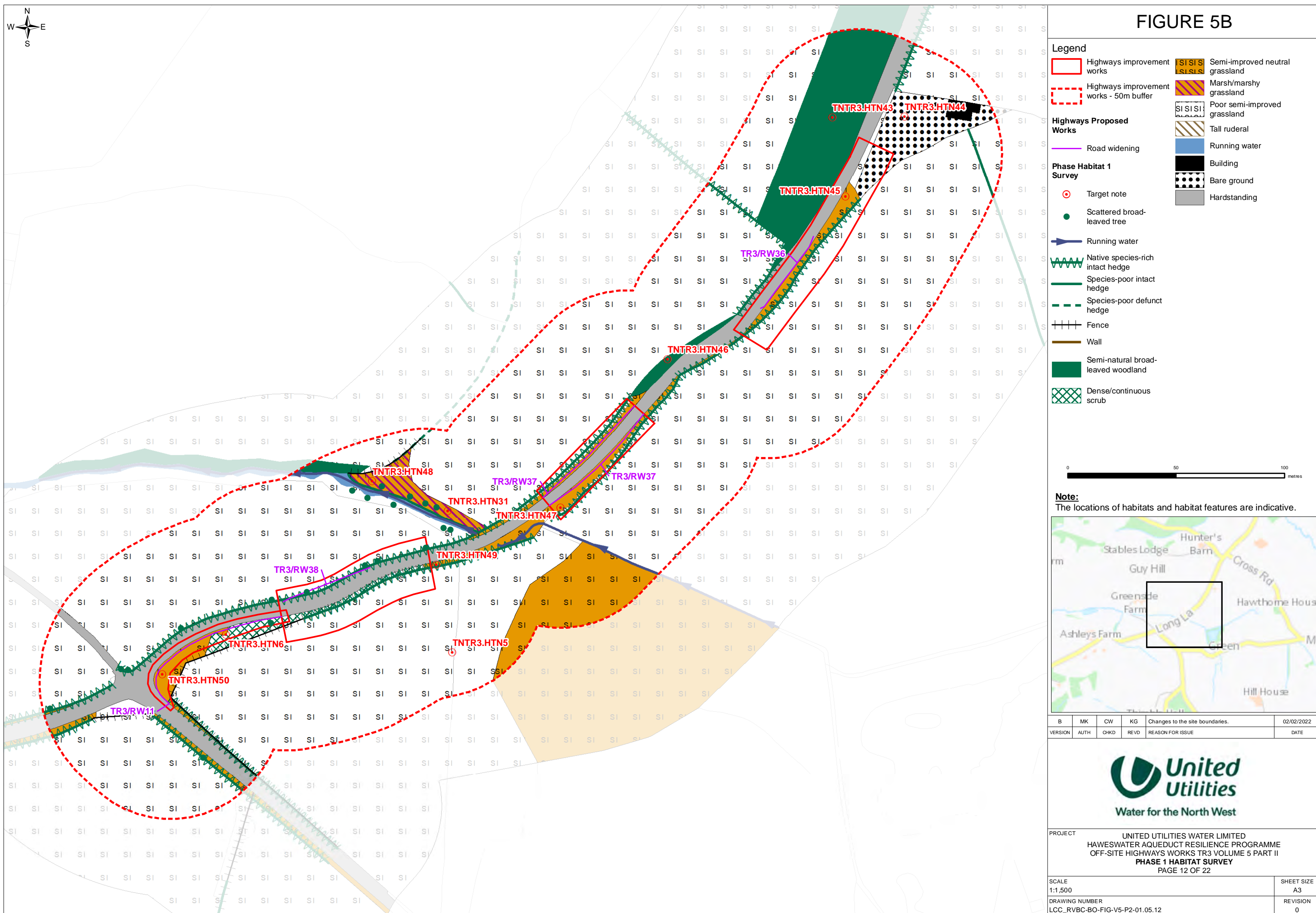
Hardstanding

050100metres

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

B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
<div><div><div><div></div><div>United Utilities</div><div>Water for the North West</div></div></div></div>					
PROJECTUNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 11 OF 22					
SCALE 1:1,500					SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.11					REVISION 0

