



Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

Supplementary Environmental Information Report

February 2022



Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

Project No: B27070CT
Document Title: Proposed Bowland Section
Supplementary Environmental Information Report
Document Ref.: LCC_RVBC-BO_SEI
Revision: 0
Date: February 2022
Client Name: United Utilities Water Ltd

Jacobs U.K. Limited

5 First Street
Manchester M15 4GU
United Kingdom
T +44 (0)161 235 6000
F +44 (0)161 235 6001
www.jacobs.com

© Copyright 2022 Jacobs U.K. Limited. The concepts and information contained in this document are the property of Jacobs. Use or copying of this document in whole or in part without the written permission of Jacobs constitutes an infringement of copyright.

Limitation: This document has been prepared on behalf of, and for the exclusive use of Jacobs' client, and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and the client. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this document by any third party.

Contents

1.	Introduction	1
1.1	Report Purpose.....	1
1.2	Background	1
1.3	Purpose of this report	3
1.4	Technical Deviation Between SEI Report and February 2022 Revised Planning Application (Lancaster City Council)	3
1.5	Regulatory Context	4
1.6	Structure of the Report.....	4
2.	Consultation Responses.....	6
3.	Proposed Design Changes and Description of New Development.....	10
3.1	Introduction	10
3.2	Lower Houses Compound Off-site Highways Works (Lancaster City Council).....	11
3.3	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing (Ribble Valley Borough Council) ...	12
3.4	Planning Application Boundary Amendment North of Newton-in-Bowland Compound (Ribble Valley Borough Council)	12
3.5	Hodder Crossing Access Track Amendment (Ribble Valley Borough Council).....	12
3.6	Newton-in-Bowland Compound Transport Route (Ribble Valley Borough Council).....	12
3.7	Removal of Selected Off-site Highways Works Locations (Ribble Valley Borough Council and Lancaster City Council)	13
3.8	Avoidance of Previously-Affected Tree Features Through Embedded Mitigation	14
3.9	Further Explanation of Points Raised in Table 6	32
4.	Additional Environmental Data.....	36
4.1	Introduction	36
4.2	Additional Environmental Data.....	36
4.3	AONB Major Development Test – Additional Information	39
5.	Likely Significant Effects and Cumulative Assessment	44
5.1	Likely Significant Effects	44
5.2	Cumulative Effects.....	50

1. Introduction

1.1 Report Purpose

- 1) This Supplementary Environmental Information report (SEI Report) provides information to be read in conjunction with the Environmental Statement and associated planning applications for the Proposed Bowland Section of the Haweswater Aqueduct Resilience Programme (HARP), which were submitted to Lancaster City Council and Ribble Valley Borough Council in June 2021.
- 2) The SEI Report specifically relates to:
 - Additional off-site highways works to the south-west of Bentham, and revised construction traffic access proposals for the Lower Houses Compound
 - Construction of a temporary bridge structure, within the current planning application boundary for the Newton-in-Bowland Compound, to span over a sensitive habitat known as Gamble Hole Farm Pasture Biological Heritage Site (BHS)
 - A widened planning application boundary for a section of tunnel below-ground level north of the Newton-in-Bowland Compound and east of Gamble Hole Farm. This revision to the planning application boundary enables the below-ground horizontal alignment of the tunnel to be fixed in due course
 - At the Newton-in-Bowland Compound, a revised alignment of the Hodder Crossing access track, north of the River Hodder, to provide further environmental mitigation and in response to a stakeholder request during the consultation period
 - Confirmation of the construction traffic access proposals in the Clitheroe area and nearby villages for the Newton-in-Bowland Compound
 - Removal of ten locations (RW01-RW07 inclusive and PP04, PP06 and RW04) where off-site highways works were originally proposed in the June 2021 Environmental Statement (refer to Volume 5 RVBC_BO_V5-P1-002 and LCC_RVBC_BO_V5-P1-002 Highways Works series of drawings)
 - Avoidance of some previously affected trees within the Lower Houses and Newton-in-Bowland Compounds through embedded mitigation proposals (i.e. avoidance through design).

1.2 Background

- 3) United Utilities Water Ltd. (United Utilities) is seeking planning consent for the Haweswater Aqueduct Resilience Programme (HARP). HARP is a programme of works comprising the replacement of six existing underground tunnel sections of the Haweswater Aqueduct. The existing aqueduct is part of United Utilities' water supply network in the north-west region, supplying water from Haweswater Reservoir in the Lake District National Park to customers in Cumbria, Lancashire and Greater Manchester. HARP is required to protect future water quality and provide a more resilient supply of clean drinking water.
- 4) The '*Proposed Programme of Works*' involves the construction of five new tunnel sections which are being developed under nine separate planning applications. The proposed replacement tunnel sections are listed below, from north to south:
 - Proposed Docker Section in the South Lakeland District area
 - Proposed Swarther Section in the South Lakeland District and Yorkshire Dales National Park areas
 - Proposed Bowland Section in the City of Lancaster and Ribble Valley Borough areas

- Proposed Marl Hill Section in the Ribble Valley Borough area
 - Proposed Haslingden and Walmersley Section in the Hyndburn Borough, Rossendale Borough and Bury Metropolitan Borough areas.
- 5) The Proposed Bowland Section¹ is located within the two local authority areas of Lancaster City Council and Ribble Valley Borough Council. The Proposed Bowland Section is located mainly within the Forest of Bowland Area of Outstanding Natural Beauty (AONB) with some works around Clitheroe, such as the Proposed Ribble Crossing, situated just outside of the AONB. The landscapes in which the different elements of the Proposed Bowland Section are located vary from moorland hills and rough pasture, moorland fringe and wooded rural valleys at higher elevations, and undulating lowland farmland bounded by hedgerows, interspersed with woodland and tree groups, at lower elevations. Settlements are generally located at the foot of river valleys and comprise rural villages such as Wray, Wennington and Low Bentham to the north and Newton-in-Bowland and Waddington to the south. There are dispersed residential properties and farmsteads located throughout the subject area.
- 6) The Proposed Bowland Section comprises the following components:
- Main construction compounds (Lower Houses Compound and Newton-in-Bowland Compound)
 - Wray Satellite Compound
 - Off-site highways works
 - Transport routes through Wray and Clitheroe and nearby villages
 - Proposed Ribble Crossing (a temporary, dedicated section of new haul route which would be located in open countryside to the north of Clitheroe, serving the Newton-in-Bowland Compound)
 - Park and ride facility at the existing staff car park at Ribblesdale Cement Works, Clitheroe, also serving the Newton-in-Bowland Compound
 - Heavy goods vehicle (HGV) holding facility at Ribblesdale Cement Works
 - A small HGV holding area at Spen Brow, south-west of Bentham, to enable vehicles to be safely marshalled to and from the Lower Houses Compound.
- 7) The Proposed Bowland Section has been subject to Environmental Impact Assessment (EIA) in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations').
- 8) The findings of the EIA were reported in the Proposed Bowland Section Environmental Statement, which was submitted to Lancaster City Council and Ribble Valley Borough Council in support of the June 2021 Planning Applications. The planning application reference numbers are provided below:
- Lancaster City Council (Proposed Bowland Section) – 21/00792/FUL
 - Ribble Valley Borough Council (Proposed Bowland Section) – 3/2021/0660.

¹ In the context of the planning application, the term Proposed Bowland Section relates not only to construction and operation of the proposed replacement tunnel section, but also ancillary activities such as a park and ride facility, construction vehicle holding area, off-site highways works and river crossings which form part of the proposals.

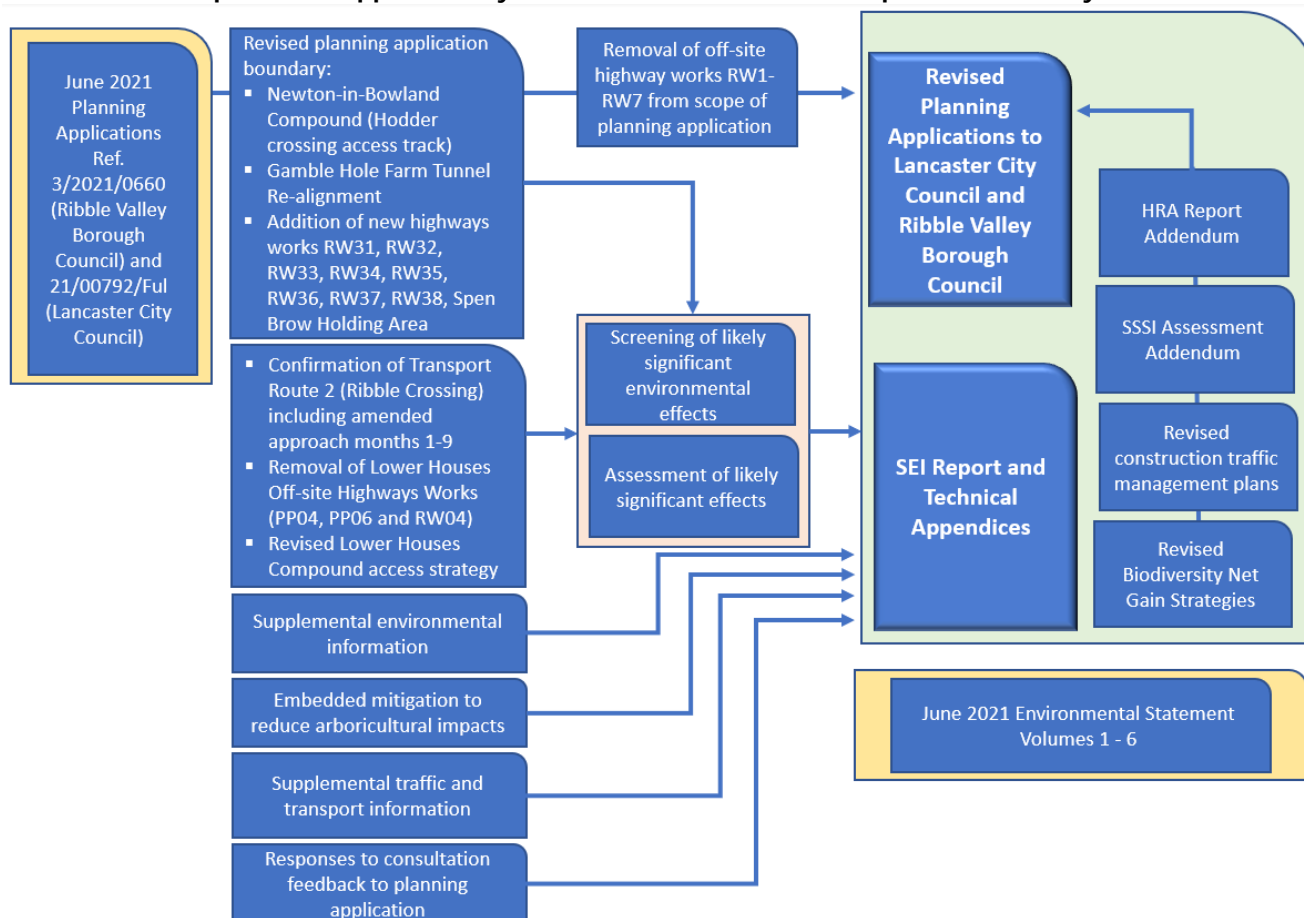
1.3 Purpose of this report

- 9) This SEI Report has been prepared to:
- Respond to consultation feedback received from statutory bodies, non-statutory organisations and local communities following submission of the planning application
 - Introduce and evaluate the environmental effects of proposed changes to elements of the design contained in the June 2021 Planning Applications, and also new and additional design proposals that have been developed since submission of the planning application
 - Present supplemental baseline information that was either not available at the time of the June 2021 Planning Applications, or is now required in support of the proposed design changes.
- 10) Following submission of the planning application, Lancaster City Council and Ribble Valley Borough Council undertook a period of consultation with the public, statutory consultees and interested parties. This resulted in feedback on the planning applications being provided to Lancaster City Council and Ribble Valley Borough Council. United Utilities has reviewed this feedback and provides, in this SEI Report, responses to the feedback submitted during the consultation period.
- 11) Some design changes have been identified following the submission of the planning applications. In some cases, these proposed changes have arisen from continued development of the design, discussions with land owners, a desire to enhance construction or design performance taking account of likely significant environmental effects, and as a direct result of feedback received during the consultation period. This SEI Report considers the effect these changes have on the conclusions drawn in the original Environmental Statement.
- 12) Illustration 1 summarises the scope of the SEI Report.
- 13) It is important to note that this SEI Report should be read in conjunction with the June 2021 Environmental Statement; the two documents are not mutually exclusive. In most instances the June 2021 Environmental Statement remains unaffected by the proposed changes, and therefore much of the original documents remain valid. Where appropriate, this SEI Report directs the reader to where in the June 2021 Environmental Statement further relevant information is available to support the content and conclusions contained in the SEI Report. Similarly, where descriptions and findings contained in the June 2021 Environmental Statement have been superseded by amendments to the proposals or other outcomes following the planning submission, these are explained with reference to the June 2021 Environmental Statement.

