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Executive Summary

1. TEP was commissioned by United Utilities to undertake a Biodiversity Net Gain (BNG) assessment of the Haweswater Aqueduct Resilience Programme. This report covers the BNG assessment of land within the boundary of Ribble Valley Borough Council only.
2. Full details of the proposed Bowland Section, its location and supporting ecological information is found within Chapter 9 of the Environmental Statement.
3. The Biodiversity Net Gain exercise has been completed using the Natural England Biodiversity Metric (v2.0) and has been completed with reference to the Biodiversity Net Gain Good Practice Principles for Development.
4. All habitats to be lost are to be re-instated to the same condition following completion of works with the exception of some small areas of new access track, hard standing and buildings which are required for the permanent maintenance and monitoring of the aqueduct. Habitat enhancement is proposed but is detailed separately within a report produced by WSP (REF: RVBC-BO-APP-008_02).
5. Based on an assessment of habitats to be lost and those to be reinstated to their current condition, and in the absence of habitat enhancement proposals, there is an overall biodiversity net loss of 15.55% for habitats and 52.15% for hedgerows.
6. This report should be read in conjunction with WSP report (REF: RVBC-BO-APP-008_02) for full details of final habitat losses and gains, once habitat enhancement proposals have been incorporated.

1.0 Introduction

Project Background

- 1.1 TEP was commissioned by United Utilities to undertake a Biodiversity Net Gain (BNG) assessment of the Haweswater Aqueduct Resilience Programme. This report covers the BNG assessment of land within the boundary of Ribble Valley Borough Council only (henceforth referred to as 'the site').
- 1.2 The section within the Ribble Valley Borough Council boundary includes the following areas:
 - Newton-in-Bowland Compound; and
 - Ribble Crossing.
- 1.3 Full details of the proposed Bowland Section can be found within the Environmental Statement for the project¹.
- 1.4 The site, as assessed within this document, covers an area of 23.87ha. This is based on the designs provided at the time of assessment. The site boundary is shown in both the pre and post development BNG maps provided within the drawings at the end of this report.
- 1.5 All habitats to be lost are to be re-instated to the same condition following completion of works with the exception of some small areas of new access track, hard standing and buildings which are required for the permanent maintenance and monitoring of the aqueduct. Habitat enhancement is proposed but is detailed separately within a report written by WSP (REF: RVBC-BO-APP-008_02).

Biodiversity Net Gain

- 1.6 Paragraph 170(d) of the revised NPPF states that "Planning policies and decisions should contribute to and enhance the natural and local environment by... minimising impacts on and providing net gains for biodiversity..." The Government 25-year Environment Plan states that government will "embed environmental net gain principle for development".
- 1.7 In July 2019, the government issued revised planning practice guidance (PPG) with details on how planners can implement "net environmental gain" requirements when assessing development proposals, including new advice on protecting wildlife.
- 1.8 In terms of measuring net gain, the guidance states that using a metric is a pragmatic way to calculate the impact of a development and the net gain that can be achieved. It goes on to state that "tools such as the Defra biodiversity metric can be used to assess whether a biodiversity net gain outcome is expected to be achieved".
- 1.9 Biodiversity Net Gain is the end result of a process which is designed to ensure that there is an increase in biodiversity when the value of habitats prior to and post development are considered.

¹ Haweswater Aqueduct Resilience Programme - Terrestrial Ecology Chapter (ES Volume 4) Doc Ref: HBC_RBC_BMBC-HW-ES-009-01.

- 1.10 The process of BNG is designed to align with the mitigation hierarchy to ensure that firstly loss is avoided, secondly loss is minimised and thirdly lost habitats are restored or mitigated for on-site. Where this is not possible and as a last resort remaining losses must be compensated for off-site.
- 1.11 The impact on biodiversity within this site has been calculated using the Natural England biodiversity metric (v2.0)², which is discussed in detail within the methods section below. The metric provides a way to measure biodiversity loss and gain in a consistent and robust way. It can also predict the likely effectiveness of creating new or enhancing existing habitats.

Aims and Objectives

- 1.12 This report aims to:
- Set out the ecological surveys undertaken to establish a baseline position of biodiversity;
 - Provide a biodiversity impact assessment result of the site detailing whether the development will likely achieve net gain, net loss or no net loss of biodiversity; and
 - Detail the mitigation required to compensate for the impact of the development.

Relevant Legislation and Policy

- 1.13 Legislation and policies relevant to this report are shown in Chapter 9, Table 9A.1 of the ES chapter.

² Natural England (2010). The Biodiversity metric 2.0 Auditing and accounting for biodiversity. 2019

2.0 Methods

BNG Assessment

- 2.1 The Site has been assessed using the Natural England biodiversity metric (v2.0) in line with the user guide³ and technical supplement⁴ provided.
- 2.2 The biodiversity metric (v2.0) is a tool designed to enable developers to measure the change in biodiversity across their site. It determines if there will be net gain, net loss or no net loss of biodiversity following completion of their development and any subsequent management regime.
- 2.3 In order to calculate the change in biodiversity across the site a site survey is undertaken by a suitably qualified ecologist to determine the habitats present on site, their location, size, condition and connectivity. This information is then digitised and the resulting information fed into the biodiversity metric (v2.0).
- 2.4 The principles of biodiversity net gain as set out in the Biodiversity Net Gain Good Practice Guidelines⁵ have been considered throughout this process as listed below:
- 1. Apply the mitigation hierarchy;
 - 2. Avoid losing biodiversity that cannot be offset by gains elsewhere;
 - 3. Be inclusive and equitable;
 - 4. Address risks;
 - 5. Make a measurable net gain contribution;
 - 6. Achieve the best outcomes for biodiversity;
 - 7. Be additional;
 - 8. Create a net gain legacy;
 - 9. Optimise sustainability;
 - 10. Be transparent.

Data Sources

- 2.5 The data used to inform the metric, as assessed within this document, have been informed by detailed site survey and a thorough desk-based assessment of habitats present and proposed.
- 2.6 Pre-development habitats which fall within or adjacent to the indicative Development Envelope were surveyed across the 2019 and 2020 season. Extended Phase 1 habitat survey methods were undertaken in line with JNCC⁶ and CIEEM Guidelines⁷. Full details of habitats across the site are found within the Phase 1 Habitat Appendix⁸

³ Ian Crosher , Susannah Gold , Max Heaver , Matt Heydon , Lauren Moore , Stephen Panks , Sarah Scott, Dave Stone & Nick White . 2019. The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide (Beta Version, July 2019). Natural England

⁴ Ian Crosher , Susannah Gold , Max Heaver , Matt Heydon , Lauren Moore , Stephen Panks , Sarah Scott, Dave Stone & Nick White. 2019. The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version, July 2019). Natural England

⁵ CIEEM, IEMA & CIRIA (2019). Biodiversity Net Gain. Good Practice Principles for Development. A Practical Guide;

⁶ JNCC 2010. Handbook for Phase 1 Habitat Survey: A technique for environmental audit.

⁷ CIEEM 2017. Guidelines for Preliminary Ecological Appraisal.

⁸ HARP - Proposed Haslingden and Walmersley Section Phase 1 Habitat Appendix March 2021. Doc No: HBC_RBC_BMBC-HW-TA-009-01-02, Rev 1.0

- 2.7 Condition assessment of the habitats present pre-development was undertaken by a suitably experienced ecologist. The condition assessments were calculated through consultation with the original habitat surveyor with reference to site and aerial photography and the guidance presented in the Biodiversity Metric 2.0 - Technical Supplement.
- 2.8 Phase 1 habitats were converted to UK Habitat classification code ⁹in line with the conversions provided in the 'Technical Data' button in the calculation tool of the Natural England biodiversity metric (v2.0)
- 2.9 Strategic significance was determined through a thorough desktop review of local planning policy and other relevant documentation. The desk based assessment¹⁰ provides full details of all local policy and legislation covering the sites.
- 2.10 For the purpose of the BNG assessment particular reference has been paid to the relevant core strategy and other ecology specific policies. Consideration has also been given to the location of Lancaster's Biological Heritage Sites (BHS's) as well as county wide and nationally designated wildlife sites, specifically where they are referenced in local policy as providing important connectivity.
- 2.11 Those sites which fall within the green infrastructure policy, within a designated/locally protected wildlife site or sites which fall within other ecology specific local policy are awarded high strategic significance. Those which fall partially within these areas or are directly adjacent are awarded moderate strategic significance and those outside of these areas are awarded low strategic significance.
- 2.12 Post development calculations have been based on assessment of proposals provided by United Utilities. The post development proposals are shown within drawing G7478.04.015 at the end of this report.

Limitations and Assumptions

- 2.13 For the purpose of this assessment it is assumed that all habitats across the site will be subject to total loss during the development but will be reinstated following completion of works to an equal condition as measured during the baseline survey. The exceptions to this are any retained trees and some small areas of permanent loss which will form new permanent access roads, hard standing and buildings essential to the continued maintenance of the proposed aqueduct.
- 2.14 Habitat connectivity values were assigned according to the metric default assumptions, based on habitat distinctiveness scores. Connectivity is assumed to be medium for high and very high distinctiveness habitats and low for low and medium distinctiveness habitats.

Baseline Limitations and Assumptions

- 2.15 No limitations were encountered during the on-site extended Phase 1 habitat survey.

⁹ UK Habitat Classification: [ukhab – UK Habitat Classification](#) (Accessed 12/04/21)

¹⁰ HARP - Proposed Haslingden and Walmersley Section Deskbased Appendix, September 2020. Appendix 9A.1
Doc No: HBC_RBC_BMBC-HW-TA-009-01-01

- 2.16 A variety of weather conditions were encountered during the survey work however none were adverse enough to impact negatively on the completion of the survey work.
- 2.17 Following discussion between site surveyor and the ecologist completing this report, where there was any doubt on a condition assessment criteria during the condition assessment a higher quality condition has been assumed.
- 2.18 The condition assessment for trees has been based on the tree categorisation within the Arboricultural assessment¹¹ for the site with those which are category A being given good condition, those which are category B moderate condition and those which are category C or U Poor condition.
- 2.19 For the purpose of this assessment where tree canopy cover is above other habitats, the area of tree canopy cover only has been counted and habitats beneath excluded. For tree groups and scattered trees the size of the canopy has been taken as the root protection area given within the Arboricultural assessment.
- 2.20 The Arboricultural assessment includes three tree categories; tree loss, retained trees and trees which may be lost but will be sought to be retained. For the purpose of this assessment a worst case scenario has been anticipated and all trees that may be lost have been included as a loss.

Post-Development Limitations and Assumptions

- 2.21 It is assumed that all habitats to be lost can be reinstated in their current position and can be subject to suitable management to achieve a condition identical to that which was achieved pre-development.
- 2.22 It has been assumed that trees are to be replaced on a 3 to 1 basis. Newly planted trees have been given an assumed canopy cover of 1m².
- 2.23 There is no on or off-site mitigation considered in this report above re-instatement of habitats lost to their current condition. Mitigation for habitat losses is considered separately within a report produced by WSP (REF: RVBC-BO-APP-008_02).

¹¹ Arboricultural Impact Assessment (ES Volume 4 Appendix 6.7) Doc Ref: HBC_RBC_BMBC-HW-TA-006-007.

3.0 Results

Biodiversity Impacts

Irreplaceable Habitats

- 3.1 Veteran trees and areas of Wetland - Fens (upland and lowland) are irreplaceable habitats which have been identified on site and cannot be compensated for within the biodiversity metric. Bespoke compensation for the loss of these habitats is provided within the Environmental Statement for the project.