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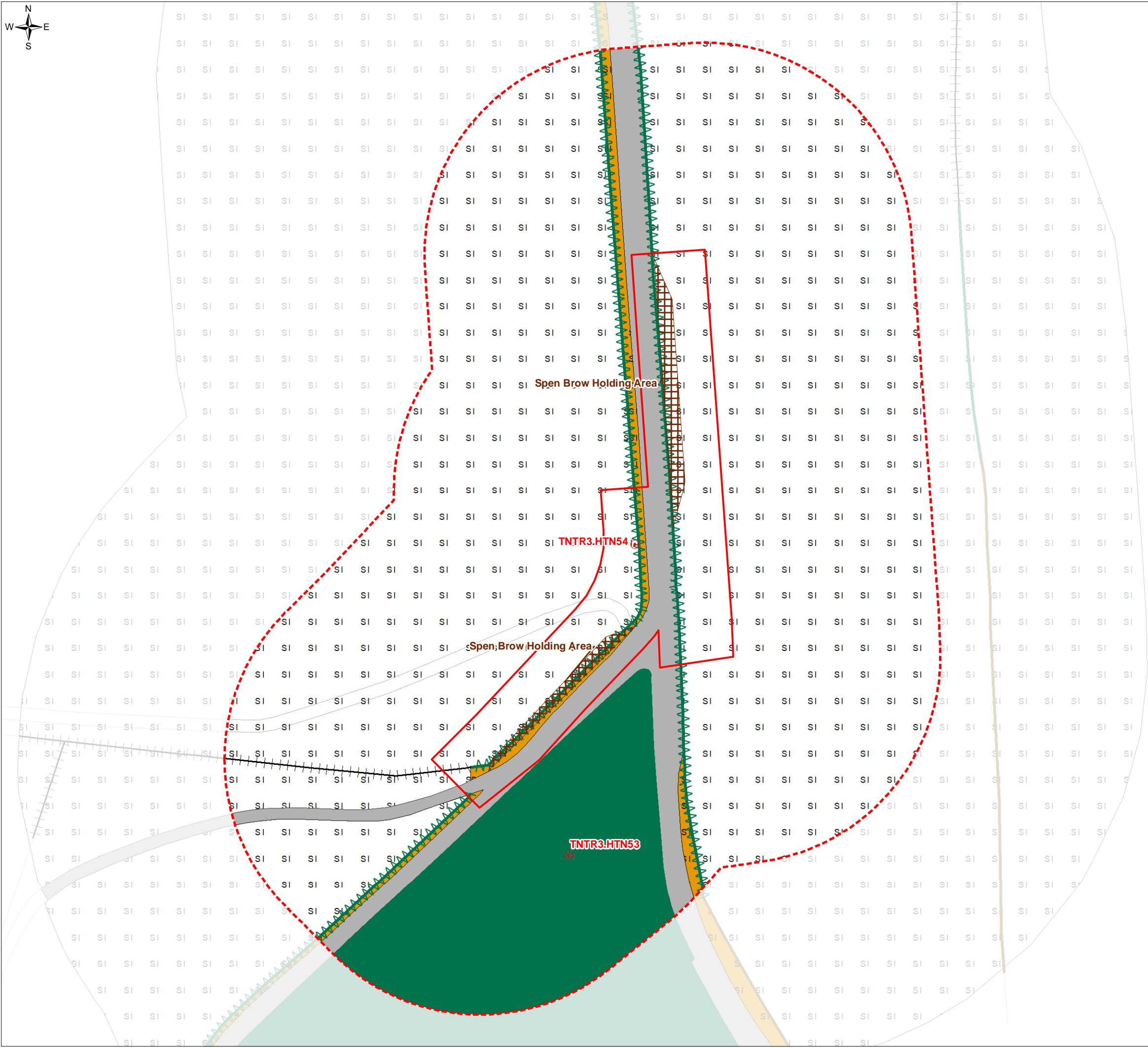


FIGURE 5B

Legend

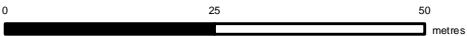
- Highways improvement works
- Highways improvement works - 50m buffer

Highways Proposed Works

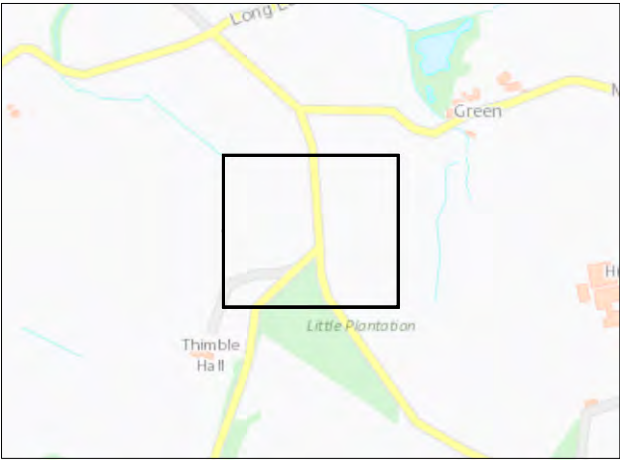
- Passing place

Phase Habitat 1 Survey

- Target note
- Native species-rich intact hedge
- Species-poor intact hedge
- Fence
- Wall
- Semi-natural broad-leaved woodland
- Semi-improved neutral grassland
- Poor semi-improved grassland
- Hardstanding



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



PROJECT	UNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 13 OF 22
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SCALE 1:900	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.13	REVISION 0