1.4 Technical Deviation Between SEI Report and February 2022 Revised Planning Application (Lancaster City Council)

- 14) During production of this SEI Report a decision was taken to remove three proposed off-site highways works from the scope of the revised planning application to Lancaster City Council. The references for these three works locations are PP04, PP06 and RW04 and were associated with the transport route serving the Lower Houses Compound. The locations of these highways works are shown in Volume 5 of the June 2021 Environmental Statement.
- 15) Since these locations had already been incorporated within the scope of the environmental surveys, assessment and reporting undertaken for the Lower Houses Compound, it was decided to retain these works within the scope of the SEI Report. In practical terms, this means that some environmental effects described in this report and its appendices may be slightly over-estimated, and that there is a technical scope deviation when compared with the February 2022 revised planning application (which has discounted these three locations). This represents a reasonable worst case approach from an environmental assessment viewpoint, and does not make a material difference to the conclusions drawn in the report or to the revised planning application.

Illustration 1: Scope of the Supplementary Environmental Information Report and February 2022 Submission



1.5 Regulatory Context

16) The SEI Report falls within the definition of 'any other information', (alternatively referred to as 'relevant information') described under Regulation 2 of the EIA Regulations. This is on the basis that:

- At least part of the SEI submitted is new environmental information which informs the assessment and understanding of likely significant environmental effects within the original Proposed Bowland Section Environmental Statement
- The information does not solely confirm the assessment findings in the original Environmental Statement, or relates to new mitigation which would in any event not be likely to give rise to significant environmental effects

17) It is recognised that since the SEI Report does fall within the definition of 'any other information / relevant information' under the EIA Regulations, the publicity/consultation requirements set out in Regulation 25(3) to (11) must be followed.

1.6 Structure of the Report

18) The remainder of this report is presented in four main sections:

- Section 2 provides responses from United Utilities to the comments received during the statutory consultation period following submission of the Bowland planning applications 21/00792/FUL and 3/2021/0660. Comments on the planning application were received from statutory agencies, local authority officers, non-statutory organisations as well as public comments where a response has been provided to the key themes. Section 2 sign-posts the reader to relevant sections in the main SEI Report and the technical appendices where consultation response can be found

- Section 3 explains the proposed design changes and evaluates whether they may have a material effect on the conclusions drawn in each of the technical chapters of the June 2021 Environmental Statement. In some cases there is no change in the environmental outcomes described in the June 2021 Environmental Statement and for topics falling into this category they are screened out of any further environmental assessment. For other EIA topics further evidence is provided in Section 2 and the technical appendices to support the conclusion that the proposed design and traffic management changes to the Proposed Bowland Section do not give rise to any new likely significant effects, or different conclusions to those drawn in the June 2021 Environmental Statement
- Section 4 provides supplemental environmental information which was not available at the time the June 2021 Environmental Statement was published. Section 4 also presents updated environmental information – specifically in relation to arboricultural data – which arises from embedded mitigation proposals which post-date the June 2021 Planning Application. These embedded mitigation proposals at the Lower Houses Compound and Newton-in-Bowland Compound result in fewer trees at risk of loss compared with what was described in the June 2021 Environmental Statement
- Section 5 provides concluding comments summarising the main points to be drawn from the SEI Report. It also reappraises the cumulative environmental effects of the Proposed Bowland Section, compared with the cumulative assessment presented in Volume 2 of the June 2021 Environmental Statement.

2. Consultation Responses

- 19) This section briefly summarises the nature and scope of feedback received during the statutory consultation period following submission of the planning application in June 2021. Responses were received from statutory agencies, local authority officers, non-governmental organisations as well as members of the public. Appendix A.1 (Lancaster City Council) and Appendix A.2 (Ribble Valley Borough Council) offer more detailed responses to many of the comments received from statutory and non-statutory organisations, as well as members of the public. Both appendices also direct the reader to where within the SEI Report and revised planning application documentation further information to address the feedback can be found.
- 20) Appendix A1 provides responses to representations to the Lancaster City Council application which have been submitted by the following:
- **Lancashire County Council (Historic Environment Team):** no objections raised, however, advise that a staged programme of post-consent, pre-commencement, survey work is secured by means of a planning condition
 - **Natural England:** concerns raised in regard to proposed level of mitigation for construction compounds; concerns raised in connection with the potential impact of the off-site highways works; challenge concerning the cumulative environmental effects of the Proposed Bowland Section as a whole and its effect on the character and status of the AONB; request for planning conditions to protect soil resources affected by construction activities
 - **Lancaster City Council (Environmental Health):** no objections to the proposed development, providing sufficient mitigation procedures are developed and implemented with the interests of local people taken into account
 - **Coal Authority:** no objections to the planning applications
 - **Greater Manchester Ecology Unit:** satisfied with general assumptions and scope of ecological survey work; planning conditions recommended in respect of tree felling and vegetation clearance; for protected species, a method statement detailing reasonable avoidance measures is required, landscape management plans to be prepared for any proposed new on-site landscapes and habitats and the provision of an Ecological Clerk of works during enabling, construction and reinstatement phases; recommended obligations for management and monitoring of reinstated habitat for a period of at least 30 years
 - **Lancaster City Council (Arboricultural Officer):** no objections, subject to the provision of detailed site-specific Arboricultural Method Statements and Tree Protection Plans
 - **North Yorkshire County Council (Highways Authority):** request details of the routes to be used by HGV construction traffic and highway condition surveys on these routes; details of site working hours; measures to control and monitor construction noise; protection of carriageway and footway users at all times
 - **Ribble Valley Borough Council:** no objections, request for detailed consideration on handling of waste and the impact on the highways network as well as consideration of the impact on landscape and ecology
 - **Craven District Council:** no objections, emphasised any affected land should be reinstated on completion of works back to pre-existing levels; traffic to be managed in accordance with details provided
 - **Lancashire County Council (Highway Authority):** concerns raised over non-vehicular users of local road networks affected by construction vehicles, and potential impacts on private access; request that

an agreement is reached on how the access routes would be maintained; requirement to allow unrestricted access, not only for construction traffic but also other highway users; swept path analysis and rationale as to the reasons for road widening also requested

- **Lancashire County Council (Public Right of Way Officer):** request for further detail of mitigation measures proposed to ensure the safety of users of impacted footpaths; and safety queries raised for users of footpaths which intersect with off-site highways works
- **Forest Of Bowland AONB (Ecology):** concerns raised over very high distinctiveness (VHD) habitats and veteran trees; challenge to scope of assessment of likely ecological effects of the off-site highway works and the necessary avoidance, mitigation and compensation measures; incomplete protected species surveys and presence/absence surveys for at-risk species; uncertainty over the extent of habitat loss; queried the arboricultural assessment of the proposed off-site highway works and Wray Satellite Compound
- **Forest Of Bowland AONB (Landscape):** request for greater detail for tree survey / arboricultural assessment for areas affected by off-site highways works and Wray Satellite Compound; queries over reporting of total tree features lost and request for further evidence that all reasonable options for avoidance and retention have been exhausted
- **Tatham Parish Council:** no objection provided clarification on operational times of the proposed one-way traffic system and agreed involvement for the Parish Council in the proposed ongoing community engagement forum
- **Wennington Parish Council:** comments around road safety for local people and road users, including: proposal for further reduction in speed limits and active monitoring of construction vehicles passing through the parish; requested a detailed action plan to deliver environmental net gain and net zero carbon emissions; community engagement and wellbeing; queried the introduction of traffic control measures on journeys by local residents, but supported the limitation of HGV movement during peak hours
- **Hornby Parish Council:** request for further traffic management measures including: stop signs and clearer road markings; further reduction in speed limits; speed displays to make drivers aware of their speed; concerns raised over deterioration of road surfacing, safety of residents, volumes of HGV movements and potential for structural damage to homes
- **Bentham Town Council:** request for updates regarding programme, consideration of residents and traffic management
- **Members of the public:** a broad range of comments, including construction traffic and highways; noise and air pollution; residential amenity; the welfare of local people and impacts on local businesses.

21) Appendix A2 provides responses to representations to the Ribble Valley Borough Council application which have been submitted by the following:

- **Lancashire County Council (Historic Environment Team):** no objections raised, however, advise a staged programme of post-consent, pre-commencement, survey work is secured by means of a planning condition
- **Natural England:** concerns raised in regard to proposed level of mitigation for construction compounds; concerns raised in connection with the potential impact of the off-site highways works; challenge concerning the cumulative environmental effects of the Proposed Bowland Section as a whole and its effect on the character and status of the AONB; request for planning conditions to protect soil resources

- **Ribble Valley Borough Council (Environmental Health):** proposed planning conditions relating to the adoption of standard mitigation methods and best practicable means for minimising nuisance
- **Lancaster City Council:** no objection provided that appropriate conditions are in place to ensure the appropriate handling and management of surplus materials arising from the tunnel boring operations
- **Lancashire County Council (Highways):** further details of traffic management measures and highways interventions are needed to satisfy the authority's requirements for the safe movement of construction vehicles on the local road network; further clarifications are required on some of the technical details presented in the June 2021 Environmental Statement and Transport Assessment
- **SABIC UK Petrochemicals Limited:** ongoing engagement with SABIC is necessary in connection with the designated ethylene pipeline with which the proposed alignment of the Ribble Crossing intersects
- **Ribble Fisheries Consultative Association:** technical queries and challenges concerning the impact of the Proposed Bowland Section on fisheries in the catchment, especially on the salmonid resources of the River Ribble
- **Forest of Bowland AONB (Landscape):** various technical queries, clarifications or challenges regarding the site selection process for the proposed works areas; off-site highways works; cumulative impacts of the various elements of the Proposed Bowland Section; clarification of tree losses and trees at risk of removal, both within the main compounds and at off-site highways works locations
- **Forest of Bowland AONB (Ecology):** various technical queries, clarifications or challenges regarding Habitats Regulations Assessment (HRA), and approaches to designated and non-designated habitats and protected species surveys and assessment; comments relating to the need for elements of the Proposed Bowland Section, such as the Ribble Crossing, and the associated site selection process; technical clarifications on the Biodiversity Net Gain (BNG) calculations; licensing requirements for works affecting protected species
- **Lead Local Flood Authority (Lancashire County Council):** request to the local planning authority to attach appropriate conditions to a grant of consent to ensure that the scope of development and the construction management and flood risk mitigation measures are implemented in accordance with the proposals set out in the flood risk assessment reports in the June 2021 Environmental Statement; operational maintenance and operating parameters of the new aqueduct and associated infrastructure are delivered in accordance with agreed conditions and that verification audits are undertaken to validate the construction and operation phases have been or are being delivered as per agreement with the Lead Local Flood Authority
- **Grindleton Parish Council:** technical queries and challenges on various matters of local concern, including traffic volumes, traffic management, local business interests, flood risk and residential amenity
- **Bowland Forest Parish Council:** construction traffic and highways management
- **Members of the public:** a broad range of comments, including construction traffic and highways; noise and air pollution; residential amenity; the welfare of local people and impacts on local businesses and tourism.