Baseline

- 3.2 The baseline habitats drawing (TEP Ref: G7478.004.014) illustrates the habitats present across the site. Tables 1 lists the habitats present, their Phase 1 habitat code and reclassified UK Habitat classification (UK Hab) code with their associated conditions and also provides a summary of how this assessment was derived.
- 3.3 In some cases there is more than one line per habitat type. This reflects the lines in the BNG metric which are split out into those habitat types with different condition scores and strategic significance. For example there may be two areas of scrub, both which are of moderate condition, however one has high strategic significance and the other low. To identify each different area within the metric and be able to reference it to the table below, a separate column for the area has been included.
- 3.4 Drawing TEP Ref: G7478.004.014 also illustrates the location of the hedgerows. Table 2 lists the hedgerows present within the application area, their Phase 1 habitat code and reclassified UK Habitat classification code with their associated conditions and provides a summary of how this assessment was derived.
- 3.5 The comments box in the tables below offers further justification of the condition, based on the technical guidance document for the metric and also based on the surveyors own ecological knowledge. Relevant target notes (TN's) are provided where available however not all individual sections of each habitat had a TN conferred onto them.

Table 1: Baseline Habitats, UK Hab - Newton-in-Bowland Compound

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Grassland - Modified grassland	Poor semi-improved grassland	0.02	<p>1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site.</p> <p>2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e. as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation. NOT MET</p> <p>3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat. NOT MET</p> <p>4. Undesirable species and physical damage is below 5% cover. NOT MET</p> <p>5. Cover of bare ground not greater than 10% (including localised areas, for example, rabbit warrens).</p> <p>6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.</p>	Fairly Poor	Relevant TN's: N/A

¹² Natural England (2010). The Biodiversity metric 2.0 Auditing and accounting for biodiversity. Technical Supplement. 2019

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Grassland - Modified grassland	Poor semi-improved grassland	19.62	<p>1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site. NOT MET</p> <p>2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e. as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation. NOT MET</p> <p>3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat. NOT MET</p> <p>4. Undesirable species and physical damage is below 5% cover. NOT MET</p> <p>5. Cover of bare ground not greater than 10% (including localised areas, for example, rabbit warrens).</p> <p>6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.</p>	Poor	<p>Relevant TN's: N/A</p> <p>The majority of the site is covered by poor semi-improved grassland which is heavily sheep grazed.</p>

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Grassland - Other lowland acid grassland	Semi-improved acid grassland	0.02	<p>1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site.</p> <p>2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e. as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation. NOT MET</p> <p>3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat. NOT MET</p> <p>4. Undesirable species and physical damage is below 5% cover.</p> <p>5. Cover of bare ground not greater than 10% (including localised areas, for example, rabbit warrens).</p> <p>6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%. NOT MET</p>	Fairly poor	<p>Relevant TN's: South of TR3.TN128</p> <p>Small area of acid grassland adjacent to buildings in the north of site.</p>

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Grassland - Other lowland acid grassland	Semi-improved acid grassland	0.12	<p>1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site.</p> <p>2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e. as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation. NOT MET</p> <p>3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat. NOT MET</p> <p>4. Undesirable species and physical damage is below 5% cover.</p> <p>5. Cover of bare ground not greater than 10% (including localised areas, for example, rabbit warrens).</p> <p>6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.</p>	moderate	<p>Relevant TN's: TR3.TN134</p> <p>An area of semi-improved acid grassland which is less intensively managed than the surrounding fields</p>

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Grassland - Other neutral grassland	Semi-improved neutral grassland	0.41	<p>1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site.</p> <p>2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation. NOT MET</p> <p>3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat. NOT MET</p> <p>4. Undesirable species and physical damage is below 5% cover.</p> <p>5. Cover of bare ground not greater than 10% (including localised areas, for example, rabbit warrens).</p> <p>6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.</p>	moderate	<p>Relevant TN's: TR3.TN154</p> <p>Small area of semi-improved neutral grassland located to the north west of the River Hodder</p>
Sparsely vegetated land - ruderal/ephemeral	Tall Ruderal	0.07	<p>This habitat is not grass dominated so does not fall within the grassland habitat and does also not meet the criteria of Open Mosaic Habitat on Previously Developed Land (OMH). It is therefore assessed as ruderal habitat within the sparsely vegetated and rock habitat type.</p> <p>This ruderal habitat is dominated by undesirable species including nettle. It has low biodiversity value and therefore is assigned as being in poor condition.</p>	poor	<p>Relevant TN's: TR3.TN153</p> <p>Nettle dominated tall ruderal habitat.</p>
Urban - Developed land; sealed surface	Buildings and hard standing	0.41	No condition assessment is required	N/A - Other	<p>Relevant TN's: N/A</p> <p>An existing area of hard standing and buildings. No condition assessment required</p>

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Urban - Vacant/derelict land/ bare ground	Bare ground	0.07	<p>1. Known history of disturbance at the site or evidence that soil has been removed or severely modified by previous use(s) of the site. Extraneous materials/substrates such as industrial spoil may have been added which in turn has led to a low nutrient environment.</p> <p>2. The site contains some vegetation. This will comprise of early successional communities consisting mainly of stress-tolerant species (e.g. indicative of low nutrient status or drought). Early successional communities are composed of (a) annuals, or (b) mosses/liverworts, or (c) lichens, or (d) ruderals, or (e) inundation species, or (f) open grassland, or (g) flower-rich grassland, or (h) heathland. NOT MET</p> <p>3. The site contains unvegetated, loose bare substrate and pools may be present and desirable.</p> <p>4. The site shows spatial variation, forming a mosaic of one or more of the early successional communities (a)–(h) above plus bare substrate or pools. NOT MET</p>	poor	Relevant TN's: N/A

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Wetland - Fens (upland and lowland)	Fen	0.53	<p>1. There is no artificial drainage, which would include ditches that are now revegetated and streams that have been depend and widened.</p> <p>2. The water level and its management should result in surface water throughout the year.</p> <p>3. Cover of undesirable species (common nettle, docks, creeping/spear thistles, common ragwort and Indian (Himalayan) balsam) should be less than 10%.</p> <p>4. Cover of scrub should be less than 10%.</p> <p>5. Cover of bare ground should be less than 10%.</p> <p>6. No more than 25% of the fen area should have a continuous cover of litter (i.e. dead vegetation).</p> <p>7. On bogs sphagnum moss cover should be between 40% - 100%. Heathers and cottongrasses should be at least frequent. Cover of dwarf shrubs between 20% and 75% (except when bogmosses (Sphagnum) or other wetland indicators are dominant), with at least two dwarf shrub species frequent.</p> <p>8. Flowering cottongrass plants frequent in spring (where present), or flowering heather plants at least frequent in autumn (where present).</p> <p>9. Reedbed vegetation should include at least 60% common reeds.</p>	Good	<p>Relevant TN's: TR3.TN103</p> <p>Species-rich spring and fen habitat.</p>

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Wetland - Fens (upland and lowland)	Fen	0.1	<p>1. There is no artificial drainage, which would include ditches that are now revegetated and streams that have been depend and widened. NOT MET</p> <p>2. The water level and its management should result in surface water throughout the year.</p> <p>3. Cover of undesirable species (common nettle, docks, creeping/spear thistles, common ragwort and Indian (Himalayan) balsam) should be less than 10%.</p> <p>4. Cover of scrub should be less than 10%.</p> <p>5. Cover of bare ground should be less than 10%.</p> <p>6. No more than 25% of the fen area should have a continuous cover of litter (i.e. dead vegetation).</p> <p>7. On bogs sphagnum moss cover should be between 40% - 100%. Heathers and cottongrasses should be at least frequent. Cover of dwarf shrubs between 20% and 75% (except when bogmosses (Sphagnum) or other wetland indicators are dominant), with at least two dwarf shrub species frequent.</p> <p>8. Flowering cottongrass plants frequent in spring (where present), or flowering heather plants at least frequent in autumn (where present).</p> <p>9. Reedbed vegetation should include at least 60% common reeds.</p>	moderate	<p>Relevant TN's: TR3.TN149</p> <p>Area of wet ground that is irrigated by spring water flow from upslope and located within a permanent pasture on the edge of the River Hodder floodplain. Includes areas of fen and purple moor-grass mosaic.</p>

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Woodland and forest - Other woodland; broadleaved	Broadleaved plantation woodland	0.02	<p>1. This should be an area of trees with complete canopy cover.</p> <p>2. Native species are dominant. Non-native and invasive species account for less than 10% of the vegetation cover.</p> <p>3. A diverse age and height structure of the trees. NOT MET</p> <p>4. Free from damage [Bark stripping; Browse line; Damage shoot tips] (in the last five years) from stock or wild mammals with less than 20% of vegetation being browsed.</p> <p>5. There should be evidence of successful (i.e. not browsed off before it gets well established) tree regeneration such as seedlings, saplings and young trees. NOT MET</p> <p>6. Standing and fallen dead wood of over 20 cm diameter are present including fallen large dead branches/stems and stumps. NOT MET</p> <p>7. Wetland habitat if they exist within the wood has little sign of drainage or channel straightening.</p> <p>8. The area is protected from damage by agricultural and other adjacent operations.</p> <p>9. There should be no evidence of inappropriate management (e.g. deep ruts, animal poaching or compaction).</p> <p>10. Invasive non-native plants are below 5% (see list below).</p> <p>11. No signs of significant nutrient enrichment present.</p>	fairly poor	<p>Relevant TN's: TR3.TN155</p> <p>Broadleaved plantation woodland with largely absent understory. The ground flora is dominated by grasses.</p>

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Woodland and forest - Other woodland; mixed	Mixed plantation woodland	0.03	<p>1. This should be an area of trees with complete canopy cover. NOT MET</p> <p>2. Native species are dominant. Non-native and invasive species account for less than 10% of the vegetation cover.</p> <p>3. A diverse age and height structure of the trees.</p> <p>4. Free from damage [Bark stripping; Browse line; Damage shoot tips] (in the last five years) from stock or wild mammals with less than 20% of vegetation being browsed.</p> <p>5. There should be evidence of successful (i.e. not browsed off before it gets well established) tree regeneration such as seedlings, saplings and young trees.</p> <p>6. Standing and fallen dead wood of over 20 cm diameter are present including fallen large dead branches/stems and stumps. NOT MET</p> <p>7. Wetland habitat if they exist within the wood has little sign of drainage or channel straightening.</p> <p>8. The area is protected from damage by agricultural and other adjacent operations.</p> <p>9. There should be no evidence of inappropriate management (e.g. deep ruts, animal poaching or compaction).</p> <p>10. Invasive non-native plants are below 5% (see list below).</p> <p>11. No signs of significant nutrient enrichment present.</p>	moderate	<p>Relevant TN's: TR3.TN133</p> <p>A mixed plantation woodland on a steep north-facing embankment slope of the River Hodder</p>
Woodland and forest - Other woodland; broadleaved	Scattered trees	0.27	As described in the assumptions section the condition of scattered trees and groups of trees across the site has been taken directly from the tree category grade as provided within the Arboricultural report.	good	Category A trees within the Arboricultural report.
Woodland and forest - Other woodland; broadleaved	Scattered trees	0.2	As described in the assumptions section the condition of scattered trees and groups of trees across the site has been taken directly from the tree category grade as provided within the Arboricultural report.	moderate	Category B trees within the Arboricultural report.