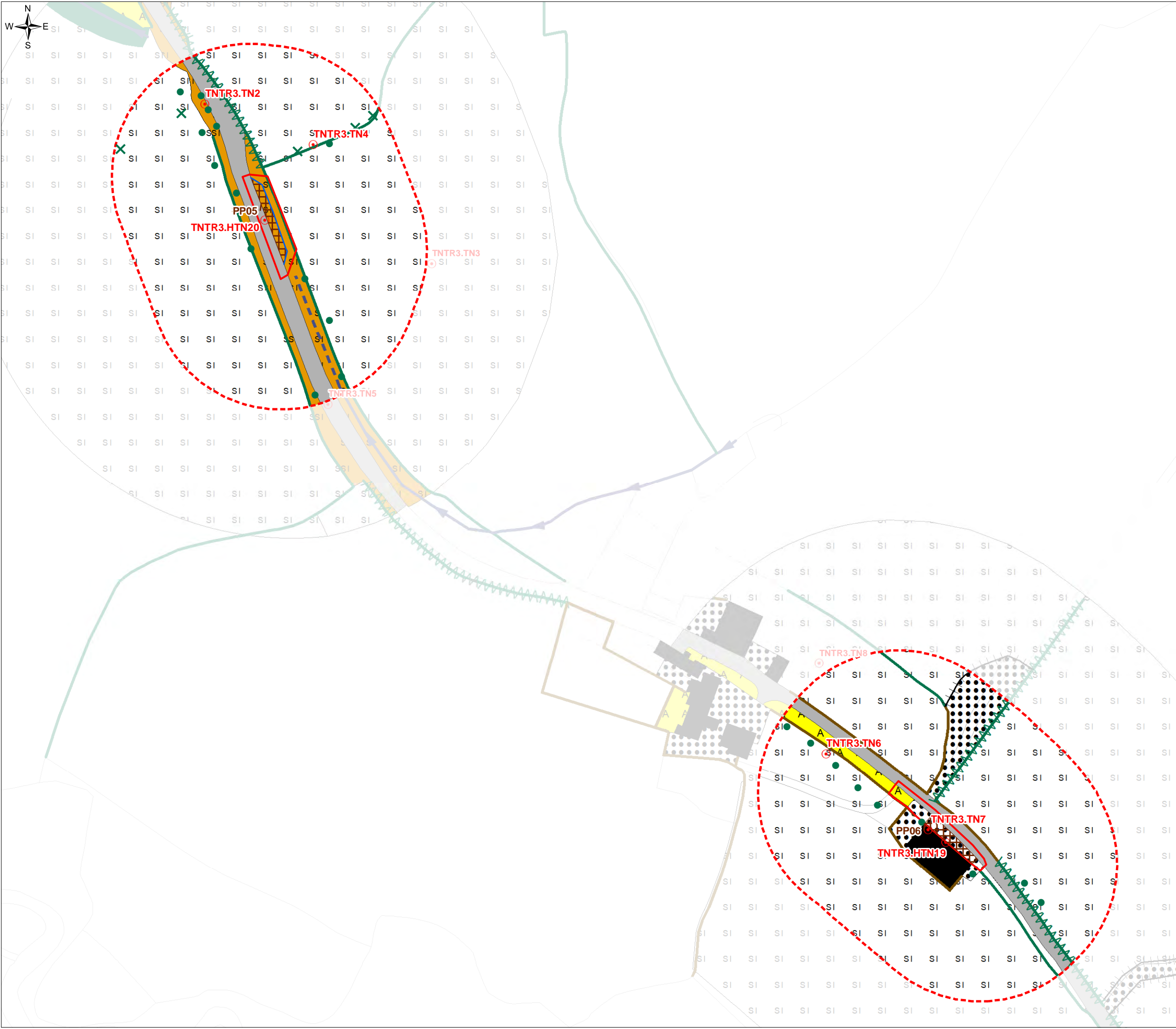


FIGURE 5B

Legend

Highways improvement works

Highways improvement works - 50m buffer

Highways Proposed Works

Back of kerb

Passing place

Phase Habitat 1 Survey

Target note

Scattered scrub

Scattered broad-leaved tree

Running water

Native species-rich intact hedge

Species-poor intact hedge

Dry ditch

Fence

Wall

Semi-natural broad-leaved woodland

Semi-improved neutral grassland

Poor semi-improved grassland

Amenity grassland

Building


Bare ground

Hardstanding



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
<div><div><div>Water for the North West</div></div></div>					
PROJECTUNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 14 OF 22					
SCALE 1:1,400					SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.14					REVISION 0