22) It should be noted that Appendix A.1 and Appendix A.2 have considered responses received during the period between the submission of the planning applications (in June 2021) and December 2021. To enable completion of the SEI Report and submission of the revised planning application to Lancaster City Council and Ribble Valley Borough Council, the cut-off date for any comments received by the planning authority to be addressed within this SEI Report was 9 December 2021. Any comments

received after 9 December 2021, either in connection with the June 2021 Planning Application or the February 2022 Revised Planning Application, will be considered separately, with responses provided as appropriate.

3. Proposed Design Changes and Description of New Development

3.1 Introduction

- 23) This section provides a summary of the proposed revisions and additions to the Proposed Bowland Section which update the June 2021 Planning Applications. These changes comprise:
- Additional off-site highways works to the south-west of Bentham, and revised construction traffic access proposals for the Lower Houses Compound
 - Construction, within the current planning application boundary of the Newton-in-Bowland Compound, of a temporary bridge structure to span over a sensitive habitat known as Gamble Hole Farm Pasture Biological Heritage Site (BHS)
 - Widened planning application boundary for a section of tunnel below-ground level north of the Newton-in-Bowland Compound and east of Gamble Hole Farm. This revision to the planning application boundary enables the below-ground alignment of the tunnel to be fixed in due course
 - At the Newton-in-Bowland Compound, revised alignment of the Hodder Crossing access track, north of the River Hodder, to provide further environmental mitigation and in response to a stakeholder request during the consultation period
 - Confirmation of the construction traffic access proposals in the Clitheroe area and nearby villages for the Newton-in-Bowland Compound
 - Removal of ten locations (RW01-RW07 inclusive and PP04, PP06 and RW04) where off-site highways works were originally proposed in the June 2021 Environmental Statement (refer to Volume 5 RVBC_BO_V5-P1-002 Highways Works series of drawings)
 - Avoidance of some previously affected trees within the Lower Houses and Newton-in-Bowland Compounds through embedded mitigation proposals (i.e. avoidance through design).
- 24) Following submission of the June 2021 Planning Applications, the intended use of the proposed Wray Satellite Compound has also been updated to take account of a proposed revised construction vehicle routing strategy considered necessary to avoid excessive disruption to the local community particularly along Main Street in Wray and detailed in the February 2022 construction traffic management plan (the February 2022 CTMP).
- 25) The satellite compound was originally intended to be a park and ride area and holding facility for exceptional loads requiring access through Wray and Helks Brow to the Lower Houses Compound (Route 1). Whilst this remains the case, the proposed Wray Satellite Compound would now also be used as a marshalling facility for general construction traffic seeking access along via Wennington and Low Bentham to the Lower Houses Compound (Route 2). HGVs would be dispatched, usually in batches of up to four vehicles at a time (though two-three would be more typical), along Route 2 to the vehicle holding area at the junction of Spen Brow and Furnessford Road.
- 26) The February 2022 CTMP, however, makes provision for a larger number of vehicles at the Wray Satellite Compound and demonstrates that there is sufficient capacity to accommodate additional HGVs on the B6480, thereby avoiding any likelihood of HGVs needing to queue on the Hornby Road and giving rise to possible highways safety risks. Marshalls would be used on the final section of Route 2, south of Spen Brow on Furnessford Road, to avoid potential conflict between construction traffic and other road users (refer to paragraph 31 below) and ensure that all vehicles are travelling in one direction at any one time along this stretch.
- 27) The proposed variation to the scope of HGV use at the Wray Satellite Compound, when compared with the original June 2021 Planning Application to Lancaster City Council, relates only to HGV management

techniques within the existing planning application boundary. Since the newly-proposed vehicle holding area at Spen Brow is addressed in this SEI Report under the off-site highways works, the traffic management proposals alone at the Wray Satellite Compound would not give rise to any new or additional likely significant environmental effects. The proposed changes to the use of the Wray Satellite Compound have therefore been discounted from further consideration in this report.

- 28) Figures 3.1a and 3.1b present the updated planning application boundaries for the Proposed Bowland Section; more detailed and larger scale drawings are provided in the February 2022 Revised Planning Application documents. Figure 3.1a focuses on the main construction compounds and the route of the tunnel below ground level. Figure 3.1b shows all the elements of the Proposed Bowland Section at a smaller scale, including satellite compounds and off-site highways works.
- 29) A screening exercise has been undertaken to identify where likely significant effects may arise in relation to the changes and new proposals. This has involved testing the proposed changes against each EIA topic to establish whether any likely significant effect may arise. The outcomes are summarised in Table 6.

3.2 Lower Houses Compound Off-site Highways Works (Lancaster City Council)²

- 30) The June 2021 Environmental Statement and June 2021 Planning Application both provided details of a proposed one-way system for all vehicles along Helks Brow, Long Lane, Fairheath Road, Spen Brow and Furnessford Road. The intention of the one way system was to ensure the safety of all road users and to prevent construction vehicles meeting oncoming vehicles on single track sections of road.
- 31) Following submission of the June 2021 Planning Application to Lancaster City Council, an alternative traffic management proposal has been included whereby the former one-way system has been replaced in favour of limited controls along the section of road between Spen Brow and Lower Houses Compound (principally Furnessford Road). This section of road would be limited to access only and the movements of all vehicles would be actively controlled along the full length to ensure vehicles are only travelling in one direction at any one time. Marshalls would be used along the route to ensure no conflict between construction traffic and other road users i.e. HGVs would not be cleared to proceed if there is another vehicle on the route and if a vehicle arrives at an access point once a HGV has been cleared to proceed it would be held until the HGV has passed.
- 32) SEI Report Figure 1 shows the proposed additional planning application boundaries associated with the Lower Houses off-site highways works. Eight³ additional road widening locations (RW31-RW38) have been included along the Eskew Lane – Long Lane – Fairheath sections of road between the B6480 and Spen Brow. This is to ensure that vehicles approaching each other can pass. In addition, two laybys are proposed on Spen Brow at the top of Furnessford Road which would allow vehicles to wait whilst the onward section of road to Lower Houses Compound is made clear of vehicles travelling in the opposite direction.
- 33) The use of the proposed satellite compound at Wray remains unchanged i.e. it would be used to marshal HGVs and brief drivers, and provide a park and ride facility for workers.
- 34) With the proposed amendments to the construction vehicle access strategy, and based partly on stakeholder feedback, three proposed off-site highways works locations (PP04, PP06 and RW04) are no longer required. They have therefore been removed from the scope of the revised planning application to be submitted to Lancaster City Council.

² Some of the proposed off-site highways works are located within the administrative area of Craven District Council. Craven District Council has entered into an agreement with Lancaster City Council which enables the latter authority to determine those elements of the planning application located in Craven District Council.

³ RW32 and RW33 are combined into a single planning application boundary. As a consequence, SEI Report Figure 1 shows seven rather than eight planning application boundaries.

3.3 Proposed Temporary Gamble Hole Farm Pasture BHS Crossing (Ribble Valley Borough Council)

- 35) The proposed bridge structure would be approximately 40 m in length and 4.5 m in height, with earthworks either side of the structure to link the access track road to the bridge deck. Illustration 2 presents the position of the crossing in relation to the sensitive habitat, and Illustration 3 shows long sections of the structure. Further details providing justification for this new temporary bridge within the Newton-in-Bowland Compound, and an overview of its environmental effects, are presented later in this report.

3.4 Planning Application Boundary Amendment North of Newton-in-Bowland Compound (Ribble Valley Borough Council)

- 36) A revision has been made to the planning application boundary for the Bowland Tunnel adjacent to and north of the Newton-in-Bowland Compound. The planning application boundary has been widened for the below-ground tunnel construction route to enable greater construction flexibility level in response to potential future development (unassociated with HARP) at the surface and to manage ground conditions. The broader construction boundary applies over a length of approximately 1.4 km. The tunnel bore diameter would however remain the same irrespective of where within the planning application boundary the tunnel is ultimately constructed.

3.5 Hodder Crossing Access Track Amendment (Ribble Valley Borough Council)

- 37) The June 2021 Environmental Statement and June 2021 Planning Application to Ribble Valley Borough Council both provided details of a temporary access track that would be required to take construction vehicles from the B6478 Hallgate Hill road to the Newton-in-Bowland Compound. This access track would cross farmland and would include a temporary bridge over the river Hodder.
- 38) Following submission of the June 2021 Planning Application, it was decided to realign approximately 400 m of the access track to the north of the River Hodder to minimise severance of farm land.⁴

3.6 Newton-in-Bowland Compound Transport Route (Ribble Valley Borough Council)

- 39) The June 2021 Environmental Statement (Volume 4 Appendix 3.1) made reference to two transport route options to serve the main construction compounds on the Proposed Bowland Section – further details are provided below at Section 3.2.2. It was confirmed in the June 2021 Environmental Statement that one of the two options would be selected prior to determination of the Proposed Bowland Section planning application by Ribble Valley Borough Council. It is now possible to confirm that Transport Route 2 – referred to in the June 2021 Environmental Statement as the Ribble Crossing – has been adopted in preference to Transport Route 1, albeit with a need to use local roads for a short period of approximately nine months to enable construction of the temporary crossing.
- 40) The construction of the Ribble Crossing is anticipated to take approximately nine months in total and would also be required for access to the proposed Braddup and Bonstone Compounds associated with the Proposed Marl Hill Section (planning application 3/2021/0661). It is envisaged that access to the northern extent of the Ribble Crossing, off West Bradford Road between Waddington and West Bradford, would be required to construct the temporary haul route. For this reason, and to enable simultaneous construction of the Hodder Crossing proposed as part of planning application 3/2021/0660, United Utilities is seeking flexibility to use Transport Route 1 for a period of nine months. Construction traffic would be routed along the Ribble Crossing as soon as it is constructed. All construction traffic associated with the actual tunnel construction works would use the Ribble Crossing.
- 41) On completion of construction works, the Ribble Crossing would also be used for any traffic associated with the commissioning of the new tunnel sections and reinstatement of associated compounds

⁴ The proposed Hodder Crossing access track would still unavoidably give rise to a likely significant effect on a groundwater-dependent terrestrial ecosystem (GWDTE) within this part of the planning application boundary; this is reported in the June 2021 Environmental Statement.

(Braddup, Bonstone and Newton-in-Bowland). After completion of all works the Ribble Crossing would be decommissioned and the location reinstated back to agricultural land. There would be tree and hedgerow planting to reinstate vegetation within the landscape, as described in the June 2021 Environmental Statement Volume 6 Chapter 6.

- 42) Further detail regarding the anticipated type and number of HGV movements requiring access along the existing road network during this nine month period is presented in an updated Construction Traffic Management Plan, which accompanies the February 2022 Planning Application, and in Technical Transport Report Appendix B8(i) to this SEI Report.
- 43) In summary, it is anticipated that during the nine month period the average and peak daily movements set out in Table 1 would apply:

Table 1: HGV Movements on Transport Route 1 During Initial Nine Month Works Phase⁵

Route	Daily two-way HGV movements ⁶	
	Peak	Average
Route 1 (through Clitheroe and Waddington)	121	78
Route 2 (through Chatburn, Grindleton and West Bradford) by exception only	4	N/A
West Bradford Road north of Pimlico link road (serving the compounds either side of the River Ribble)	16	6
Pimlico Link Road	121	88

- 44) As shown in Table 1, there would be only a very infrequent requirement for HGVs to travel through Chatburn, Grindleton and West Bradford on Route 2. On this basis, it is proposed that such movements would be managed without the need for the implementation of the highway modifications referenced as RW01, RW02, RW03, RW04, RW05, RW06, RW07 and PR01 in the June 2021 Planning Application (see Volume 5 of the June 2021 Environmental Statement for details of these now superseded proposals). For this reason, the Series 12 highways works planning drawings have been amended in the February 2022 Revised Planning Application to reflect the removal of these works.