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹²	Associated Condition	Comments
Woodland and forest - Other woodland; broadleaved	Scattered trees	1.26	As described in the assumptions section the condition of scattered trees and groups of trees across the site has been taken directly from the tree category grade as provided within the Arboricultural report.	moderate	Category B trees within the Arboricultural report.
Woodland and forest - Other woodland; broadleaved	Scattered trees	0.09	As described in the assumptions section the condition of scattered trees and groups of trees across the site has been taken directly from the tree category grade as provided within the Arboricultural report.	poor	Category C/U trees within the Arboricultural report.
Woodland and forest - Other woodland; broadleaved	Scattered trees	0.63	As described in the assumptions section the condition of scattered trees and groups of trees across the site has been taken directly from the tree category grade as provided within the Arboricultural report.	poor	Category C/U trees within the Arboricultural report.

Table 2 - Baseline Habitats, UK Hab - Ribble Crossing

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹³	Associated Condition	Comments
Grassland - Other neutral grassland	Semi-improved neutral grassland	0.16	<p>1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site. NOT MET</p> <p>2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation.</p> <p>3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat. NOT MET</p> <p>4. Undesirable species and physical damage is below 5% cover.</p> <p>5. Cover of bare ground not greater than 10% (including localised areas, for example, rabbit warrens).</p> <p>6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.</p>	Moderate	<p>Relevant TN's: TN4</p> <p>Stream edge with no distinct aquatic or marginal vegetation but grassy sward along embankment comprising coarse, unmanaged grasses with tall ruderal species</p>

¹³ Natural England (2010). The Biodiversity metric 2.0 Auditing and accounting for biodiversity. Technical Supplement. 2019

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹³	Associated Condition	Comments
Grassland - Modified grassland	Improved grassland	28.44	<p>1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site. NOT MET</p> <p>2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation. NOT MET</p> <p>3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat. NOT MET</p> <p>4. Undesirable species and physical damage is below 5% cover. NOT MET</p> <p>5. Cover of bare ground not greater than 10% (including localised areas, for example, rabbit warrens).</p> <p>6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.</p>	poor	<p>Relevant TN's: TN1</p> <p>Improved grassland fields, grazed short by sheep at the time of survey</p>

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹³	Associated Condition	Comments
Heathland and shrub - Blackthorn scrub	Dense continuous scrub	0.06	<p>2. There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be 100% cover). NOT MET</p> <p>3. There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs. NOT MET</p> <p>4. Pernicious weeds and invasive species make up less than 5% of the ground cover.</p> <p>5. The scrub has a well-developed edge with un-grazed tall herbs. NOT MET</p> <p>6. There are many clearings and glades within the scrub.</p>	Moderate	Relevant TN's: N/A
Heathland and shrub - Mixed scrub	Dense continuous scrub	0.16	<p>2. There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be 100% cover).</p> <p>3. There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs. NOT MET</p> <p>4. Pernicious weeds and invasive species make up less than 5% of the ground cover.</p> <p>5. The scrub has a well-developed edge with un-grazed tall herbs.</p> <p>6. There are many clearings and glades within the scrub. NOT MET</p>	Poor	<p>Relevant TN's: TN9</p> <p>Thicket of dense blackthorn scrub which has encroached from the outgrown hedge to the south.</p>

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹³	Associated Condition	Comments
Sparsely vegetated land - ruderal/ephemeral	Bare ground and tall ruderal mosaic	0.1	<p>This habitat is not grass dominated so does not fall within the grassland habitat and does also not meet the criteria of Open Mosaic Habitat on Previously Developed Land (OMH). It is therefore assessed as ruderal habitat within the sparsely vegetated and rock habitat type.</p> <p>This ruderal habitat is dominated by undesirable species such as nettle. It has low biodiversity value and therefore is assigned as being in poor condition.</p>	poor	<p>Relevant TN's: N/A</p> <p>Species poor ruderal habitat with presence of undesirable species more than 10%.</p>
Urban - Developed land; sealed surface	Buildings and hard standing	0.11	No condition assessment required.	N/A - Other	<p>Relevant TN's: N/A</p> <p>An existing area of hard standing and buildings. No condition assessment required</p>

UK Hab Type	Associated Phase 1 Code	Area (ha)	Condition assessment ¹³	Associated Condition	Comments
Urban - Vacant/derelict land/ bareground	Bare ground	0.1	<p>1. Known history of disturbance at the site or evidence that soil has been removed or severely modified by previous use(s) of the site. Extraneous materials/substrates such as industrial spoil may have been added which in turn has led to a low nutrient environment. NOT MET</p> <p>2. The site contains some vegetation. This will comprise of early successional communities consisting mainly of stress-tolerant species (e.g. indicative of low nutrient status or drought). Early successional communities are composed of (a) annuals, or (b) mosses/liverworts, or (c) lichens, or (d) ruderals, or (e) inundation species, or (f) open grassland, or (g) flower-rich grassland, or (h) heathland.</p> <p>3. The site contains unvegetated, loose bare substrate and pools may be present and desirable. NOT MET</p> <p>4. The site shows spatial variation, forming a mosaic of one or more of the early successional communities (a)–(h) above plus bare substrate or pools. NOT MET</p>	poor	<p>Relevant TN's: N/A</p> <p>Area of bare ground present in the west of site, forming part of an access track.</p>
Woodland and forest - Other woodland; broadleaved	Scattered trees	0.03	Scattered trees - No condition assessment required	moderate	Category B trees within the Arboricultural report.
Woodland and forest - Other woodland; broadleaved	Scattered trees	0.07	Scattered trees - No condition assessment required	poor	Category C/U trees within the Arboricultural report.

Table 3: Baseline Habitats - Hedgerows - Newton in Bowland Compound

UKHab Type	Associated Phase 1 Code	Hedgerow No	Condition assessment	Associated Condition
Native Species Rich Hedgerow with Trees	Native Species-rich Hedge and Trees	TR3.H31	<p>A1. Height: >1.5 m average along length</p> <p>A2. Width: >1.5 m average along length</p> <p>B1. Gap – hedge base: Gap between ground and base of canopy 90% of length (unless 'line of trees')</p> <p>B2. Gap - hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5m</p> <p>C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least)</p> <p>C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground</p> <p>D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species</p> <p>D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities</p>	good
Native Hedgerow	Species-poor Intact Hedge	TR3.H32	<p>A1. Height: >1.5 m average along length</p> <p>A2. Width: >1.5 m average along length</p> <p>B1. Gap – hedge base: Gap between ground and base of canopy 90% of length (unless 'line of trees') NOT MET</p> <p>B2. Gap - hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5m</p> <p>C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least)</p> <p>C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground</p> <p>D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species</p> <p>D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities</p>	good

UKHab Type	Associated Phase 1 Code	Hedgerow No	Condition assessment	Associated Condition
Native Hedgerow	Species-poor Intact Hedge	TR3.H35	<p>A1. Height: >1.5 m average along length</p> <p>A2. Width: >1.5 m average along length NOT MET</p> <p>B1. Gap – hedge base: Gap between ground and base of canopy 90% of length (unless 'line of trees') NOT MET</p> <p>B2. Gap - hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5m NOT MET</p> <p>C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least)</p> <p>C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground NOT MET</p> <p>D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species</p> <p>D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities</p>	poor
Native Species Rich Hedgerow	Native Species-rich Intact Hedge	TR4.HH9	<p>A1. Height: >1.5 m average along length</p> <p>A2. Width: >1.5 m average along length NOT MET</p> <p>B1. Gap – hedge base: Gap between ground and base of canopy 90% of length (unless 'line of trees') NOT MET</p> <p>B2. Gap - hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5m NOT MET</p> <p>C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least)</p> <p>C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground</p> <p>D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species</p> <p>D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities</p>	Moderate

Table 3: Baseline Habitats - Hedgerows and lines of trees - Ribble Crossing

UKHab Type	Associated Phase 1 Code	Hedgerow No	Condition assessment	Associated Condition
Native Species Rich Hedgerow with trees - Associated with bank or ditch	Native Species-rich Hedge with trees and ditch	TR4.WBH2	<p>A1. Height: >1.5 m average along length</p> <p>A2. Width: >1.5 m average along length NOT MET</p> <p>B1. Gap – hedge base: Gap between ground and base of canopy 90% of length (unless 'line of trees')</p> <p>B2. Gap - hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5m</p> <p>C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least) NOT MET</p> <p>C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground NOT MET</p> <p>D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species NOT MET</p> <p>D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities</p>	moderate

UKHab Type	Associated Phase 1 Code	Hedgerow No	Condition assessment	Associated Condition
Native Species Rich Hedgerow - Associated with bank or ditch	Native species-rich intact hedge and ditch	TR4.WBH4	<p>A1. Height: >1.5 m average along length NOT MET</p> <p>A2. Width: >1.5 m average along length NOT MET</p> <p>B1. Gap – hedge base: Gap between ground and base of canopy 90% of length (unless 'line of trees')</p> <p>B2. Gap - hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5m NOT MET</p> <p>C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least) NOT MET</p> <p>C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground NOT MET</p> <p>D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species NOT MET</p> <p>D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities</p>	poor
Native Species Rich Hedgerow - Associated with bank or ditch	Native species-rich intact hedge and ditch	TR4.WBH1	<p>A1. Height: >1.5 m average along length</p> <p>A2. Width: >1.5 m average along length</p> <p>B1. Gap – hedge base: Gap between ground and base of canopy 90% of length (unless 'line of trees')</p> <p>B2. Gap - hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5m</p> <p>C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least) NOT MET</p> <p>C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground</p> <p>D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species NOT MET</p> <p>D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities</p>	good

UKHab Type	Associated Phase 1 Code	Hedgerow No	Condition assessment	Associated Condition
Native Species Rich Hedgerow - Associated with bank or ditch	Native species-rich intact hedge and ditch	TR4.WBH5	<p>A1. Height: >1.5 m average along length NOT MET</p> <p>A2. Width: >1.5 m average along length</p> <p>B1. Gap – hedge base: Gap between ground and base of canopy 90% of length (unless 'line of trees')</p> <p>B2. Gap - hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5m</p> <p>C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least)</p> <p>C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground NOT MET</p> <p>D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species</p> <p>D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities</p>	good
Native Hedgerow with trees - Associated with bank or ditch	Native species-rich intact hedge with trees and ditch	TR4.WBH3	<p>A1. Height: >1.5 m average along length NOT MET</p> <p>A2. Width: >1.5 m average along length NOT MET</p> <p>B1. Gap – hedge base: Gap between ground and base of canopy 90% of length (unless 'line of trees')</p> <p>B2. Gap - hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5m</p> <p>C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least) NOT MET</p> <p>C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground NOT MET</p> <p>D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species</p> <p>D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities</p>	poor

UKHab Type	Associated Phase 1 Code	Hedgerow No	Condition assessment	Associated Condition
Native Hedgerow - Associated with bank or ditch	Native species-rich intact hedge and ditch	RC.H10	<p>A1. Height: >1.5 m average along length NOT MET</p> <p>A2. Width: >1.5 m average along length NOT MET</p> <p>B1. Gap – hedge base: Gap between ground and base of canopy 90% of length (unless 'line of trees')</p> <p>B2. Gap - hedge canopy continuity: Gaps make up <10% of total length and no canopy gaps >5m NOT MET</p> <p>C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least) NOT MET</p> <p>C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground NOT MET</p> <p>D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species</p> <p>D2. Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities NOT MET</p>	poor
Line of Trees	Scattered trees	RC.H5	N/A - Trees with continuous canopy	moderate
Line of Trees	Scattered trees	RC.H16	N/A - Mature trees with continuous canopy	good
Line of Trees	Scattered trees	RC.H1	N/A - Trees with continuous canopy	moderate

Post-development Biodiversity

- 3.6 The areas of Wetland - Fens (upland and lowland) identified in Table 1 above are an irreplaceable habitat and cannot be compensated for within the biodiversity metric. Bespoke compensation for the loss of these habitats is provided within the Environmental Statement for the project.
- 3.7 As shown in the BNG metric all other habitats to be lost will be reinstated to the same condition they achieved during the baseline assessment. The exceptions to this are any retained trees and some small areas of permanent loss which will form new permanent access roads, hard standing and buildings essential to the continued maintenance of the proposed aqueduct.
- 3.8 An Ecological Management Plan will be committed to, which will provide detailed prescriptions for ongoing management of existing and new habitats. Measures will be detailed of how habitats can be reinstated to their current level and the required management practices to maintain this.