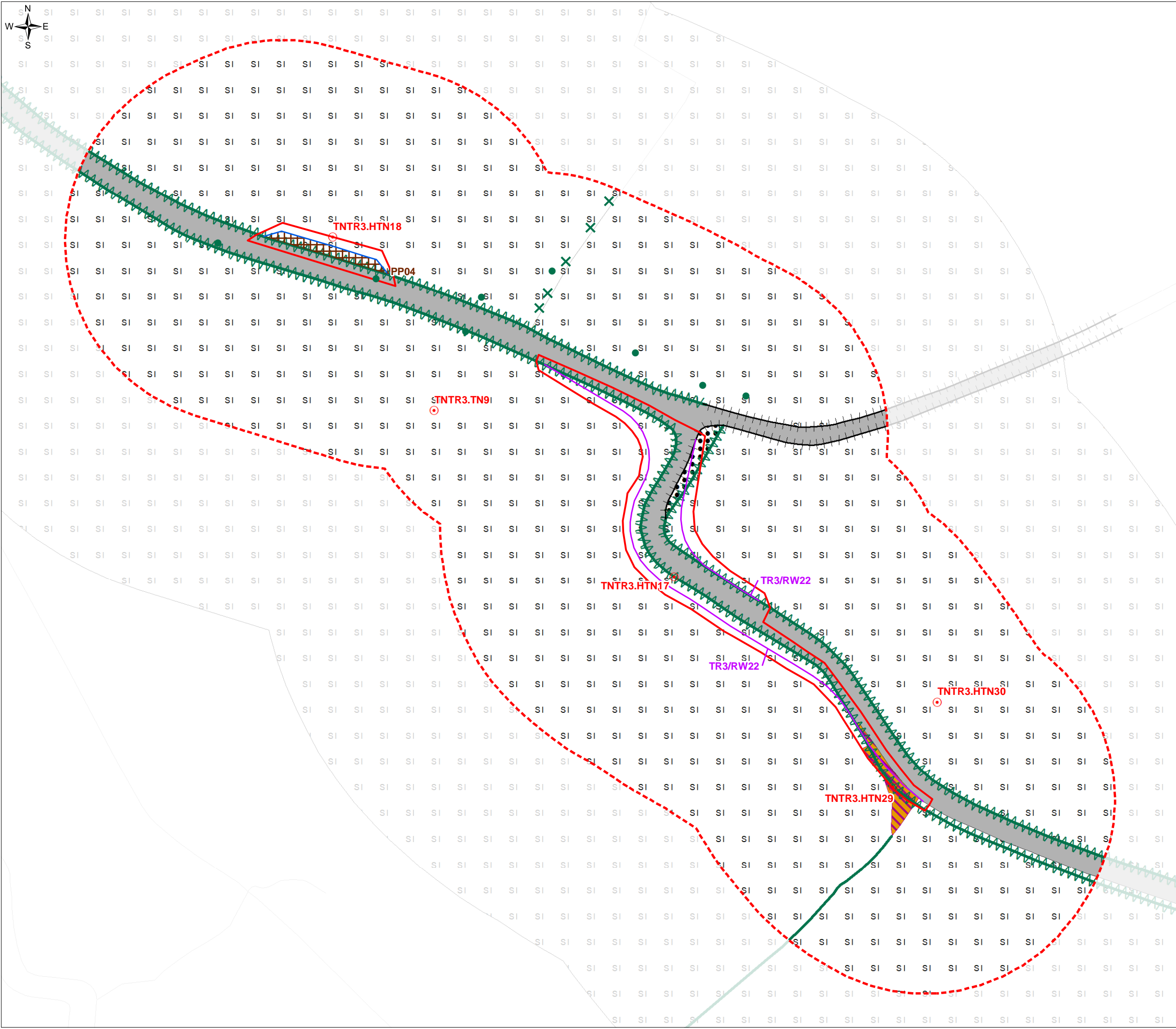


FIGURE 5B

Legend

Highways improvement works

Highways improvement works - 50m buffer

Hardstanding

Highways Proposed Works

Back of kerb

Road widening

Passing place

Phase Habitat 1 Survey

Target note

Scattered scrub

Scattered broad-leaved tree

Native species-rich intact hedge

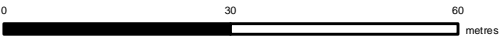
Species-poor intact hedge

Fence

Marsh/marshy grassland

Poor semi-improved grassland

Bare ground



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




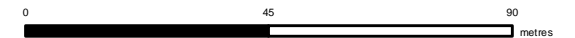
B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
<div><div><div>Water for the North West</div></div></div>					
PROJECTUNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 15 OF 22					
SCALE 1:1,000					SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.15					REVISION 0



FIGURE 5B

Legend

- Highways improvement works
- Highways improvement works - 50m buffer
- Highways Proposed Works
 - Road widening
- Phase Habitat 1 Survey
 - Target note
 - Scattered scrub
 - Scattered broad-leaved tree
 - Scattered introduced shrub
 - Running water
 - Native species-rich intact hedge
 - Dry ditch
 - Fence
 - Semi-natural broad-leaved woodland
 - Dense/continuous scrub
- Semi-improved neutral grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Swamp
- Running water
- Amenity grassland
- Building
- Hardstanding



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



PROJECT UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II
PHASE 1 HABITAT SURVEY
PAGE 16 OF 22

SCALE 1:1,400	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.16	REVISION 0