3.7 Removal of Selected Off-site Highways Works Locations (Ribble Valley Borough Council and Lancaster City Council)

- 45) Volume 5 of the 2021 Environmental Statement presented the locations of proposed off-site highways works (i.e. locations on the public highway away from the main construction compounds) that are required at both the north and south end of the Proposed Bowland Section. Through subsequent review of the transport routes and construction vehicle access strategies for both main compounds, it has been determined that ten proposed off-site highways works are no longer required: RW01-RW07 inclusive, serving the Newton-in-Bowland Compound, and PP04, PP06 and RW04 serving the Lower Houses Compound.
- 46) RW01-RW07 in the Clitheroe (Ribble Valley Borough Council area) have been discounted from the assessment presented in this SEI Report. Conversely, partly due to the timing of the decision to discount PP04, PP06 and RW04 from the scope of highways works in the Lancaster City Council and Craven District Council areas, these three locations are embedded in the updated assessment of effects for topics such as landscape and visual effects, ecology and arboriculture. This divergent approach between the north and south ends of the proposed tunnel section does not give rise to any material effect on

⁵ The table presents estimated cumulative traffic flows associated with the Newton-in-Bowland Compound (Ribble Valley Borough Council) and the compounds associated with the Proposed Marl Hill Section (also Ribble Valley Borough Council) as construction vehicles associated with the two proposed developments would share the same local public roads.

⁶ A daily two-way flow comprises total vehicle movements during the course of the day i.e. one vehicle making an outward and return journey represents two daily vehicle movements.

either the approaches to or the outcomes of the additional assessments. With the inclusion of three highways elements which no longer form part of the scope of the assessment, the outcome is a slight over-estimation of the overall environmental effects of the Proposed Bowland Section thereby representing a reasonable worst case approach.

3.8 Avoidance of Previously-Affected Tree Features Through Embedded Mitigation

- 47) Following submission of the June 2021 Environmental Statement further work has been undertaken to minimise the impacts on arboricultural features through embedded mitigation. This has reduced the number of trees adversely affected when compared with the June 2021 Environmental Statement. The methodology is consistent with Volume 4, Appendix 6.6, Section 1.6 of the June 2021 submission.
- 48) The tables below compare the tree impacts reported in the June 2021 Environmental Statement and the revised (February 2022) summary of arboricultural impacts at the main construction compounds, taking account of embedded mitigation developed after June 2021. Individual tables are included for each of the proposed main compound areas (Tables 2 and 3 for Lower Houses Compound and Tables 4 and 5 for Newton-in-Bowland Compound).
- 49) The updated associated Tree Constraints and Assessment Plans (LCC_RVBC-BO-FIG-006-005-AD1) contain information on tree feature locations and their RAG assessment impacts. The update to the Preliminary Trees at Risk Plan (LCC_RVBC-BO-FIG-006-006) shows the extent of potential tree loss, trees at risk and tree retention within the planning application boundary.

3.8.1 Lower Houses Compound (Lancaster City Council)

- 50) Table 2 summarises the RAG status of tree features within the Lower Houses Compound planning application boundary, as presented in the June 2021 Environmental Statement.

Table 2: June 2021 Environmental Statement RAG summary for tree features

BS5837: 2012 grades	RAG status			
	Removal/ Partial Removal	RRAtR	RwPM	Subtotals
A	0	0	1	1
B	1	5	12	18
C	0	3	11	14
U	0	1	0	1
Subtotals	1	9	24	34

- 51) Table 3 summarises the updated RAG status of tree features within the Lower Houses Compound planning application boundary, taking account of embedded mitigation developed following the June 2021 Planning Application.

Table 3: Updated (February 2022) RAG summary for tree features

BS5837: 2012 grades	RAG status			
	Removal/ Partial Removal	RRAtR	RwPM	Subtotals
A	0	0	3	3
B	1	0	23	24
C	0	1	33	34
U	0	0	2	2
Subtotals	1	1	61	63

- 52) The revised assessment for Lower Houses Compound confirms that 97 % (61) of the tree features surveyed fall into the category of *retained with protection measures*.
- 53) Eight features have changed from *at risk of removal aiming to retain* to *retain with protection measures*.
- 54) Following supplementary survey work at Lower Houses Compound, 29 additional features (prefixed with a 'b') have been added to the survey baseline. Only one of these features (H2b) is assessed as *at risk of removal* with all other features assessed as *retainable with protection measures*.

3.8.2 Newton-in-Bowland Compound (Ribble Valley Borough Council)

- 55) Table 4 summarises the RAG status of tree features within the Newton-in-Bowland Compound planning application boundary, as presented in the June 2021 Environmental Statement.

Table 4: June 2021 Environmental Statement RAG summary for tree features

BS5837:2012 grades	RAG status			
	Removal/ Partial Removal	RRAtR	RwPM	Subtotals
A	1	5	10	16
B	9	21	26	56
C	14	22	24	60
U	0	3	3	6
Subtotals	24	51	63	138

- 57) Table 5 summarises the updated RAG status of tree features within the Newton-in-Bowland Compound planning application boundary, taking account of embedded mitigation developed following the June 2021 Planning Application.

Table 5: Updated (February 2022) RAG summary for tree features

BS5837:2012 grades	RAG status			
	Removal/ Partial Removal	RRAtR	RwPM	Subtotals
A	1	0	15	16
B	5	1	50	56
C	11	4	45	60
U	0	0	6	6
Subtotals	17	5	116	138

- 58) The revised assessment for Newton-in-Bowland Compound confirms that 84% (116) of the tree features surveyed fall into the category of *retained with protection measures*.
- 59) The RAG status of seven tree features has changed from *removal/ partial removal* to *retain with protection measures*.
- 60) Forty-six tree features have been changed from *at risk of removal aiming to retain* to *retain with protection measures*.

Illustration 2: Temporary Gamble Hole Farm Pasture BHS Crossing and Extent of Biological Heritage Site

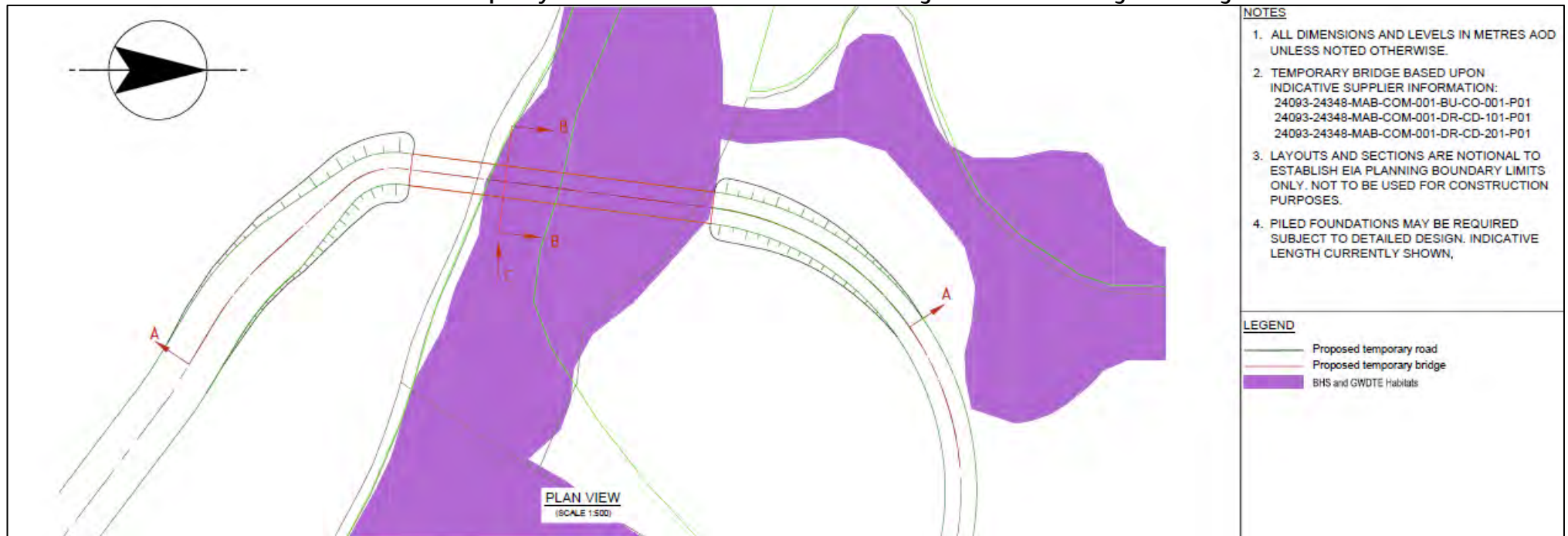


Illustration 3: Long Sections of Temporary Bridge Structure⁷

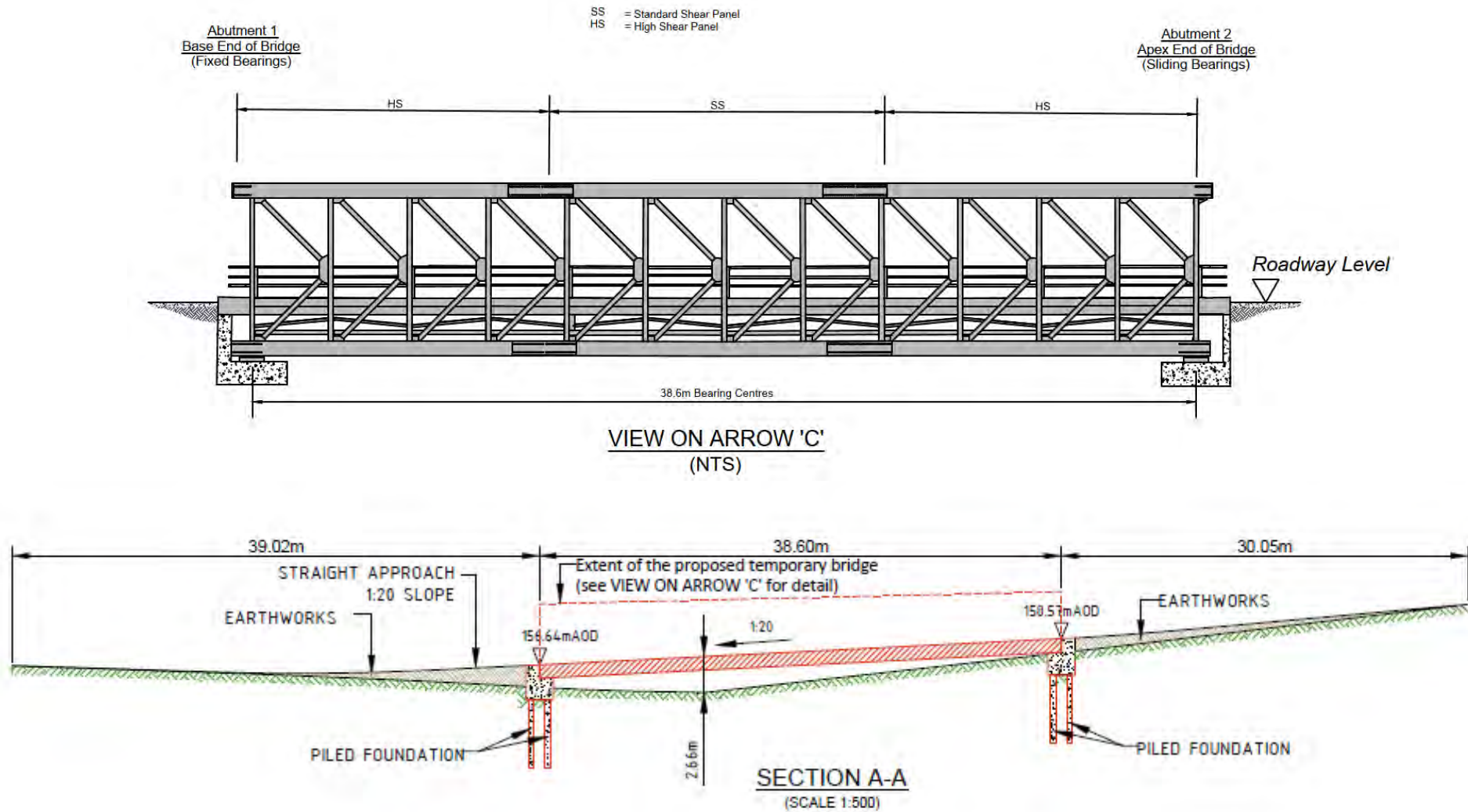


Table 6: Screening of the Proposed Bowland Section design change/updates

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
Landscape and Visual Landscape Effects	The nature and scope of the proposed off-site highways works would result in no new or additional landscape effects when compared to those described in the June 2021 Environmental Statement. Screened out Further information to support this statement is presented in Appendix B1(i).	No additional or other previously identified landscape receptors from the June 2021 LVIA would be impacted. This is because the landscape effects would be negligible and non-material in the context of the changes previously described in Volume 2 of the June 2021 Environmental Statement, as discussed in Appendix B1(i) to this SEI Report. Screened out	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional landscape and visual effects when compared to those described in the June 2021 Environmental Statement. Screened out	The amendment to the planning application boundary providing greater flexibility to the tunnel alignment below ground level would not give rise to any new or additional likely significant effects above those reported in Volume 2 of the Environmental Statement. Screened out	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional landscape effects when compared to the effects described in the June 2021 Environmental Statement. Screened out	The reduced scope of the proposed off-site highways works (removal of RW01-07) in the Chatburn, Grindleton and West Bradford areas would result in fewer landscape effects when compared to those described in the June 2021 Environmental Statement. The landscape effects described in the June 2021 Environmental Statement therefore represent a reasonable worst case outcome which would be unlikely to occur in practice. Screened out
Landscape and Visual Visual Effects	The nature and scope of the proposed off-site highways works would result in no new or additional landscape effects	No additional or other previously identified visual receptors from the June 2021 LVIA would be impacted. This is because the visual effects would	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional	The amendment to the planning application boundary delineating the tunnel construction below ground level would not give rise to	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional visual effects when	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would result in fewer visual effects when

⁷ Refer to Illustration 2 for location of section A-A and view on arrow C.