Overall Biodiversity Change

- 3.9 The results of the assessment are set out below. The calculator provides baseline units for the habitats, hedgerows and trees, with the total net unit change and total net percentage change post development.
- 3.10 The baseline habitat units for the site are 123.16. Following development, the habitat units on-site will be 104.00. Baseline hedgerow units are 14.51. Following development, the hedgerow units on-site will be 6.94.
- 3.11 The completed metric is presented as a separate document. A summary of the total net change is provided in Figure 1 below.

On-site baseline	Habitat units	123.16
	Hedgerow units	14.51
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	104.00
	Hedgerow units	6.94
	River units	0.00
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	Habitat units	-19.15
	Hedgerow units	-7.57
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	Habitat units	-15.55%
	Hedgerow units	-52.15%
	River units	0.00%

Figure 1: BNG Headline Results Summary Table

- 3.12 As can be seen in the above figure there is a biodiversity net habitat unit loss of 19.15 habitat units which equates to an overall biodiversity net loss of 15.55%.
- 3.13 Hedgerow unit losses will be 7.57 units equating to an overall biodiversity net loss of 52.15%.

4.0 Conclusions

- 4.1 There is an overall biodiversity net loss of 15.55% for habitats and 52.15% for hedgerows from the development. Under the current requirements of National Planning Policy Framework (NPPF) a development must achieve net gain. NPPF does not state what percentage net gain must be achieved.
- 4.2 The draft Environment Bill includes a requirement for 10% net gain on all developments, however, this is yet to be passed through Parliament.
- 4.3 It is understood this document is to be considered by the Greater Manchester Ecology unit (GMEU) whose latest guidance¹⁴ requires all new development to aim to:
 - Deliver net gains in biodiversity using the Biodiversity Metric 2.0 to demonstrate the gain and contributing to Local Plans and local biodiversity and green infrastructure plans, strategies and policies; and
 - Describe how they have met the requirements set by the Biodiversity Net Gain Good Practice Principles as part of any planning application.
- 4.4 The losses in this report reflect those within the Ribble Valley Borough Council area only. This report does not take account of the mitigation to be created off site and therefore, as a stand-alone document, does not accurately reflect the change in biodiversity across the site. This document should be read in conjunction with WSP document (REF: RVBC-BO-APP-008_02) which details the proposed mitigation measures and provides a final change in biodiversity score.

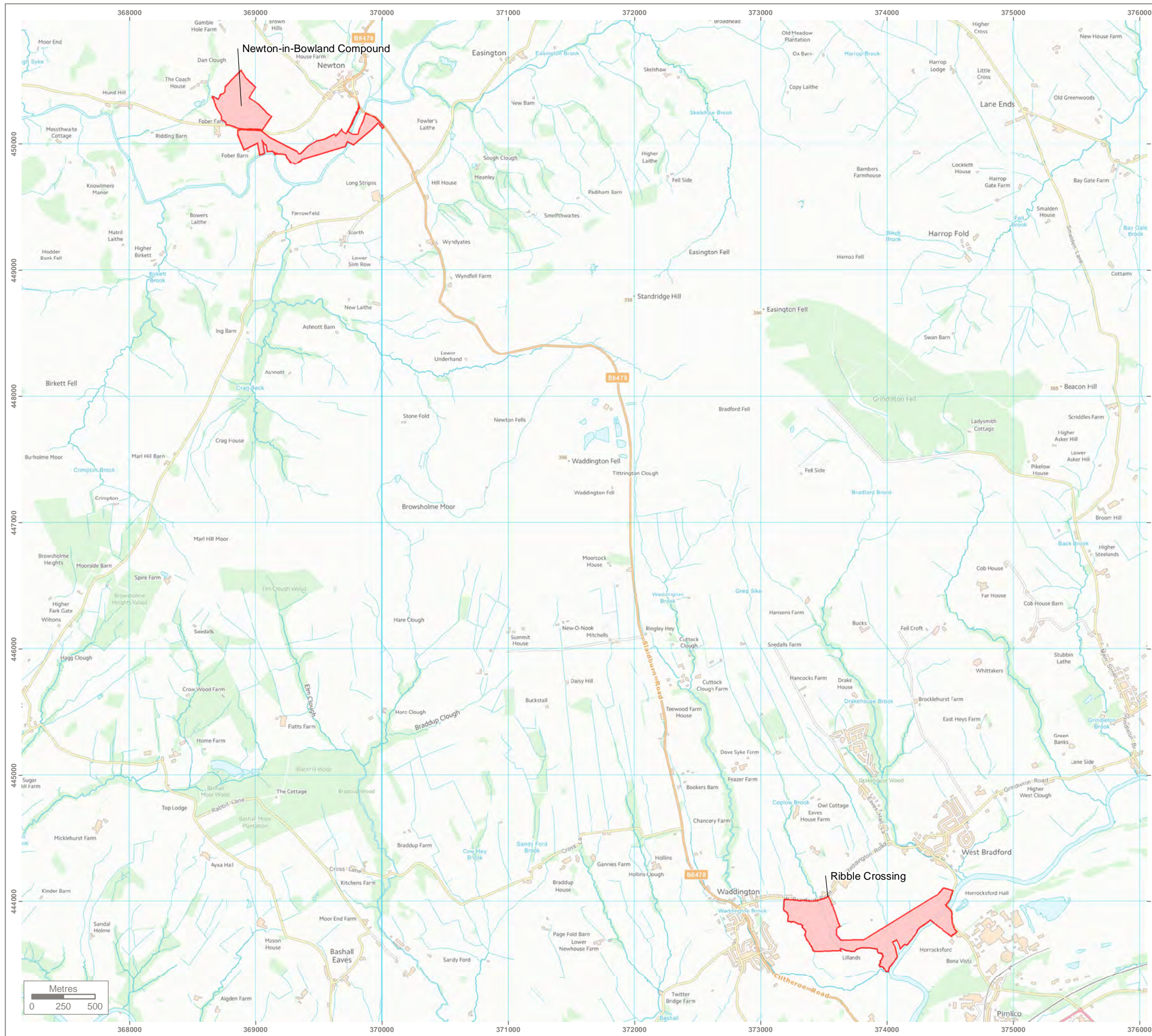
¹⁴ GMCA Biodiversity Net Gain Guidance for Greater Manchester February 2021, WSP, Footprint Ecology.

DRAWINGS

Drawing 1 – G7478.04.13 Ribble Valley District Compound Overview

Drawing 2 – G7478.04.14 Ribble Valley District Baseline Habitats

Drawing 3 – G7478.04.15 Ribble Valley District Post Development Habitats



KEY

Compound boundary

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A	Included Ribble Crossing	JO	IH	14/05/21
Rev	Description	Drawn	Approved	Date

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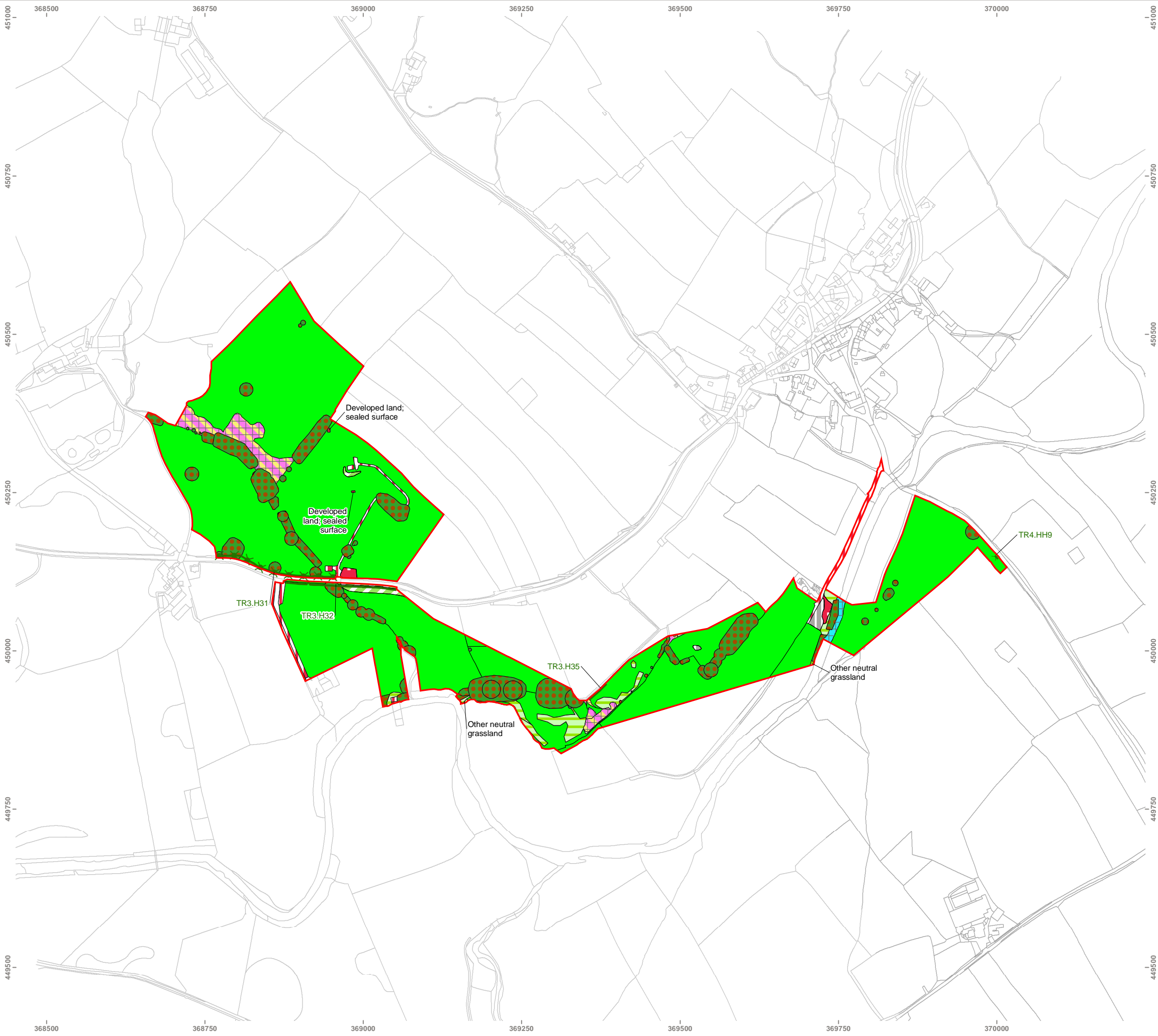
Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Haweswater Aqueduct Resilience Programme
Biodiversity Net Gain