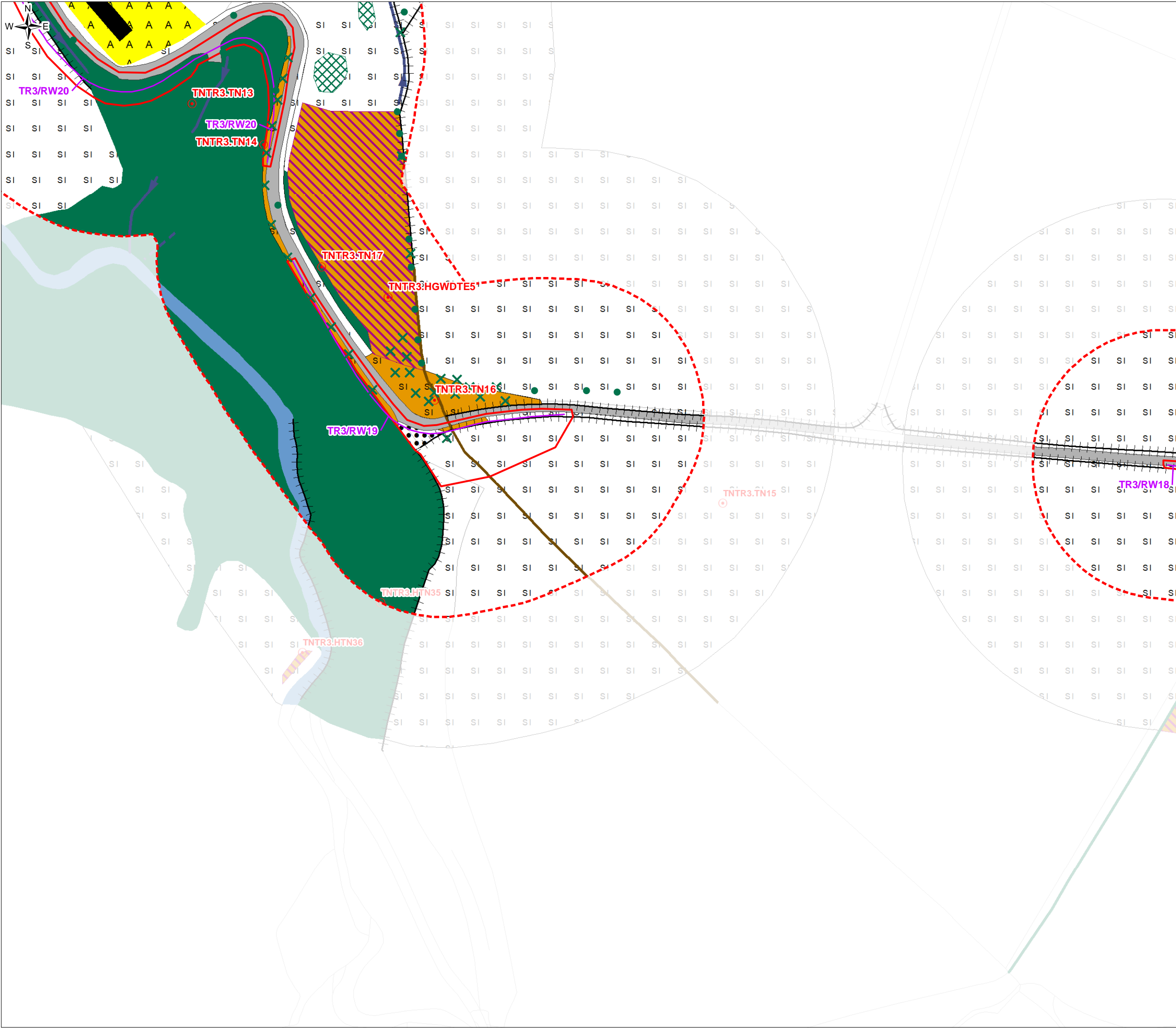


FIGURE 5B

Legend

Highways improvement works

Highways improvement works - 50m buffer

Highways Proposed Works

Phase Habitat 1 Survey

Target note

Scattered scrub

Scattered broad-leaved tree

Running water

Species-poor intact hedge

Dry ditch

Fence

Wall

Semi-natural broad-leaved woodland

Dense/continuous scrub

Semi-improved neutral grassland

Marsh/marshy grassland

Poor semi-improved grassland

Running water

Amenity grassland

Building

Bare ground

Hardstanding

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

B	MK	CW	KG	Changes to the site boundaries.	02/02/2022													
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE													
<div><div><div><div><div></div><div></div></div><div><div>United</div><div>Utilities</div></div><div>Water for the North West</div></div></div></div> <tr><td colspan="6">PROJECTUNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 17 OF 22</td></tr> <tr><td colspan="5">SCALE 1:1,400</td><td>SHEET SIZE A3</td></tr> <tr><td colspan="5">DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.17</td><td>REVISION 0</td></tr>	PROJECTUNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 17 OF 22						SCALE 1:1,400					SHEET SIZE A3	DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.17					REVISION 0
PROJECTUNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 17 OF 22																		
SCALE 1:1,400					SHEET SIZE A3													
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.17					REVISION 0													

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FIGURE 5B

Legend

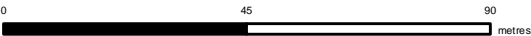
- Highways improvement works
- Highways improvement works - 50m buffer

Highways Proposed Works

- Road widening

Phase Habitat 1 Survey

- Target note
- Scattered scrub
- Species-poor intact hedge
- Dry ditch
- Fence
- Wall
- Semi-improved neutral grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Hardstanding



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



PROJECT UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II
PHASE 1 HABITAT SURVEY
PAGE 18 OF 22

SCALE 1:1,400	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.18	REVISION 0