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
	when compared to those described in the June 2021 Environmental Statement. Screened out Further information to support this statement is presented in Appendix B1(i).	be negligible and non-material in the context of the changes previously described in Volume 2 of the June 2021 Environmental Statement, as discussed in Appendix B1(i) to this SEI Report. Screened out	landscape and visual effects when compared to those described in the June 2021 Environmental Statement. Screened out	any new or additional likely significant effects above those reported in Volume 2 of the Environmental Statement. Screened out	compared to the effects described in the June 2021 Environmental Statement. Screened out	compared to those described in the June 2021 Environmental Statement. The visual effects described in the June 2021 Environmental Statement therefore represent a reasonable worst case outcome which be unlikely to occur in practice. There is therefore no requirement to assess the effects of the Clitheroe off-site highways works. Screened out
Arboriculture	The proposed off-site highways works serving the Lower Houses Compound would result in additional loss of tree features. This reported in Appendix B2. Screened in	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing would not give rise to any new or additional likely significant arboricultural effects. Screened out	The proposed realignment of the access track at this location would not give rise to any new or additional effects on tree features when compared to that reported in the June 2021 Environmental Statement. Further details are provided in Section 3.8. Scoped out	Baseline conditions are described in Volume 4, Appendix 6.6 of the June 2021 Environmental Statement. The amendment to the planning application boundary would not give rise to any new or additional likely significant effects	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional visual effects when compared to the effects described in the June 2021 Environmental Statement.	The reduced scope of the proposed off-site highways works (RW1-7) in the Chatburn, Grindleton and West Bradford areas would result in fewer arboricultural losses when compared to those described in the June 2021 Environmental Statement. The arboricultural effects described in the June 2021 Environmental Statement

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
				above those reported in Volume 2 of the Environmental Statement. Screened out	Screened out	therefore represent a reasonable worst case outcome which would be unlikely to occur in practice. There is therefore no requirement to assess the effects of the Clitheroe off-site highways works. However, the beneficial contribution of this change to cumulative tree losses associated with the Proposed Bowland Section is taken into account in Appendix B2 Screened out
Water Environment	The proposed off-site highways works would not give rise to any new or additional significant effects on the surface water environment. Four GWDTE sites (Pike Gill Wood North, Creams Barn Southwest, Leyland	The nature and scope of the proposed temporary crossing in the Newton-in-Bowland Compound would result in no new or additional effects on surface water features when compared to those described in the June 2021 Environmental Statement.	The Hodder Crossing would be realigned across a sensitive GWDTE that has been previously identified and assessed in the June 2021 Environmental Statement. While the June 2021 Environmental Statement confirms this to be a likely significant effect, no new or additional	The amendment to the planning application boundary would not give rise to any new or additional likely significant effects above those reported in Volume 2 of the June 2021 Environmental Statement. Screened out	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional effects on the water environment when compared to the effects described in the June	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would result in fewer effects on the water environment when compared to those described in the June 2021 Environmental Statement. The effects on the water environment described

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
	Farm East, and Eskew Beck West) are predicted to experience significant potential effects from off-site highways works. Only one of these sites, however, Eskew Beck West, is associated with the newly-proposed Lower Houses works. Screened in for Groundwater effects – refer to Appendix B3.	Screened out For the groundwater environment, specifically the BHS GWDTE, there remains a risk of likely significant effects due to the location and scale of the footings for the proposed bridge. (It should be noted however, that the crossing is proposed to minimise impacts on the BHS.) No new or additional likely significant effects but screened in for further consideration. Refer to Appendix B5.	likely significant effects would arise as a consequence of revising the horizontal alignment of the Hodder Crossing access track. Screened out		2021 Environmental Statement. Screened out	in the June 2021 Environmental Statement therefore represent a reasonable worst case outcome which would not occur in practice. There is therefore no requirement to further assess the effects of the Clitheroe off-site highways works. Screened out
Flood Risk	The inclusion of eight additional road widening locations along Eskew Lane in addition to the creation of Spen Brow holding area would result in no new or additional flood risk	The nature and scope of the proposed temporary crossing in the Newton-in-Bowland Compound would result in no new or additional effects on flood risk when compared to those described in the June	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional effects on flood risk when compared to those	The amendment to the planning application boundary would not give rise to any new or additional likely significant effects above those reported in Volume 2 of the	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional flood risk effects when compared to the effects described in the June	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would avoid the flood risk effects described in the June 2021 Environmental Statement. There is therefore no requirement to further assess the effects of the

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
	effects when compared to the effects described in the June 2021 Environmental Statement. Screened out	2021 Environmental Statement. Screened out	described in the June 2021 Environmental Statement. Screened out	Environmental Statement. Screened out	2021 Environmental Statement. Screened out The June 2021 Environmental Statement included a provisional flood risk assessment for the proposed Ribble Crossing. Appendix B4 of this report presents the final flood risk assessment.	Clitheroe off-site highways works. Screened out
Ecology	The nature and scope of the proposed off-site highways works would result in no new or additional likely significant ecology effects when compared to those described in the June 2021 Environmental Statement. Screened out Further information to support this	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing is an improvement, bridging the crossing of GWDTE habitats associated with Gamble Hole Farm Pasture BHS when compared to the June 2021 Environmental Statement.	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound is an improvement, routing the road away from very high distinctiveness habitats when compared to the June 2021 Environmental Statement. Screened out	The amendment to the planning application boundary would not give rise to any new or additional likely significant ecology effects above those reported in Volume 2 of the Environmental Statement. Screened out Further information to support this statement	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional likely significant ecological effects when compared to those described in the June 2021 Environmental Statement. Screened out	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would result in fewer ecology effects when compared to those described in the June 2021 Environmental Statement which, therefore, represent a reasonable worst-case outcome which would be unlikely to occur in practice. Screened out

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
	statement is presented in Appendix B7.	Screened out Further information to support this statement is presented in Appendix B5.	Further information to support this statement is presented in Appendix B5.	is presented in Appendix B5.	Further information to support this statement is presented in Appendix B5 and B6.	Further information to support this statement is presented in Appendix B7.
Cultural Heritage	The inclusion of eight additional road widening locations along Eskew Lane in addition to the creation of Spen Brow holding area would result in no new or additional cultural heritage effects when compared to the effects described in the June 2021 Environmental Statement. Screened out	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing would not give rise to any new or additional likely significant cultural heritage effects. Screened out	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional effects on cultural heritage when compared to those described in the June 2021 Environmental Statement. Screened out	The amendment to the planning application boundary would not give rise to any new or additional likely significant effects above those reported in Volume 2 of the Environmental Statement. Screened out	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional cultural heritage effects when compared to those described in the June 2021 Environmental Statement. Screened out	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would avoid the cultural heritage effects described in the June 2021 Environmental Statement. There is therefore no requirement to further assess the effects of the Clitheroe off-site highways works. Screened out
Soils, Geology and Land Quality	The inclusion of eight additional road widening locations along Eskew Lane in addition to the creation of Spen Brow	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing would not give rise to any	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional	The amendment to the planning application boundary would not give rise to any new or additional soils, geology and land	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional soils, geology or land quality	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would avoid the soils, geology and land quality

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribbles Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribbles Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribbles Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribbles Crossing) and Initial Access Strategy During Months 1-9 Ribbles Valley Borough Council	Clitheroe Off-site Highways Works Ribbles Valley Borough Council
	holding area would result in no new or additional soils, geology or land quality effects when compared to the effects described in the June 2021 Environmental Statement. Screened out	new or additional likely significant effects on soils or geology. Screened out	effects on soils, geology and land quality when compared to those described in the June 2021 Environmental Statement. Screened out	quality likely significant effects above those reported in Volume 2 of the Environmental Statement. Screened out	effects when compared to those described in the June 2021 Environmental Statement. Screened out	effects described in the June 2021 Environmental Statement. There is therefore no requirement to further assess the effects of the Clitheroe off-site highways works. Screened out
Materials and Waste	The inclusion of eight additional road widening locations along Eskew Lane in addition to the creation of Spen Brow holding area would result in no new or additional materials and waste effects when compared to the effects described in the June 2021 Environmental Statement. Screened out	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing would not give rise to any new or additional likely significant effects on materials and waste. Screened out	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional effects on traffic or transport planning when compared to those described in the June 2021 Environmental Statement. Screened out	The amendment to the planning application boundary would not give rise to any new or additional likely significant effects above those reported in Volume 2 of the Environmental Statement. Screened out	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional materials or waste effects when compared to those described in the June 2021 Environmental Statement. Screened out	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would avoid the materials and waste effects described in the June 2021 Environmental Statement at this location. There is therefore no requirement to further assess the effects of the Clitheroe off-site highways works. Screened out

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
Public Access and Recreation	The inclusion of eight additional road widening locations along Eskew Lane in addition to the creation of Spen Brow holding area would result in no new likely significant effects on public access and recreation when compared to the effects described in the June 2021 Environmental Statement. Screened out	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing would not give rise to any new or additional likely significant effects on public access or recreation. Screened out	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional effects on public access or recreation when compared to those described in the June 2021 Environmental Statement. Screened out	The amendment to the planning application boundary would not give rise to any new or additional likely significant effects above those reported in Volume 2 of the Environmental Statement. Screened out	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional effects on public access or recreation when compared to those described in the June 2021 Environmental Statement. Screened out	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would avoid the effects on public rights of way described in the June 2021 Environmental Statement at this location. PRoW 3-11-FP 5 is no longer affected by RW02, and PRoW 3-21-FP 57 is no longer affected by RW04. There is therefore no requirement to further assess the effects of the Clitheroe off-site highways works. Screened out
Communities and Health	The inclusion of eight additional road widening locations along Eskew Lane in addition to the creation of Spen Brow holding area would result in no new or additional communities and	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing would not give rise to any new or additional likely significant effects on communities and health.	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional effects on communities and health when compared to those described in the	The amendment to the planning application boundary would not give rise to any new or additional likely significant effects above those reported in Volume 2 of the	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional effects on communities and health when compared to those described in the June	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would avoid the communities effects described in the June 2021 Environmental Statement at this location. There is therefore no requirement to