Title
Ribble Valley District Compound Overview - Bowland Section

Drawing Number
G7478.04.013A

Drawn	Checked	Approved	Scale	Date
JO	AH	IH	1:30,000 @ A3	14/05/2021

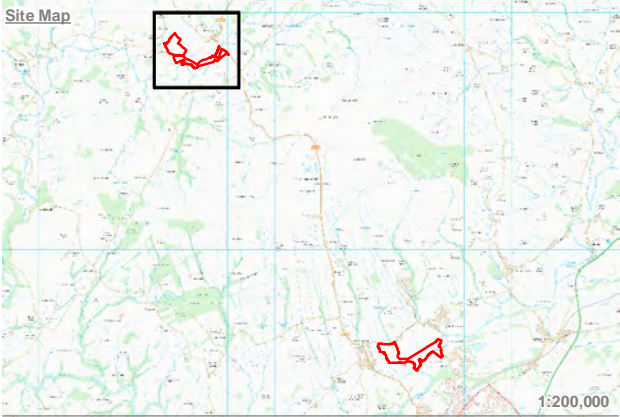


KEY

- Compound boundary
- Habitat excluded from calculations
- UK Habitat Classification**
 - Native hedgerow
 - Native species rich hedgerow
 - Native species rich hedgerow with trees
 - Lowland fens
 - Other lowland acid grassland
 - Other neutral grassland
 - Modified grassland
 - River
 - Ruderal/Ephemeral
 - Developed land/sealed surface
 - Vacant/derelict land/bare ground
 - Other woodland - broadleaved
 - Other woodland - mixed

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

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A	Included Ribble Crossing	JO	IH	14/05/21
Rev	Description	Drawn	Approved	Date

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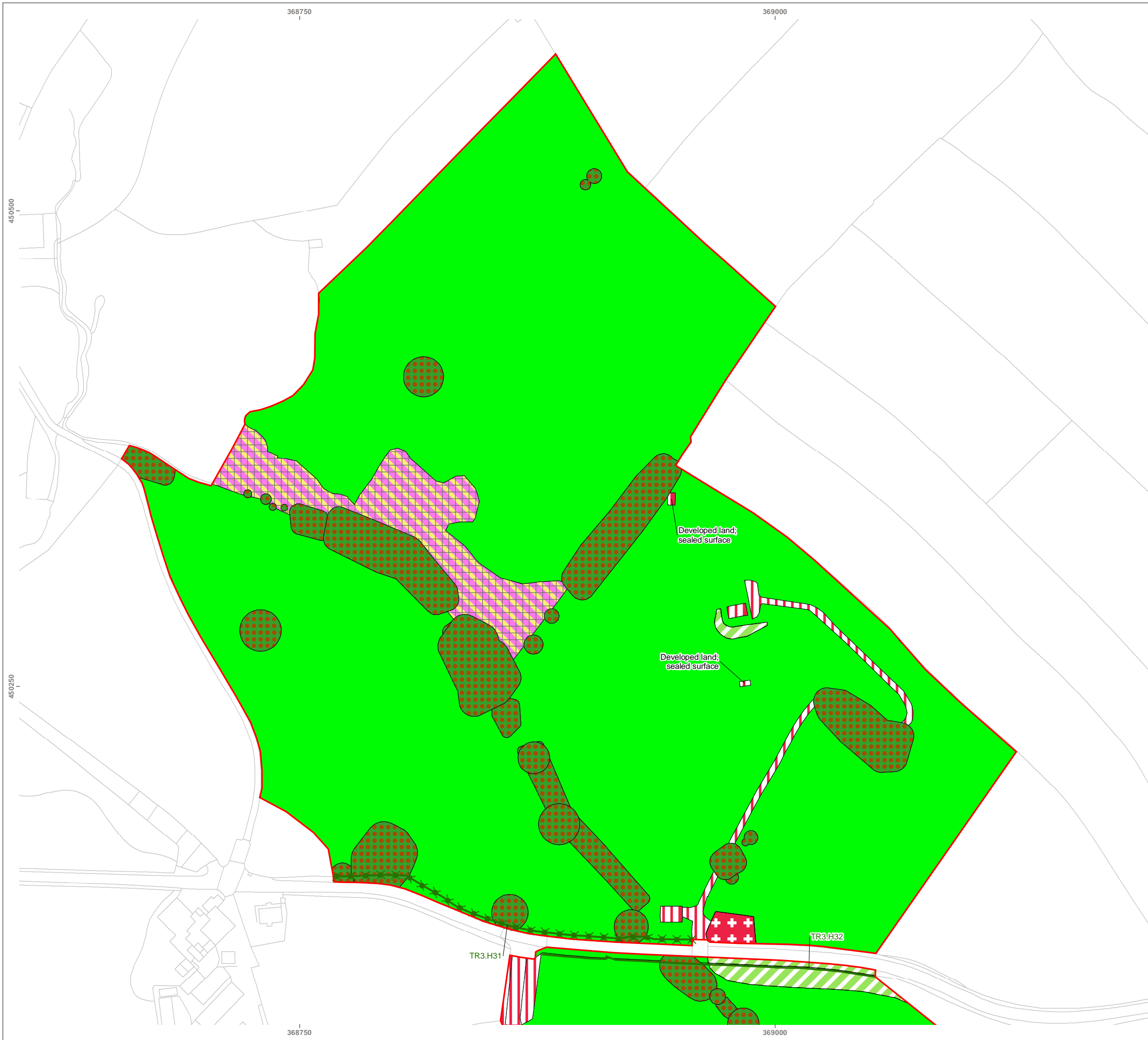
Project
**Haweswater Aqueduct Resilience Programme
Biodiversity Net Gain**

Title
**Ribble Valley District Baseline Habitats - Bowland Section,
Newton-in-Bowland Compound**



Drawing Number
G7478.04.014A.1

Sheet 1 of 6









Drawn	Checked	Approved	Scale	Date
JO	AH	IH	1:6,000 @ A3	14/05/2021



KEY

-  Compound boundary
-  Habitat excluded from calculations

UK Habitat Classification

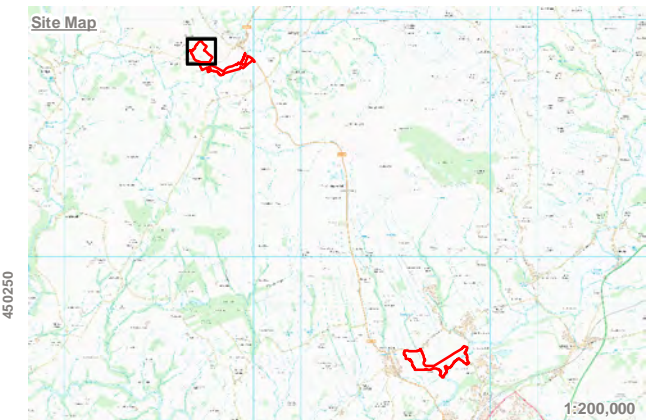
-  Native hedgerow
-  Native species rich hedgerow with trees
-  Lowland fens
-  Other lowland acid grassland
-  Modified grassland
-  Developed land/sealed surface
-  Vacant/derelict land/bare ground
-  Other woodland - broadleaved

Note:

The locations of habitats and habitat features are indicative.



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Project
Haweswater Aqueduct Resilience Programme
Biodiversity Net Gain

Title
Ribble Valley District Baseline Habitats - Bowland Section,
Newton-in-Bowland Compound

Drawing Number G7478.04.014A.2	Sheet 2 of 6
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Drawn JO	Checked AH	Approved IH	Scale 1:2,000 @ A3	Date 14/05/2021
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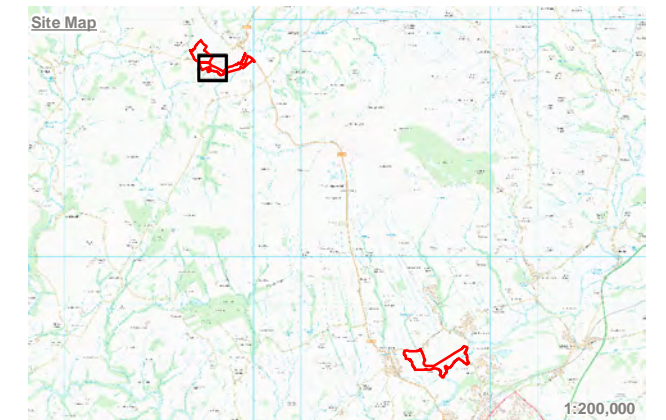
KEY

- Compound boundary
- Habitat excluded from calculations
- UK Habitat Classification**
 - Native hedgerow
 - Native species rich hedgerow with trees
 - Lowland fens
 - Other lowland acid grassland
 - Other neutral grassland
 - Modified grassland
 - River
 - Developed land/sealed surface
 - Vacant/derelict land/bare ground
 - Other woodland - broadleaved
 - Other woodland - mixed

Note:

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Project
**Haweswater Aqueduct Resilience Programme
Biodiversity Net Gain**

Title
**Ribble Valley District Baseline Habitats - Bowland Section,
Newton-in-Bowland Compound**

Drawing Number
G7478.04.014A.3

Sheet 3 of 6

Drawn	Checked	Approved	Scale	Date
JO	AH	IH	1:2,000 @ A3	14/05/2021



KEY

- Compound boundary
- Habitat excluded from calculations
- UK Habitat Classification**
- Native species rich hedgerow
- Lowland fens
- Other neutral grassland
- Modified grassland
- River
- Ruderal/Ephemeral
- Developed land/sealed surface
- Vacant/derelict land/bare ground
- Other woodland - broadleaved

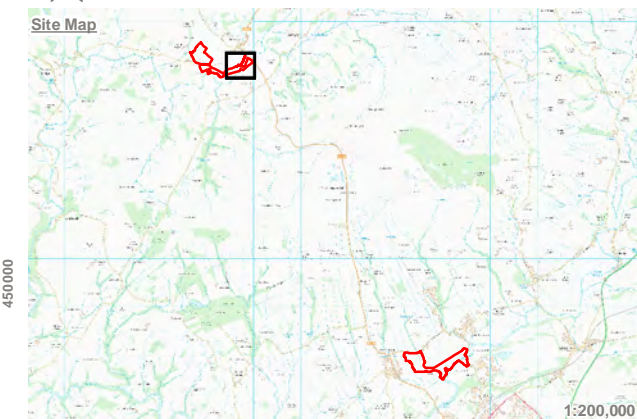
Note:

The locations of habitats and habitat features are indicative.