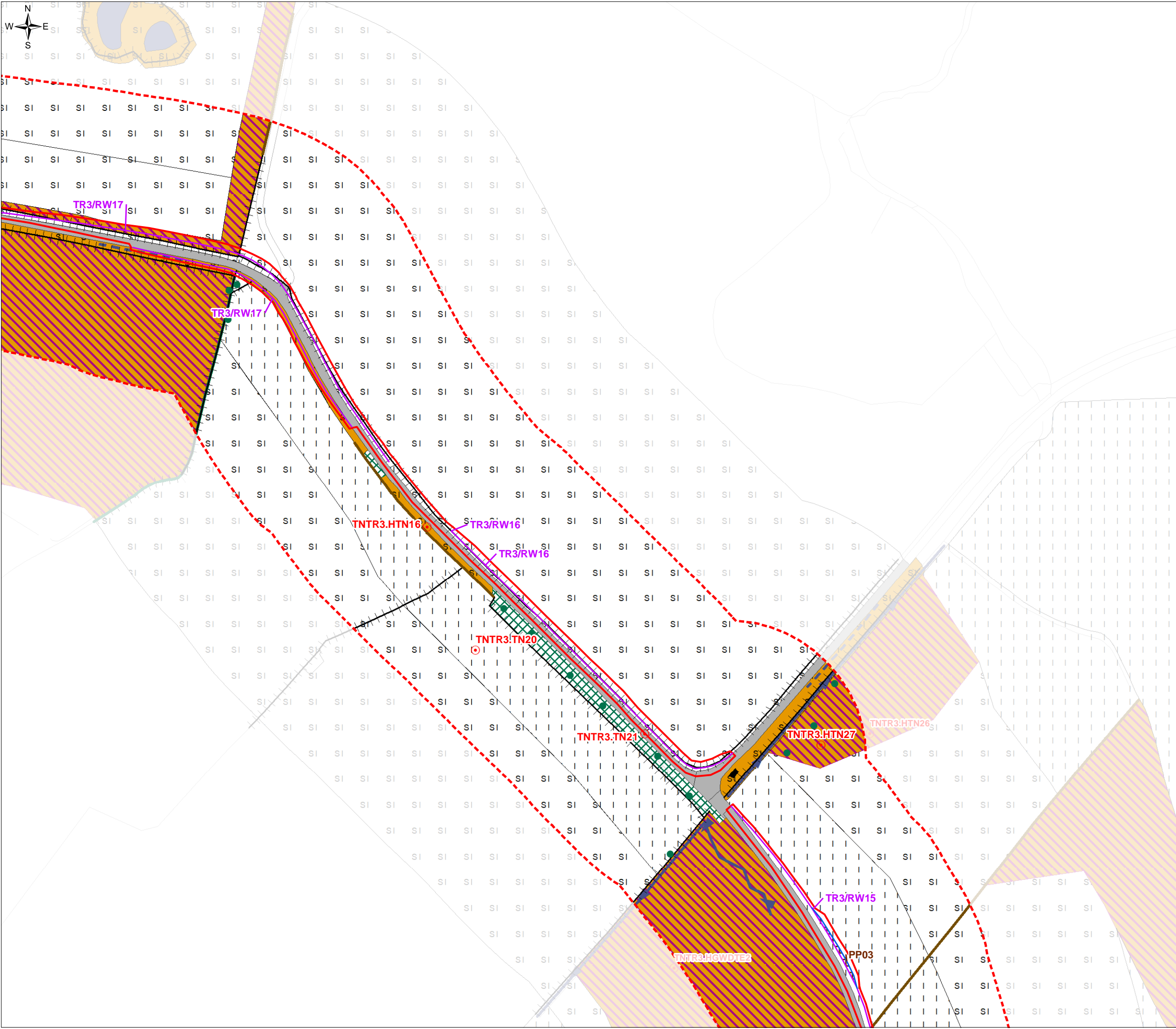


FIGURE 5B

Legend

Highways improvement works

Highways improvement works - 50m buffer

Highways Proposed Works

Back of kerb

Road widening

Passing place

Phase Habitat 1 Survey

Target note

Scattered broad-leaved tree

Running water

Species-poor intact hedge

Dry ditch

Fence

Wall

Dense/continuous scrub

Semi-improved neutral grassland

Improved grassland

Marsh/marshy grassland

Poor semi-improved grassland

Standing water


Building

Hardstanding



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
<div><p>Water for the North West</p></div>					
PROJECT UNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 19 OF 22					
SCALE 1:1,400					SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.19					REVISION 0