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
	health when compared to the effects described in the June 2021 Environmental Statement. Screened out	Screened out	June 2021 Environmental Statement. Screened out	Environmental Statement. Screened out	2021 Environmental Statement. Screened out	further assess the effects of the Clitheroe off-site highways works. Screened out
Major Accidents and Disasters	The inclusion of eight additional road widening locations along Eskew Lane in addition to the creation of Spen Brow holding area would result in no new or additional effects when compared to the effects described in the June 2021 Environmental Statement. Screened out	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing would not give rise to any new or additional likely significant effects on major accident and disaster risks. Screened out	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional effects on major accidents and disasters when compared to those described in the June 2021 Environmental Statement. Screened out	The amendment to the planning application boundary would not give rise to any new or additional effects on major accidents and disasters when compared to those described in the June 2021 Environmental Statement. Screened out	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional effects on major accidents when compared to those described in the June 2021 Environmental Statement. Screened out	The removal of road widening locations RW01-RW07 and the parking restriction (PR01) would not give rise to any new or additional likely significant effects in relation to major accidents and disasters. Screened out
Transport Planning	The new off-site highways proposals described in this SEI Report would result in no new or additional	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in	The amendment to the planning application boundary would not give rise to any new or additional transport	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would alter the

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
	<p>significant traffic or transport planning effects when compared to the effects described in the June 2021 Environmental Statement.</p> <p>However, it is noted that the proposed changes to the construction access strategy, specifically in relation to the revised arrangements from one-way to two-way flows, requires further consideration and explanation.</p> <p>Screened in</p> <p>Further information is presented in a Transport Technical Note at Appendix B8(ii) and in a new February 2022 Construction Traffic</p>	<p>would not give rise to any new or additional likely significant effects on transport planning considerations.</p> <p>Screened out</p>	<p>no new or additional transport planning effects when compared to those described in the June 2021 Environmental Statement.</p> <p>Screened out</p>	<p>planning effects when compared to those described in the June 2021 Environmental Statement.</p> <p>Screened out</p>	<p>transport planning effects when compared to the effects described in the June 2021 Environmental Statement.</p> <p>However, it is noted that the proposed changes to the construction access strategy, specifically in relation to the first nine months of the construction programme, do require further explanation and consideration.</p> <p>Screened in</p> <p>Further information to explain the scope of the traffic impacts associated with the revised construction access strategy are presented in a Transport Technical Note at Appendix B8(i) and in a new February</p>	<p>transport planning and traffic effects described in the June 2021 Environmental Statement. This alteration to traffic flows would, however, be insignificant in the context of the EIA Regulations.</p> <p>Screened out</p>

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
	Management Plan which supersedes the June 2021 version.				2022 Construction Traffic Management Plan which supersedes the June 2021 version.	
Noise and Vibration	The inclusion of eight additional road widening locations along Eskew Lane in addition to the creation of Spen Brow holding area would result in no new or additional noise and vibration effects when compared to the effects described in the June 2021 Environmental Statement. However, the redistribution of traffic on the local road network, when compared with the assumptions used in the June 2021 noise model, does require	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing would not give rise to any new or additional likely significant noise and vibration effects. Screened out	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional effects on noise and vibration when compared to those described in the June 2021 Environmental Statement. Screened out	There are no reasonably foreseeable changes to the noise and vibration effects described in Volume 2 of the June 2021 Environmental Statement. The depth at which the tunnel is constructed would remain the same as described in the June 2021 Environmental Statement, and the horizontal alignment of the tunnel would be no closer than that previously described. Screened out	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional noise and vibration effects when compared to the effects described in the June 2021 Environmental Statement. However, the redistribution of traffic on the local road network, when compared with the assumptions used in the June 2021 noise model, does require further consideration and explanation. Screened in for redistribution of traffic on the local road network. Further information is	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would avoid the noise and vibration effects described in the June 2021 Environmental Statement at these locations. These effects were associated with construction of the off-site highways works. There is therefore no requirement to further assess the effects of the Clitheroe off-site highways works. Screened out

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
	further consideration and explanation. Screened in for redistribution of traffic on the local road network. Further information is presented in Section 3.9 below.				presented in Section 3.9 below.	
Air Quality	The inclusion of eight additional road widening locations along Eskew Lane and the creation of Spen Brow holding area would result in no new or additional air quality when compared to the effects described in the June 2021 Environmental Statement. Screened out , with further justification provided in Section 3.9 below.	The nature and scope of the anticipated changes arising from construction and operation of the newly-proposed crossing would not give rise to any new or additional likely significant effects on air quality. Screened out	The nature and scope of the proposed changes to the access track serving the Newton-in-Bowland Compound would result in no new or additional effects on traffic or transport planning when compared to those described in the June 2021 Environmental Statement. Screened out	The amendment to the planning application boundary delineating the tunnel construction below ground level would not give rise to any new or additional effects on air quality when compared to those described in the June 2021 Environmental Statement. Screened out	The nature and scope of the traffic management changes described in this SEI Report would result in no new or additional air quality effects when compared to the those described in the June 2021 Environmental Statement. However, the redistribution of traffic on the local road network, when compared with the assumptions used in the June 2021 air quality model, does require further consideration and explanation.	The reduced scope of the proposed off-site highways works (RW01-07) in the Chatburn, Grindleton and West Bradford areas would avoid the carbon emissions associated with construction of these off-site works. There is therefore no requirement to further assess the carbon and climate effects of the Clitheroe off-site highways works. Screened out

EIA Topic	Lower Houses Off-site Highways Works and Revised Transport Route Lancaster City Council	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing Ribble Valley Borough Council	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment Ribble Valley Borough Council	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound Ribble Valley Borough Council	Confirmation of Clitheroe Transport Route (Ribble Crossing) and Initial Access Strategy During Months 1-9 Ribble Valley Borough Council	Clitheroe Off-site Highways Works Ribble Valley Borough Council
					<p>Carbon emissions and climate effects associated with the revised construction traffic access strategy would have no material bearing on the calculated carbon emissions presented, and the conclusions drawn, in the June 2021 Environmental Statement.</p> <p>Screened in for redistribution of traffic on the local road network. Further information is presented in Section 3.9.</p>	

3.9 Further Explanation of Points Raised in Table 6

61) Table 6 directed the reader to this section of the report in cases where further information is available to support or expand on some of the statements made concerning likely significant effects. This section therefore provides details, by exception, relating to selected combinations of EIA topic and design change or new design proposals as follows:

- Lower Houses Off-site Highways Works and Revised Transport Route (Lancaster City Council) – due to the proposed changes in traffic flows associated with the revised access strategy to the Lower Houses Compound, further details on the air quality and noise aspects of this amendment
- Proposed Temporary Gamble Hole Farm Pasture BHS Crossing (Ribble Valley Borough Council) – further comments on the potential groundwater risk posed by the proposed crossing to the GWDTE
- Revised access strategy through Clitheroe (months 1-9) (Ribble Valley Borough Council) - due to the proposed changes in traffic flows associated with the revised access strategy to the Newton-in-Bowland Compound, further details on the air quality and noise aspects of this amendment.

3.9.1 Lower Houses Off-site Highways Works and Revised Transport Route (Lancaster City Council) Noise and Vibration

62) The assessment of potential noise and vibration effects arising from construction of the proposed additional off-site highways works serving the Lower Houses Compound are presented in Table 7.

Table 7: Assessment of potential noise and vibration impacts due to highway improvement works

Location	Assessment outcomes	
	June 2021 Environmental Statement Volume 5	Updated design
Eskew Lane		
RW08	Cedar House School ~40 m from works site. Construction noise levels were predicted to be as high as 69 dB L _{Aeq,T} at the façade of the school during works at the road widening. Potential major significant effect reported.	Cedar House School ~40 m from passing place. Construction noise levels are predicted to be as high as 67 dB L _{Aeq,T} at the façade of the school during works at the passing place. Potential for major significant effect .
RW08	No other sensitive receptors within 100 m and no significant effect identified	No other sensitive receptors within 100 m and no significant effect identified
RW32 & RW33	No sensitive receptors within 100 m and no significant effect identified	No sensitive receptors within 100 m and no significant effect identified
Long Lane		
RW09	Farmhouse and Dairy Farm (M E & B Mason & Sons) ~70 m from works site. Construction noise levels were predicted to be as high as 64 dB L _{Aeq,T} at the façade of the farmhouse during works at the road widening. No potential significant effect reported	Farmhouse and Dairy Farm (M E & B Mason & Sons) ~70 m from works site. Construction noise levels are predicted to be as high as 64 dB L _{Aeq,T} at the façade of the farmhouse during works at the passing place. Potential significant effect not anticipated.
RW10	No sensitive receptors within 100 m and no significant effect identified	No sensitive receptors within 100 m and no significant effects identified. Hunter's Barn ~110 m from works site (maximum noise levels of 61 dB L _{Aeq,T} predicted at façade of property) Potential significant effect not anticipated

Location	Assessment outcomes	
	June 2021 Environmental Statement Volume 5	Updated design
RW36	No sensitive receptors within 100 m and no significant effect identified	No sensitive receptors within 100 m and no significant effect identified
RW37 & RW38	No sensitive receptors within 100 m and no significant effect identified	No sensitive receptors within 100 m and no significant effect identified
Fairheath Road		
RW11	No sensitive receptors within 100 m and no significant effect identified	No sensitive receptors within 100 m and no significant effect identified
Spenn Brow Holding Area	No sensitive receptors within 100 m and no significant effect identified	No sensitive receptors within 100 m and no significant effect identified

- 63) Based on the assessment presented in Table 7, construction noise and vibration impacts resulting from the proposed alterations to the highway improvement works along Eskew Lane, Long Lane and Fairheath Road are not predicted to result in any new significant effects. However, there is still the potential for significant noise effects at Cedar House School (due to works at proposed RW08).

Air Quality

- 64) The additional passing places are on road links where the increase in traffic flows due to the HARP project are below the criteria for requiring further assessment. Changes in air pollutant concentrations and deposition at human or ecological locations were considered as imperceptible and not significant in the June 2021 Environmental Statement.
- 65) The relatively small change in road width/alignment as a result of the proposed passing places (i.e. less than 5 m) would not trigger the criteria set out in the DMRB LA 105 air quality guidance⁸ for the requirement to consider air quality impacts further. There are no human or ecological locations in close proximity to the proposed passing places and any impacts at other locations within 200m of the passing places would remain as imperceptible, and not significant.

3.9.2 Proposed Temporary Gamble Hole Farm Pasture BHS Crossing (Ribbles Valley Borough Council)

Water Environment – Groundwater

- 66) Chapter 7 Table 7.37 of the June 2021 Environmental Statement confirmed that likely significant effects were anticipated as a consequence of access track construction over the BHS habitat. Mitigation Item WE37 recommended the construction of a temporary bridge over the habitat to mitigate these adverse likely significant effects. The proposed crossing would substantially reduce the magnitude of impact upon the GWDTE, however, a residual significant effect in the short-term (over the duration of the construction programme) is assumed as a precautionary approach.

⁸ Design Manual for Roads and Bridges National Highways *et al.* (2019) LA105 Air Quality <https://www.standardsforhighways.co.uk/dmr/b/search/10191621-07df-44a3-892e-c1d5c7a28d90> [link accessed on 20 February 2022]

3.9.3 Transport Route through Clitheroe and Initial Access Strategy (Months 1-9) (Ribble Valley Borough Council)

Noise and Vibration

- 67) Volume 2 Chapter 17 of the June 2021 Environmental Statement presented an assessment of construction noise due to vehicles accessing the Newton-in-Bowland Compound via Clitheroe during the peak period of construction.
- 68) In addition, Chapter 17 of the June 2021 Environmental Statement Volume 6 included an assessment of construction noise due to vehicles accessing the Ribble Crossing via Clitheroe during the peak period of construction, as described below. The construction vehicle access for the Proposed Ribble Crossing would be via West Bradford Road, both west and south of the Proposed Ribble Crossing route, as well as A671 Slaidburn Road to the west and B6478 Pimlico Link Road to the south.
- 69) The construction traffic routes described above are explained in more detail in Appendix B8.
- 70) The assessment presented in Volume 2 and Volume 6 of the June 2021 Environmental Statement did not identify any road links where noise levels were predicted to exceed a recognised threshold known as the SOAEL⁹, and result in a moderate (or greater) magnitude of change. No likely significant traffic noise effects were therefore identified.