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Site Map



A	Included Ribble Crossing	JO	IH	14/05/21
Rev	Description	Drawn	Approved	Date



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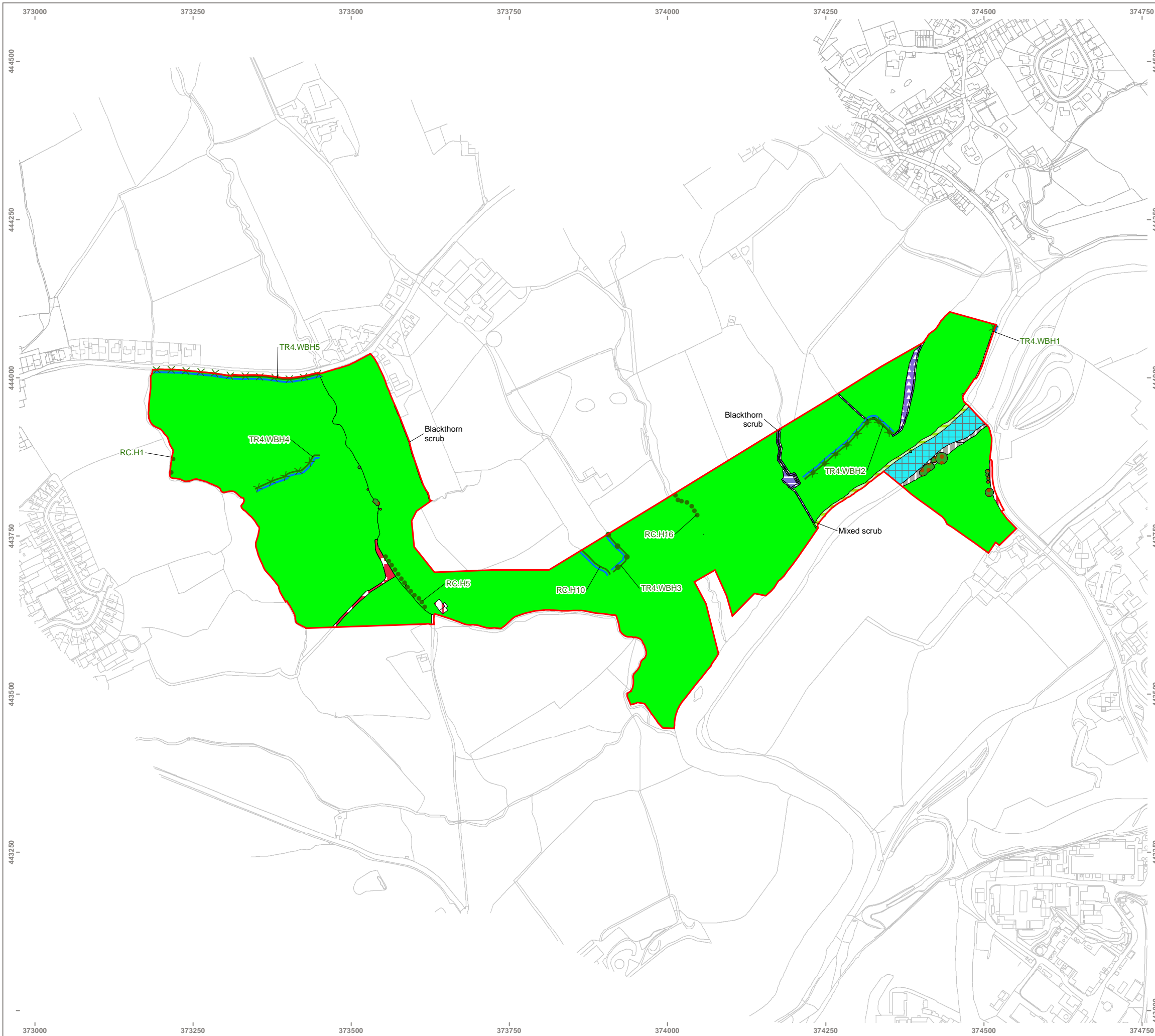
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Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
**Haweswater Aqueduct Resilience Programme
Biodiversity Net Gain**

Title
**Ribble Valley District Baseline Habitats - Bowland Section,
Newton-in-Bowland Compound**

Drawing Number G7478.04.014A.4	Sheet 4 of 6
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Drawn JO	Checked AH	Approved IH	Scale 1:2,000 @ A3	Date 14/05/2021
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KEY

- Compound boundary
- Habitat excluded from calculations

UK Habitat Classification

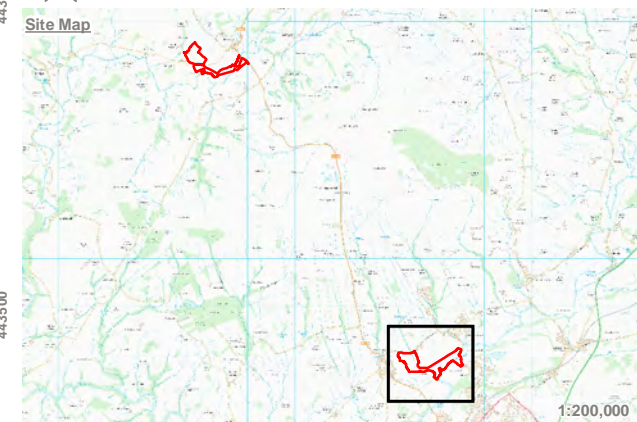
- Line of Trees
- Native hedgerow associated with bank or ditch
- Native hedgerow with trees associated with bank or ditch
- Native species rich hedgerow and trees associated with bank or ditch
- Native species rich hedgerow associated with bank or ditch

Note:

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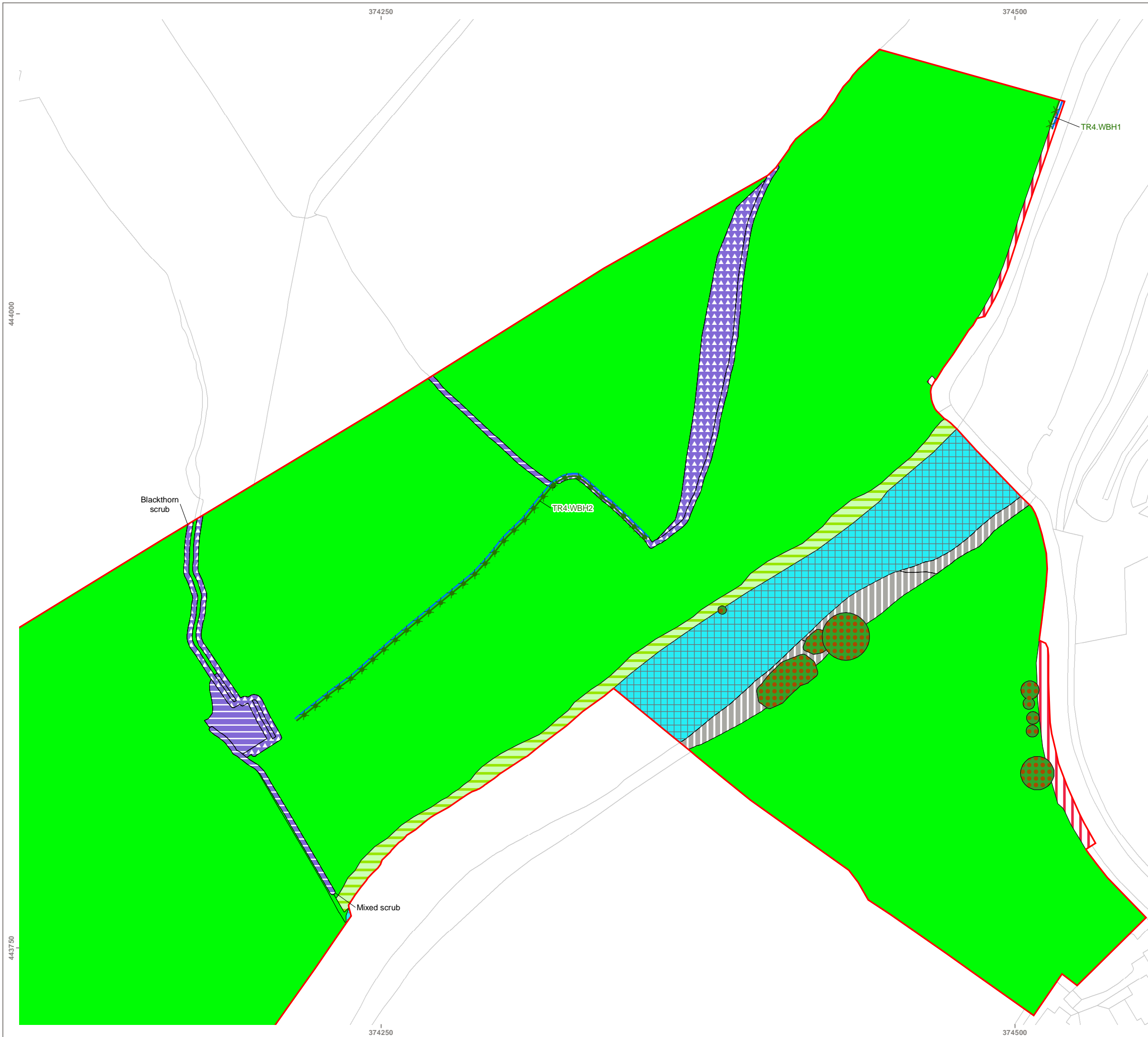
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Project
**Haweswater Aqueduct Resilience Programme
Biodiversity Net Gain**

Title
**Ribble Valley District Baseline Habitats - Bowland Section,
Ribble Crossing**

Drawing Number G7478.04.014A.5	Sheet 5 of 6
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Drawn JO	Checked AH	Approved IH	Scale 1:6,000 @ A3	Date 14/05/2021
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KEY

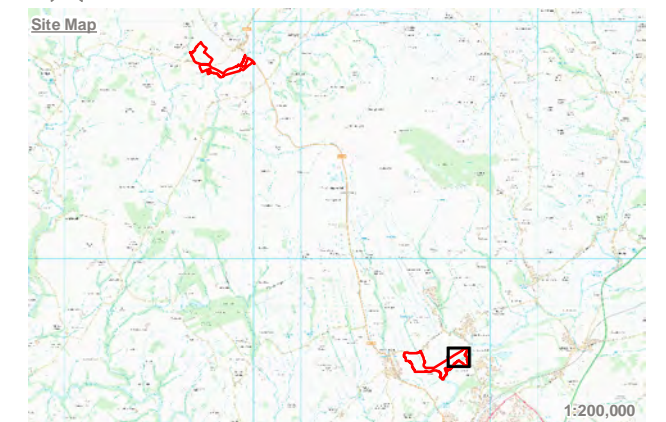
- Compound boundary
- Habitat excluded from calculations
- UK Habitat Classification**
- Native species rich hedgerow and trees associated with bank or ditch
- Native species rich hedgerow associated with bank or ditch
- Other neutral grassland
- Modified grassland
- Blackthorn scrub
- Mixed scrub
- River
- Ruderal/Ephemeral
- Developed land/sealed surface
- Other woodland - broadleaved

Note:

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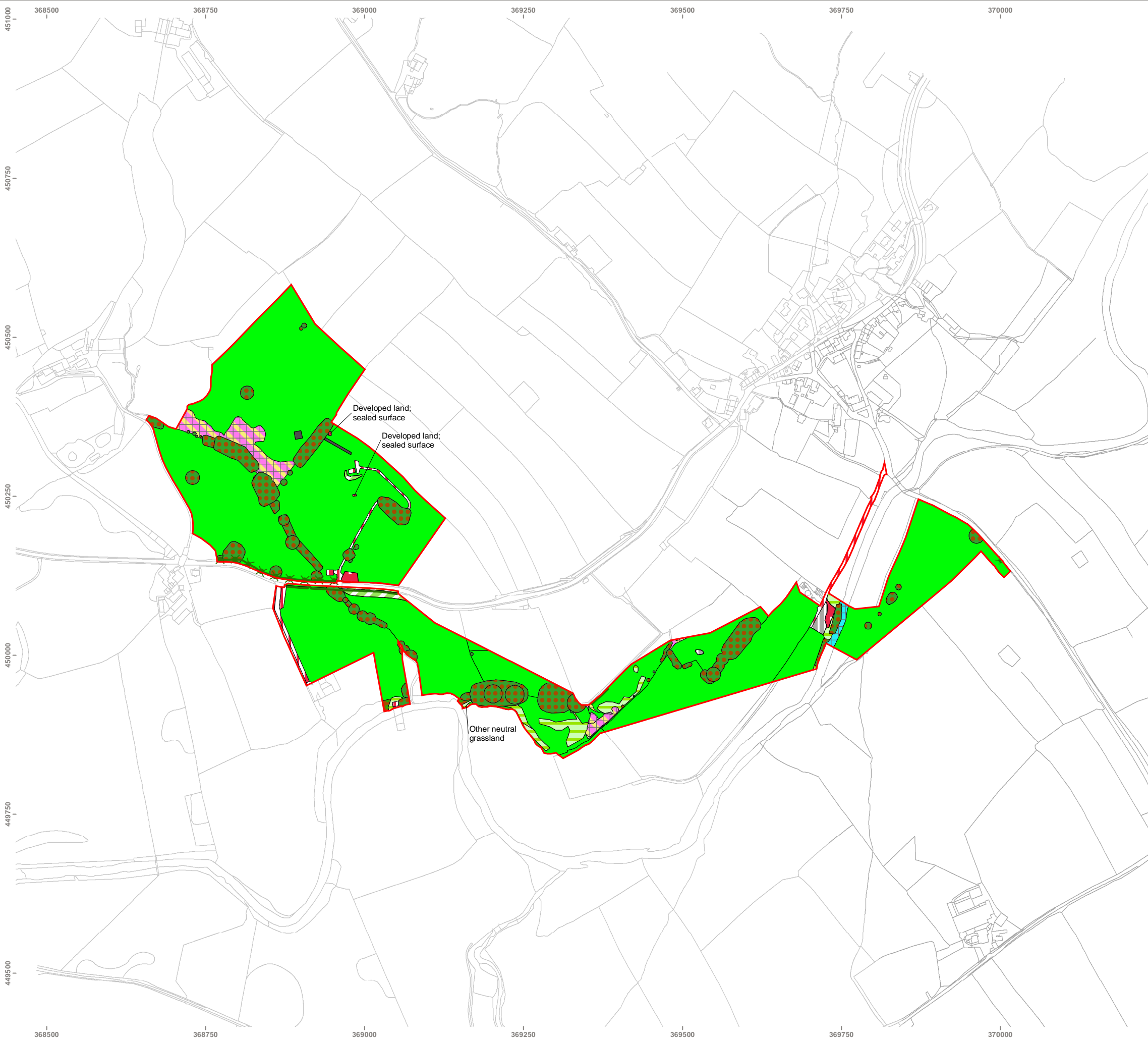
A	Included Ribble Crossing	JO	IH	14/05/21
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Project Haweswater Aqueduct Resilience Programme Biodiversity Net Gain				
Title Ribble Valley District Baseline Habitats - Bowland Section, Ribble Crossing				
Drawing Number G7478.04.014A.6				Sheet 6 of 6
Drawn JO	Checked AH	Approved IH	Scale 1:1,500 @ A3	Date 14/05/2021




KEY

- Compound boundary
- Habitat excluded from calculations
- Permanent loss of habitat

UK Habitat Classification

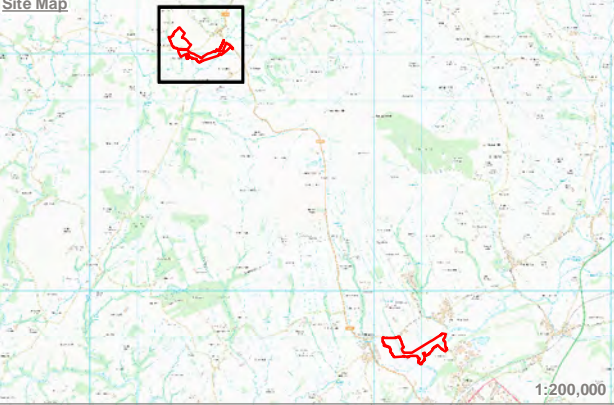
- Native hedgerow
- Native species rich hedgerow
- Native species rich hedgerow with trees
- Lowland fens
- Other lowland acid grassland
- Other neutral grassland
- Modified grassland
- River
- Ruderal/Ephemeral
- Developed land/sealed surface
- Vacant/derelict land/bare ground
- Other woodland - broadleaved
- Other woodland - mixed

Note:
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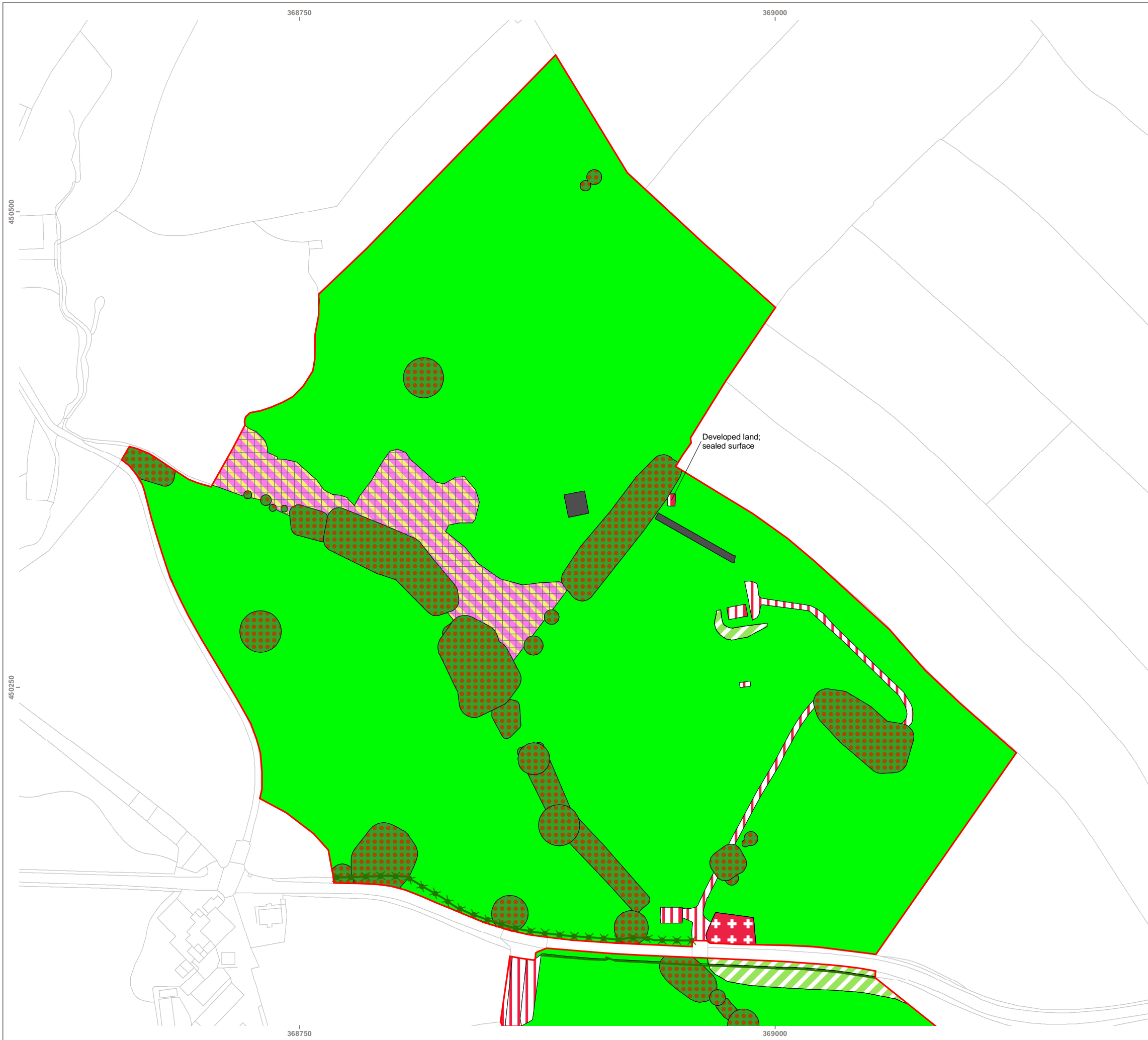
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Biodiversity Net Gain**

Title
**Ribble Valley District Post Development Habitats - Bowland
Section, Newton-in-Bowland Compound**

Drawing Number G7478.04.015A.1			Sheet 1 of 6	
Drawn JO	Checked AH	Approved IH	Scale 1:6,000 @ A3	Date 14/05/2021



KEY

- Compound boundary
- Habitat excluded from calculations
- Permanent loss of habitat

UK Habitat Classification

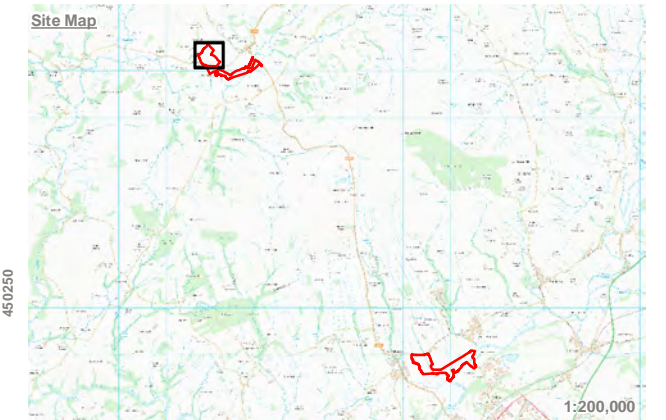
- Native hedgerow
- Native species rich hedgerow with trees
- Lowland fens
- Other lowland acid grassland
- Modified grassland
- Developed land/sealed surface
- Vacant/derelict land/bare ground
- Other woodland - broadleaved

Note:

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Biodiversity Net Gain**

Title
**Ribble Valley District Post Development Habitats - Bowland
Section, Newton-in-Bowland Compound**

Drawing Number G7478.04.015A.2	Sheet 2 of 6
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Drawn JO	Checked AH	Approved IH	Scale 1:2,000 @ A3	Date 14/05/2021
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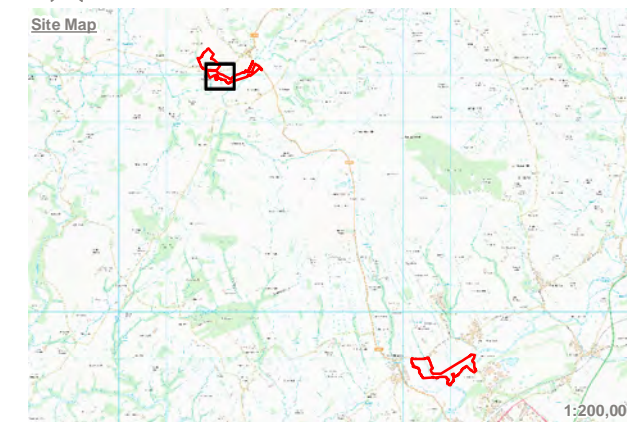
KEY

- Compound boundary
- Habitat excluded from calculations
- UK Habitat Classification**
- Native hedgerow
- Native species rich hedgerow with trees
- Lowland fens
- Other lowland acid grassland
- Other neutral grassland
- Modified grassland
- River
- Developed land/sealed surface
- Vacant/derelict land/bare ground
- Other woodland - broadleaved
- Other woodland - mixed

Note:

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Project
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Biodiversity Net Gain**

Title
**Ribble Valley District Post Development Habitats - Bowland
Section, Newton-in-Bowland Compound**