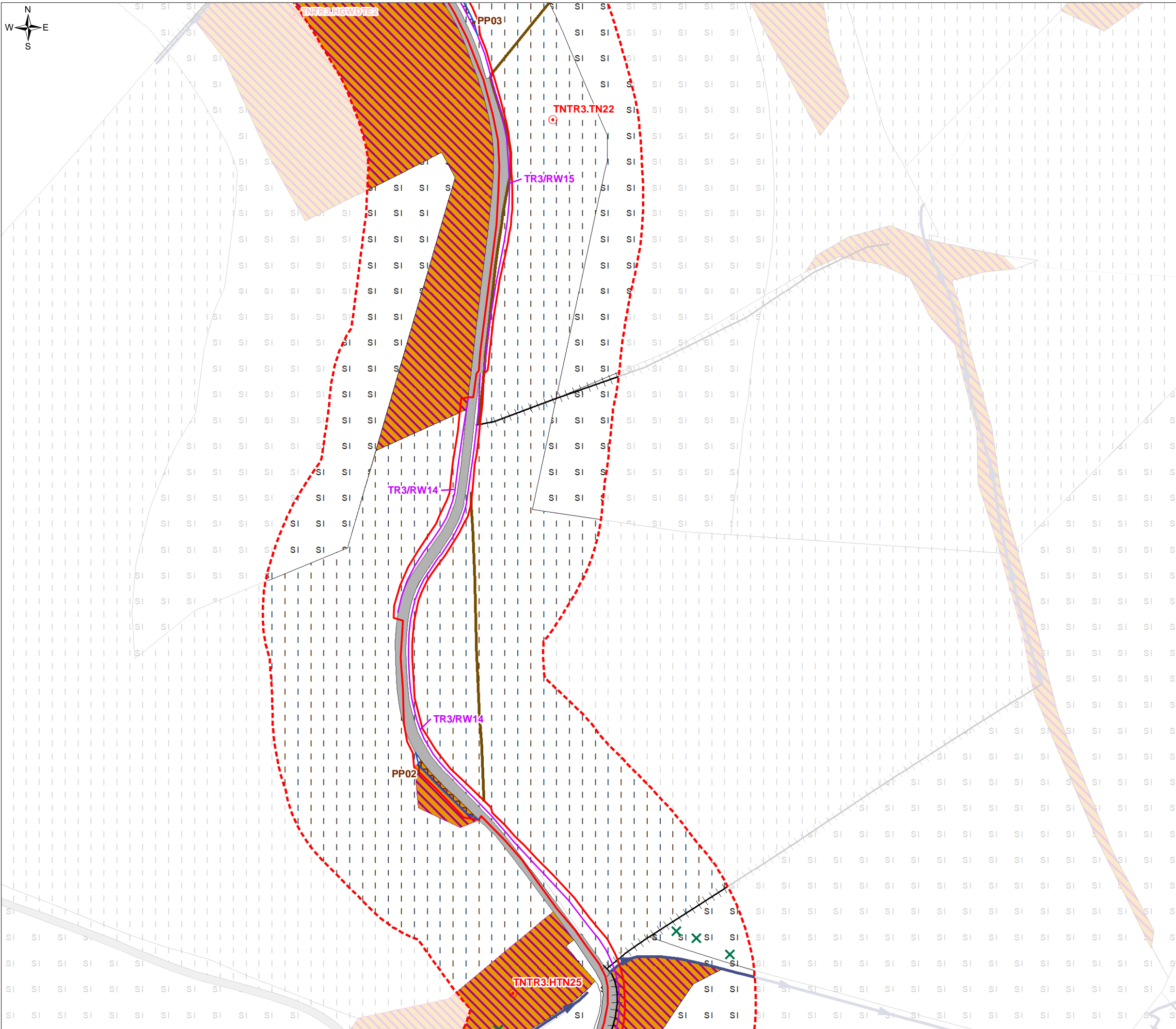
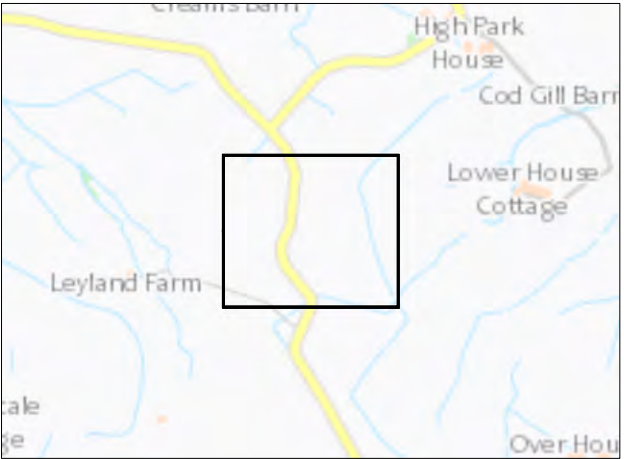


FIGURE 5B

- Legend**
- Highways improvement works
 - Highways improvement works - 50m buffer
 - Highways Proposed Works**
 - Back of kerb
 - Road widening
 - Passing place
 - Phase Habitat 1 Survey**
 - Target note
 - Scattered scrub
 - Running water
 - Fence
 - Wall
 - Improved grassland
 - Marsh/marshy grassland
 - Poor semi-improved grassland
 - Hardstanding



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




B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
<div><p>Water for the North West</p></div>					
PROJECT UNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 20 OF 22					
SCALE 1:1,400					SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.20					REVISION 0



FIGURE 5B

Highways improvement works

Highways improvement works - 50m buffer

Standing water

Hardstanding

Highways Proposed Works

Back of kerb

Road widening

Passing place

Phase Habitat 1 Survey

Target note

Scattered scrub

Scattered broad-leaved tree

Running water

Dry ditch

Fence

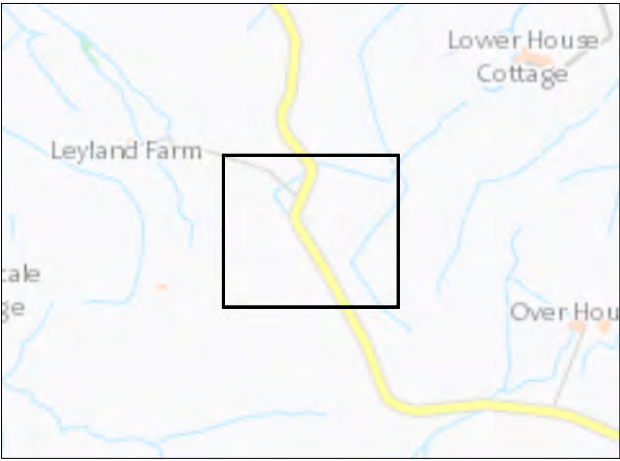
Improved grassland

Marsh/marshy grassland

Poor semi-improved grassland



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



B	MK	CW	KG	Changes to the site boundaries.	02/02/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
<div><div><div><div><div></div><div>United Utilities</div><div>Water for the North West</div></div></div><div><div>PROJECT</div><div>UNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 21 OF 22</div></div></div></div>					
SCALE 1:1,400					SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.21					REVISION 0