Air Quality

- 71) The access strategy for the Newton-in-Bowland Compound was updated to include the use of the proposed Ribble Crossing. However, for a period of approximately nine months at the beginning of the construction phase, construction traffic would travel on the local road network for construction of the Ribble Crossing and also for construction of the crossing over the River Hodder close to the Newton-in-Bowland Compound. Once the Ribble Crossing has been built, the construction traffic would then revert to the Ribble Crossing access strategy for travelling to and from the Newton-in-Bowland Compound (as assessed in Chapter 18 of Volume 6 of the June 2021 Environmental Statement
- 72) The anticipated combined vehicle flows on the road network during this initial nine-month period commencing in 2023 were analysed to determine if these would be greater than those considered in the air quality assessment provided in Volume 2 Chapter 18 of the June 2021 Environmental Statement. It is concluded that vehicle flows on each specific road link in the study area, as an Annual Average Daily Traffic (AADT) flow, would be no greater than those previously assessed. On this basis, there would be no change to the likely significant effects compared to the original assessment, where it was concluded that emissions to air from the diesel generators and additional road traffic were unlikely to result in any significant air quality effects at human locations or at the designated sites identified in the assessment.
- 73) Although further assessment was required for nitrogen deposition at North Pennine Dales Meadows Special Area of Conservation (SAC) and nitrogen and acid deposition at Bowland Fells Special Protection Area (SPA) and Bowland Fells Site of Special Scientific Interest (SSSI), this was in relation to diesel generator emissions and not related to road traffic emissions.
- 74) The use of the proposed Ribble Crossing access strategy also removes the need for road widening locations (RW01-RW07) and the parking restriction (PR01). This reduces the amount of construction works required which is beneficial from an air quality perspective as it reduces the risk of construction dust impacts. However, no significant effects were identified in the original assessment based on the implementation of appropriate good practice dust mitigation measures.
- 75) The use of the proposed Ribble Crossing access strategy also removes the need for road widening locations RW01-RW07 and the parking restriction at Chatburn (PR01). This reduces the amount of construction works required which is beneficial from an air quality perspective as it reduces both emissions to atmosphere from construction plant and machinery, and the risk of construction dust

⁹ Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life may occur. It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times.

impacts. The conclusion drawn in the June 2021 Environmental Statement therefore still stands – no likely significant air quality effects, underpinned by the implementation of appropriate good practice measures to mitigate fugitive dust emissions.

4. Additional Environmental Data

4.1 Introduction

- 76) Section 4 signposts the reader to additional environmental data which have been compiled following submission of the June 2021 Environmental Statement. In some cases this information updates that provided in the June 2021 Environmental Statement (for example, in relation to the arboricultural impact of off-site highways works described in Volume 5 of the June 2021 submission), while in other instances it comprises entirely new information, such as the flood risk assessment of the Ribble Crossing.
- 77) In addition to additional environmental data, Section 4 provides further information relating to the Major Development Test for delivering the Proposed Bowland Section in the AONB. A Major Development Test technical note supported the June 2021 Planning Applications. Further to submission of the June 2021 Planning Application, AONB Board officers and Natural England have requested more details of how landscape and visual factors were taken into consideration when evaluating alternative locations for the two main compounds. This additional information, supported by a narrative on engineering constraints governing the location of the construction compounds, is provided in Section 4.3.

4.2 Additional Environmental Data

- 78) Further technical appendices, additional to those presented in the June 2021 Environmental Statement, have been produced to report additional environmental data.

4.2.1 Landscape and Visual Addendum (Appendix B1(i))

- 79) Appendix B1(i), provides supplementary information to the June 2021 Landscape and Visual Impact Assessment (Volume 2, Chapter 6). The report summarises that there would be no change to the likely significant effects experienced by landscape and visual receptors as a result of the changes at the Lower Houses and Newton-in-Bowland Compounds. The additional off-site highways works at Lower Houses would increase the number of visual receptors in the surrounding vicinity that would be likely to experience significant effects as a result of visual impacts during construction.

4.2.2 Planting schedule – Landscape (Appendix B1(ii))

- 80) Appendix B1(ii) presents the planting schedule proposed to assist in the reinstatement of the affected features during and following completion of the main construction works contract.

4.2.3 Off-site Highways Arboricultural Technical Note (Appendix B2)

- 81) Appendix B2 supplements the Volume 5 Off-Site Highways works presented in the June 2021 Environmental Statement (LCC_RVBC-BO-ES-V5-P1-001, RVBC-BO-ES-V5-P1-001 and LCC_RVBC-BO-FIG-V5-P1-002, RVBC-BO-FIG-V5-P1-002). This appendix provides an update on the methodology followed for the off-site highways works as well as the number of trees at risk of removal/partial removal shown on LCC_RVBC-BO-FIG-V5-P1-003 and RVBC-BO-FIG-V5-P1-003.

4.2.4 GWDTE Addendum (Appendix B3)

- 82) Appendix B3 assesses the potential impacts on groundwater levels and flows sustaining Groundwater Dependent Terrestrial Ecosystems (GWDTEs) that could arise during the construction of the proposed off-site highways works.

4.2.5 Flood Risk Assessment – Proposed Ribble Crossing (Appendix B4)

- 83) Appendix B4 has been prepared to support the planning application for the Proposed Bowland Section. The report provides an update to the Flood Risk Assessment report submitted as part of the June 2021 Environmental Statement to include the hydraulic modelling work undertaken for the River Ribble and its tributaries. The FRA confirms that, based on the proposed design and good practice mitigation

included with the CCoP, the Proposed Ribble Crossing would be safe from flooding within flood return periods agreed with the Environment Agency, and would not increase the risk of flooding elsewhere.

4.2.6 Ecology input – compounds (Appendix B5)

84) Appendix B5 has been prepared to support the revised planning application for the Proposed Bowland Section. The report includes a Phase 1 Habitat plan and NVC plan covering the revised section of the haul road north of the River Hodder crossing. Both plans display the changes to the planning application boundary and access route. Appendix B5 also includes a Botanical Monitoring Method for Gamble Hole Farm Pastures BHS and confirms that United Utilities would purchase the BHS land and therefore have control to manage positively for wildlife. And finally, Appendix B5 also includes the findings of additional aquatic ecology surveys along unnamed watercourses 386 and 391 (associated with the Newton-in-Bowland Compound access road) which were not available for the June 2021 submission. The appendix reviews the implications of:

- Review of confirmed construction traffic access proposals
- Review of the amendment to the Newton-in-Bowland access track
- Review of the amendment to the planning application boundary north of the Newton-in-Bowland Compound
- Review of the proposed bridge spanning the BHS at the Newton-in-Bowland compound
- Additional Aquatic ecology survey data
- Review of updated AIA
- Response to consultee comments.

85) Appendix B5 confirms the amendment to the Newton-in-Bowland access track and the bridge crossing at the Gamble Hole Farm Pastures BHS reduce impacts on ecology compared with the June 2021 submission. Effects are reduced to Not significant in the long term for Gamble Hole Farm Pasture BHS.

86) There is a large improvement through the reduction in tree losses at the two compounds and for scattered broad-leaved trees, reducing to Significant Adverse at the Less than local level pre mitigation (residual effects remaining Not significant). There are improvements for bats as a result (roosts and flyways / commuting) but the significance of effects are unchanged.

87) Appendix B5 also states that addendums to the June 2021 HRA and SSSI assessment have been submitted and confirm no change. Furthermore, it confirms an updated BNG onsite report has been submitted to account for changes in the planning boundaries updated BNG offsetting report to display changes to offsite proposals.

4.2.7 Ecology input – Proposed Ribble Crossing (Appendix B6)

88) Appendix B6 has been prepared to support the Proposed Ribble Crossing element of the planning application for the Proposed Bowland Section. The report includes a repeated otter survey of the River Ribble and the findings of breeding bird surveys along the Ribble Crossing which was not available for the June 2021 submission. The appendix reviews the implications of:

- The confirmation of the construction traffic route option
- The breeding bird survey results
- The additional aquatic ecology surveys.

89) Appendix B6 confirms no changes to significant effects reported in the June 2021 ES Vol 4. It also provides clarification on statements made in the June 2021 submission regarding trees with bat roost

potential. Furthermore, it confirms updated BNG onsite and offsite reports have been submitted to include the river metric.

4.2.8 Ecology input – highways (Appendix B7)

90) Appendix B7 has been prepared to support the planning application for the Proposed Off-Site Highways Works for the Bowland Section. The report includes technical ecology reports and data summary tables used in the June 2021 assessment but not previously submitted. It also includes additional ecology information for the new TR3 highways works areas. The appendix reviews the implications of:

- The removal of works areas RW01 to RW07
- Additional TR3 highways works areas
- The confirmation of the construction traffic route option
- The updated AIA
- The GWDTE assessment of the offsite highways works.

91) Appendix B7 confirms no changes to significant effects reported in the June 2021 Environmental Statement Vol 5 Part II. It also responds to consultation comments regarding potential for effects on barn owl confirming no significant effects. Furthermore, it confirms updated BNG onsite and offsite reports have been submitted to include the off-site highways work.

4.2.9 Transport Addendum – Clitheroe (Appendix B8(i))

92) The technical note in Appendix B8(i) supplements Chapter 16: Transport Planning of the Proposed Bowland Section June 2021 Environmental Statement, and the supporting Transport Assessment (LCC_RVBC-BO-ES-016 and LCC_RVBC-BO-TA-016-001). This technical note examines the number of vehicles required to construct both the Ribble Crossing and Hodder Crossing simultaneously and considers how the vehicle numbers associated with the revised programme compare against those required for the Newton-in-Bowland Compound. It is concluded that the potential traffic impacts and the proposed mitigation measures contained in the Transport Planning Environmental Statement chapter submitted in the June 2021 Environmental Statement continue to represent the reasonable worst case scenario for the road sections.

4.2.10 Transport Addendum- Lower Houses (Appendix B8(ii))

93) Appendix B8(ii) supplements Chapter 16: Transport Planning of the Proposed Bowland Section June 2021 Environmental Statement, and the supporting Transport Assessment (LCC_RVBC-BO-ES-016 and LCC_RVBC-BO-TA-016-001).

4.2.11 Environmental Masterplan (Appendix B9)

94) The Environmental Masterplan (EMP) comprises a series of drawings illustrating the locations where site-specific mitigation measures are proposed. Mitigation notes for these topics highlight the design response to reduce or offset identified potential environmental effects.

95) The EMP covers a limited number of EIA topic areas, namely: Landscape and Arboriculture, Ecology, Cultural Heritage, Water Environment, Public Access and Recreation and Noise and Vibration. The EMP has been updated for the Lower Houses and Newton-in-Bowland Compounds following updates to the arboricultural assessment and design changes at the Newton-in-Bowland Compound.

4.3 AONB Major Development Test – Additional Information

- 96) The Major Development Test for development in nationally protected landscapes, including AONBs, is set out at paragraph 177 of the NPPF¹⁰, which states:

"When considering applications for development... permission should be refused for major development other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of... any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated."

- 97) Further to consultation feedback, the following section provides additional information concerning the feasibility of delivering the two main Proposed Bowland Section compounds, and the Wray Satellite Compound, at alternative locations. The merits of these alternative locations from a landscape and visual impact perspective are also considered.