Drawing Number
G7478.04.015A.3

Sheet 3 of 6

Drawn	Checked	Approved	Scale	Date
JO	AH	IH	1:2,000 @ A3	14/05/2021



KEY

- Compound boundary
- Habitat excluded from calculations

UK Habitat Classification

- Native species rich hedgerow
- Lowland fens
- Other neutral grassland
- Modified grassland
- River
- Ruderal/Ephemeral
- Developed land/sealed surface
- Vacant/derelict land/bare ground
- Other woodland - broadleaved

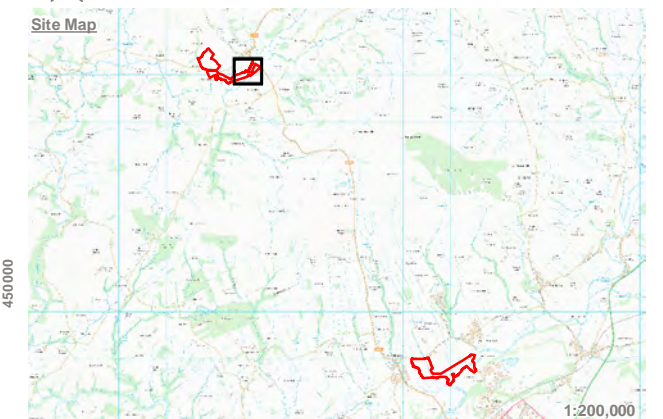
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Rev	Description	Drawn	Approved	Date



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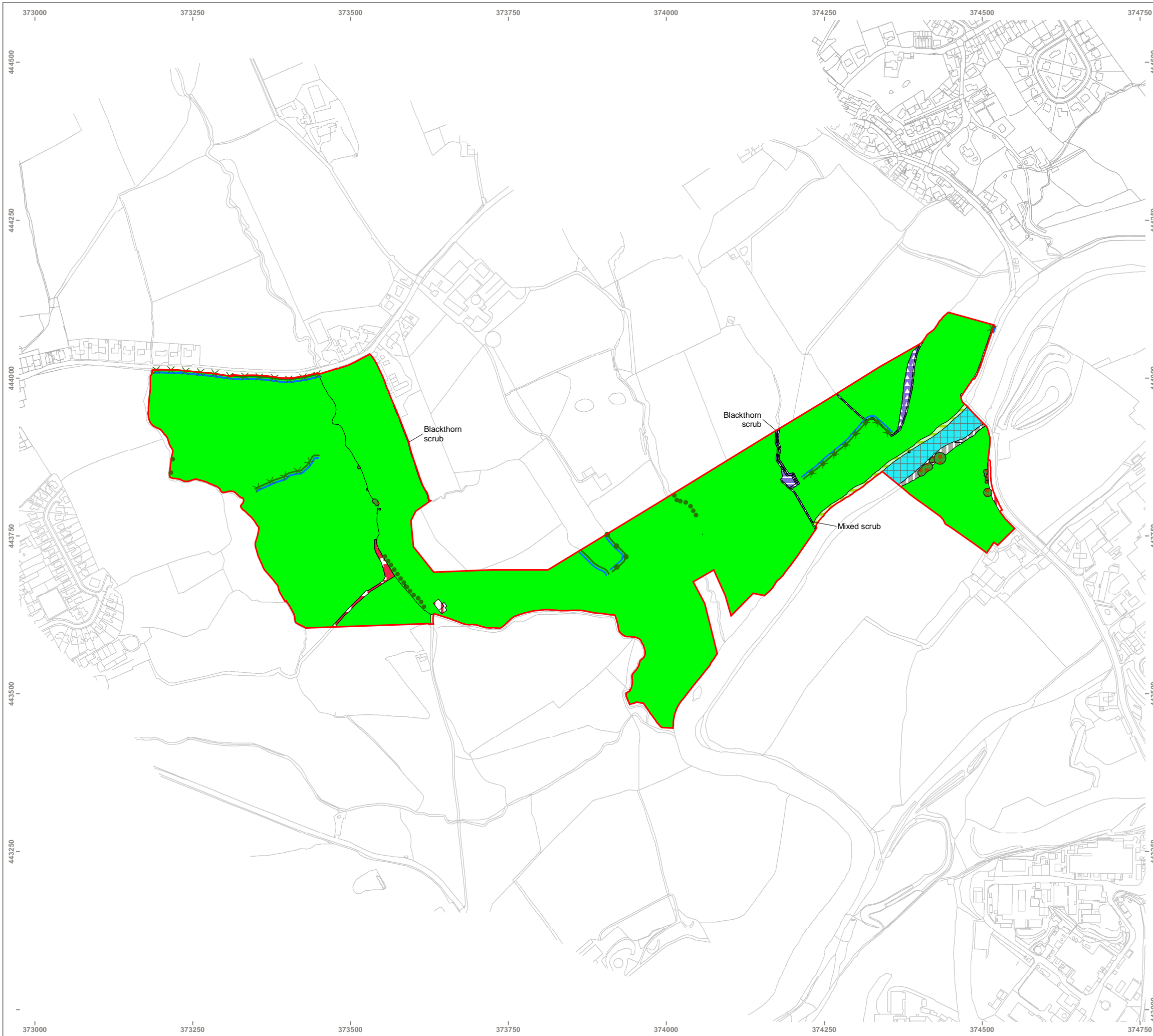
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Project
**Haweswater Aqueduct Resilience Programme
Biodiversity Net Gain**

Title
**Ribble Valley District Post Development Habitats - Bowland
Section, Newton-in-Bowland Compound**

Drawing Number G7478.04.015A.4	Sheet 4 of 6
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Drawn JO	Checked AH	Approved IH	Scale 1:2,000 @ A3	Date 14/05/2021
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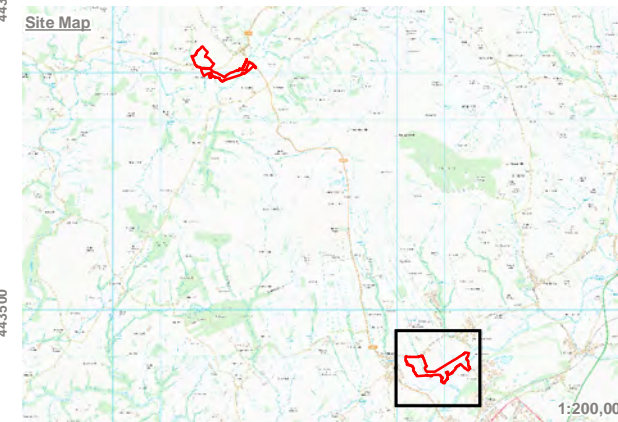


KEY

- Compound boundary
- Habitat excluded from calculations
- UK Habitat Classification**
- Line of Trees
- Native hedgerow associated with bank or ditch
- Native hedgerow with trees associated with bank or ditch
- Native species rich hedgerow and trees associated with bank or ditch
- Native species rich hedgerow associated with bank or ditch
- Other neutral grassland
- Modified grassland
- Blackthorn scrub
- Mixed scrub
- River
- Ruderal/Ephemeral
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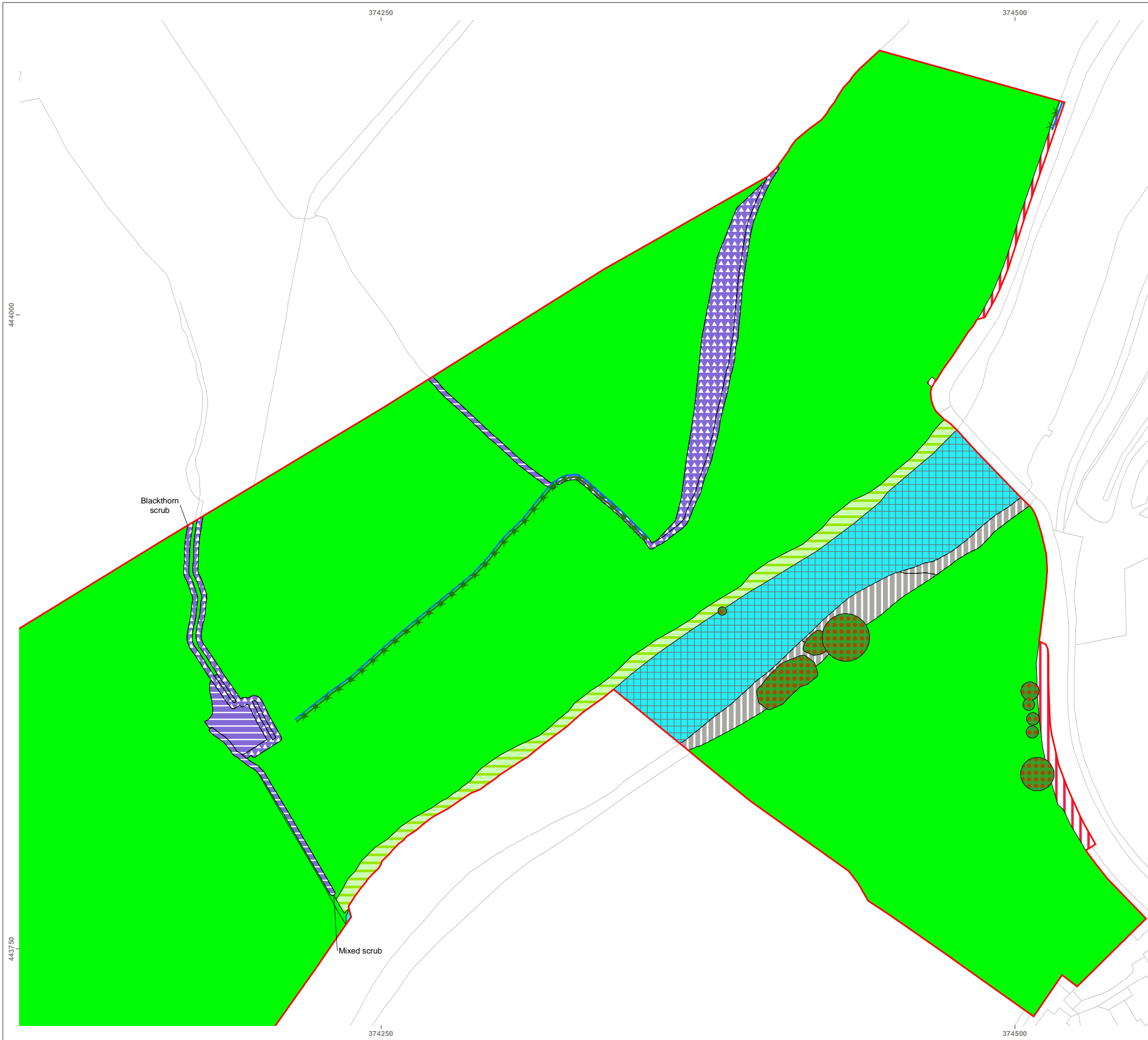
Project
**Haweswater Aqueduct Resilience Programme
Biodiversity Net Gain**

Title
**Ribble Valley District Post Development Habitats - Bowland
Section, Ribble Crossing**

Drawing Number
G7478.04.015A.5

Sheet 5 of 6

Drawn	Checked	Approved	Scale	Date
JO	AH	IH	1:6,000 @ A3	14/05/2021



KEY

- Compound boundary
- Habitat excluded from calculations
- UK Habitat Classification**
- Native species rich hedgerow and trees associated with bank or ditch
- Native species rich hedgerow associated with bank or ditch
- Other neutral grassland
- Modified grassland
- Blackthorn scrub
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Title
**Ribble Valley District Post Development Habitats - Bowland
Section, Ribble Crossing**

Drawing Number G7478.04.015A.6	Sheet 6 of 6
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