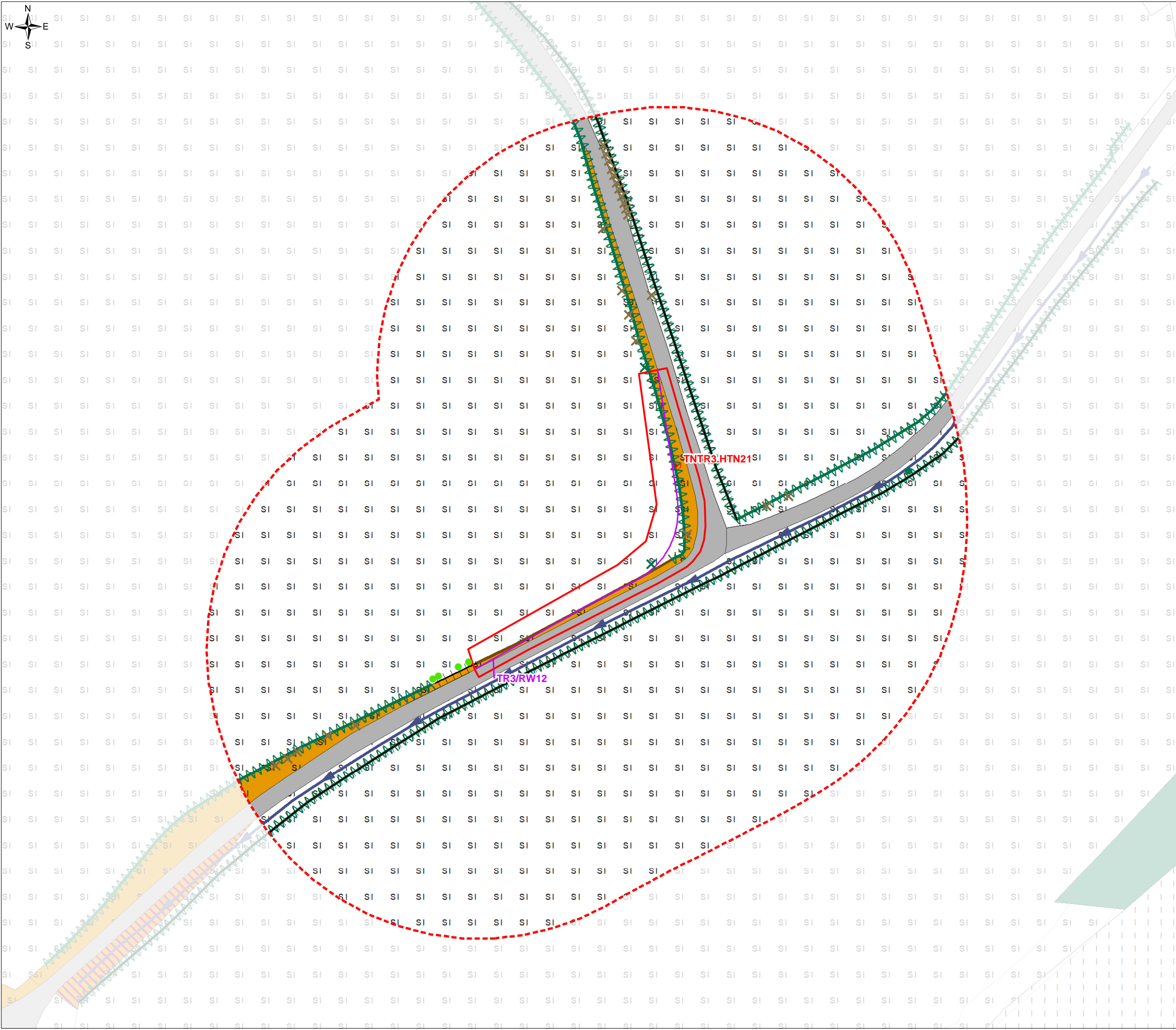


FIGURE 5B

Highways improvement works

Highways improvement works - 50m buffer

Highways Proposed Works

Road widening

Running water

Native species-rich intact hedge

Fence

Wall

Semi-natural broad-leaved woodland

Semi-improved neutral grassland

Improved grassland

Marsh/marshy grassland

Poor semi-improved grassland

Hardstanding

Target note

Scattered scrub

Scattered broad-leaved tree

Scattered coniferous tree

Scattered bracken

Running water

Native species-rich intact hedge

Fence

Wall

Semi-natural broad-leaved woodland

0

20

40

metres

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

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<div><div><div><div></div><div>United Utilities</div><div>Water for the North West</div></div></div></div>					
PROJECTUNITED UTILITIES WATER LIMITED HAWESWATER AQUEDUCT RESILIENCE PROGRAMME OFF-SITE HIGHWAYS WORKS TR3 VOLUME 5 PART II PHASE 1 HABITAT SURVEY PAGE 22 OF 22					
SCALE 1:700					SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-V5-P2-01.05.22					REVISION 0

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