4.3.1 Lower Houses Compound

- 98) The compound is predominantly located within Landscape Character Area (LCA) 04d Bowland Gritstone Fringes (*A Landscape Strategy for Lancashire*) and LCA D13 Park House (*Forest of Bowland AONB Landscape Character Assessment*). Other nearby LCAs include LCA I3 Hindburndale (*Forest of Bowland AONB Landscape Character Assessment*) and 02b Central Bowland Fells (*A Landscape Strategy for Lancashire*). Within the Landscape Sensitivity Schedule (refer to Appendix 6.3 of the June 2021 Environmental Statement), these LCAs have been assessed as having a high sensitivity to the changes that would likely arise from the Proposed Bowland Section; in large part due to the highly valued distinctive character and natural beauty of the AONB.
- 99) LCAs 04d Bowland Gritstone Fringes and D13 Park House have some common attributes including '[a] strong intervisibility with adjacent landscapes' and areas that would be 'highly susceptible to large-scale development'. Nearby LCAs, including LCAs I3 Hindburndale and 02b Central Bowland Fells, also have a high sensitivity to the type of change proposed. These adjacent LCAs are noted as having few discordant features, areas of cultural and historic value and a strong sense of remoteness.
- 100) Locally, the landscape in which the Lower Houses Compound is located comprises fringe farmland at a relatively low-altitude that is situated in the transitional zone between upland unenclosed moorland of Goodber Common and the wooded Hindburndale Valley. The exposed farmland is of a medium scale, comprising a patchwork of semi-improved pastures, meadows and rushy pastures, often defined by a mix of drystone walls, hedgerows and occasional post and wire fences. Low growing gorse, bramble and small windswept hawthorns add to the texture and exposed character of the rural landscape. Nearby farms in the area are located at the end of dead-end tracks and built of distinctive, dark local gritstone.
- 101) The Proposed Lower Houses Compound would be located on sloping fringe farmland near the existing United Utilities valve house building. Existing woodland associated with the nearby Hindburndale Valley provides some screening to views from the north and east, reducing the influence from disruption and perceived change to the landscape. The proposed compound site extends across five fields, separated by defunct hedgerows and fenced boundaries. A new valve house building would be located close to existing United Utilities infrastructure and would partially use the existing access track to further reduce any permanent change.
- 102) Within the same LCAs, the nearby fields to the north and south have similar characteristics with predominately open aspects on the lower valley slopes of the River Hindburn. Vegetation is similarly sparse with fenced field boundaries interspersed with occasional trees and relict hedgerows. Land to the west, within adjacent LCAs on the elevated land of Goodber Common, is more exposed due to its increased altitude and less tree cover. The character of this location is more remote and tranquil than

¹⁰ ¹⁰ Ministry of Housing, Communities & Local Government 2021 [Online] Available from: <https://www.gov.uk/government/publications/national-planning-policy-framework-2> [Accessed: February 2022]

the surrounding areas and there would therefore be greater landscape and visual disruption should the Lower Houses Compound be located here instead.

- 103) The fields to the east are situated on the lower valley slopes and basin of the wooded Hindburndale Valley within neighbouring LCAs. Here the landscape contains a stronger framework of mature vegetation, providing an area that is more enclosed and concealed from view from the wider valley. A construction compound within these fields would theoretically have the benefit of more screening from nearby woodland cover; however, existing hedgerows and woodland would be at a greater susceptibility to loss or adverse impacts. Furthermore, it was determined during design development that a compound to the east of the existing aqueduct would not be possible due to the need to construct the proposed tunnel to the west of the existing aqueduct.
- 104) A tunnel to the east of the aqueduct was further discounted due to unsuitable topography. In part, this was due to the presence of the River Hindburn, which would have necessitated significant permanent above ground structures to span these watercourses. This would have resulted in a legacy of more permanent above-ground infrastructure when compared with the proposed location for the Lower Houses Compound. In addition, the tunnel would have to be considerably longer to pass around the dog-leg alignment of the existing aqueduct. These factors would require additional compounds within more remote locations of the Forest of Bowland AONB, resulting in the prolonged duration of the construction activity, an increased the need for further materials and energy, and the production of more waste.
- 105) From an engineering design and construction viewpoint, the proposed tunnel alignment (as shown in the June 2021 Planning Application drawing) terminates adjacent to the existing well building at Lower Houses in order to enable connection to the existing aqueduct pipelines that cross the Lunesdale Valley. This connection point location is fixed due to the need to maintain the hydraulic gradient of the tunnel and pressures in the downstream pipelines and continuity of supply, including to the existing offtakes. This results in the need for the tunnel to be constructed at or above circa 180 m AOD. An alternative termination location would significant lengths of open cut construction with a circa 100 m working corridor in order to lay new pipework to the connection point. Deviation from the 180 m contour level would increase depths of excavation.

4.3.2 Wray Satellite Compound

- 106) The proposed satellite compound and its immediate surroundings are located within LCA 11d Lune Valley (A Landscape Strategy for Lancashire) and LCAs J1: Lune and F4: Caton (Forest of Bowland AONB Landscape Character Assessment). These three LCAs were not assessed as part of the June 2021 LVIA; however, based on its methodology (refer to Appendix 6.3 of the June 2021 Environmental Statement), they are now evaluated as having a high sensitivity to the changes that would be likely to arise from the proposed Wray Satellite Compound. This is in large part due to the highly valued distinctive character and natural beauty of the AONB in which the LCAs are located.
- 107) Locally, this is a settled rural landscape within the floodplain of the River Wenning, a tributary of the River Lune. Landform is gently undulating and low-lying, which is occasionally punctuated by shallow drumlins, river terraces and bluffs. Agricultural land comprises a patchwork of medium-large, regularly shaped fields that are often bounded by low maintained hedgerows with hedgerow trees. Stone farm buildings and traditional field barns are present throughout the wider landscape. The nearby village of Hornby exhibits a linear settlement pattern, consisting of traditional stone buildings and more modern materials. Stone bridges and panoramic open views towards the surrounding rolling drumlins and hills contribute strongly to its recognisable sense of place.
- 108) The Wray Satellite Compound is sited within the Forest of Bowland AONB at the southern fringes of the River Wenning floodplain, to the south-east of the Hornby village. The site comprises the south-west section of one large field, which is demarcated by a combination of maintained or overgrown hedgerows, fencing and drystone walls. Directly to the south of this improved pasture lies the B6480, a busy single carriageway providing access to the nearby villages of Hornby and Wray, and the A683. The southern extent of Hornby village is located approximately 180 m to the west.

- 109) The satellite compound location benefits from nearby undulating drumlin features to the south and wooded bluffs to the north. These provide a level of enclosure that is less evident within the flatter River Lune and River Wenning floodplain to the west of Hornby. The broad floodplains allow wide and open views from the A683 and footpaths, with a greater probability of disruption being perceived. The proposed location also benefits from a dense tall hedgerow, aligned along its southern boundary with the B6480, which screens the site for most travellers and limits perceived disruption.
- 110) Further east and within LCA 11d Lune Valley, the River Hindburn and River Weening floodplain is surrounded by undulating drumlin features to the south and wooded bluffs providing similar levels of enclosure as the areas near Hornby. However, a compound at this location would not permit construction vehicles to be 'held' at periods when restrictions apply when travelling through Wray. The management of construction vehicles is therefore dependent on the compound being sited to the west of Wray.
- 111) Within the same LCAs, the fields to the north are located on the steeply rising land of Bear's Head, a small, wooded hill located at the southern banks of the River Wenning that is situated directly to the south of Hornby Castle. Although nearby Bear's Head Wood provides ample screening from views to the north, this location would provide greater intervisibility with nearby footpaths and the surrounding landscape to the south. Furthermore, the siting of the compound at this location would increase the risk of disturbance to the adjacent woodland at Bear's Head Wood and the nearby River Wenning.
- 112) Nearby land to the west is in closer proximity to Hornby. It would therefore be likely to result in a greater degree of disruption being perceived by nearby residents, especially those located at the settlement edge with direct views overlooking the site. Fields to the east and north-east are located further away from the settlement edge, although they are crossed by a network of connected Public Rights of Way (PRoWs), providing access to the open countryside between the villages of Hornby and Wray. The siting of the compound within this part of the floodplain is likely to create greater disruption to the users of these routes, including possible temporary closures or diversions. Land to the south of B6480 has similar characteristics to the proposed site for the satellite compound, although the field pattern is more intricate. Activity in these fields is likely to result in the removal of additional field boundary vegetation (e.g. hedgerows and hedgerow trees) and the temporary enlargement of the existing field pattern.
- 113) In terms of visibility, the rising landform and woodland to the north provides some effective screening, although the site is still exposed to the surrounding landscape to the east and the settlement edge of Hornby to the west. Surrounding areas to the east and south would have similar visibility whereas land to the north and west would be more exposed or result in greater disturbance to nearby residents.
- 114) From an engineering design and construction viewpoint, the proposed compound is sited at a strategically critical location to allow the management of construction vehicles that are travelling to the Proposed Lower Houses Compound. The vehicular access routes to Lower Houses diverge at Wray with most vehicles travelling via the B6480 and larger vehicles via Main Street in Wray. It is therefore necessary to have a compound in close proximity to the west of Wray to 'hold' these vehicles to ensure that safe onward travel is possible in conjunction with coordinated traffic management measures and timing restrictions. These measures are essential to facilitate the safe movement of construction vehicles along the restricted rural roads in the wider area. A satellite compound further removed from Wray such as on the A683 is not deemed viable due to greater distance from Lower Houses Compound, highways safety, and the constraints associated with marshalling exceptional loads on a busier highway.

4.3.3 Newton-in-Bowland Compound

- 115) The compound and its immediate environs are located within LCA 05a Upper Hodder Valley (A Landscape Strategy for Lancashire) and G3: Upper Hodder (Forest of Bowland AONB Landscape Character Assessment). Within the Landscape Sensitivity Schedule (refer to Appendix 6.3 of the June 2021 Environmental Statement), these LCAs were assessed as having a high sensitivity to the changes that would be likely to arise from the Proposed Bowland Section.
- 116) These LCAs have common characteristics including *'some intervisibility with surrounding landscapes, although woodland and hedgerows limit views in places'*. They have also been considered to have a

'moderate visual susceptibility to large-scale development.' Adjacent LCAs in the surrounding environment also have a high sensitivity to the type of change proposed, although these are located in more elevated locations and generally more susceptible to large-scale development.

- 117) Locally, the landscape comprises settled farmland within the River Hodder valley enclosed by the elevated land at Browsholme Moor, Easington Fells and the Bowland Fells. It is a predominantly rural landscape with regular field pattern with patches of woodland with sinuous edges, which provides an intermittent sense of enclosure. Fields are often delineated by drystone walls, post and wire fences and remnant hedgerows with hedgerow trees. Residential properties and farms set widely within the rural landscape and limestone built villages provide a notable sense of place. A network of PRowS provides good access along the river corridor and throughout the wider area.
- 118) The Proposed Newton-in-Bowland Compound is located alongside the wooded valley corridor of the River Hodder near the existing United Utilities valve house buildings and track, to the west of the Newton-in-Bowland village. The compound site extends across approximately ten pastoral fields, bounded by hedgerows, drystone walls and fence boundaries. Most hedgerow features would be retained and protected, although some small sections would be removed and reinstated on completion of the construction and connections works. A new valve house building would be located close to existing United Utilities infrastructure and would partially use the existing access track to further reduce any permanent change.
- 119) Within the same LCAs, fields directly to the east form part of a more intricate, small-scale field pattern, which represent a good example of a medieval field pattern. As such, they are of historic landscape significance with their presence recorded in the Lancashire Historic Environment Record (HER) as Town Field, Newton in Bowland (MLA36079). These fields to the east also have a slightly more open aspect being at a slightly higher elevation. There is consequently greater intervisibility with the surrounding landscape, including the nearby village of Newton-in-Bowland, and therefore greater probability of disruption being perceived. To the south of the River Hodder, the landscape becomes more open with fewer hedgerow boundaries, less tree cover and a gently rising elevation towards the south. The landscape here has a greater level of openness and the lack of screening features with less ability to reduce the influence from any development disruption.
- 120) In terms of visibility, the Proposed Newton-in-Bowland Compound is slightly exposed to views from the surrounding landscape, particularly those from the south and the distant fells to the north and south-west. In comparison, the nearby fields to the north, west and south-west of the Proposed Newton-in-Bowland Compound are more enclosed and therefore more concealed from view. Here there are more screening benefits from existing mature vegetation amongst the valley bottom of the River Hodder, resulting from an established framework of woodland belts, tree copses and remnant hedgerows and parkland trees. They are also located at a slightly lower elevation than the other nearby fields. However, despite these notable landscape attributes, the proposed tunnel needs to be constructed at or above circa 175 m AOD. This prevents its construction within the nearby fields to the south-west, west and north, which would require extensive open cut construction with a circa 100 m wide working corridor and permanent above ground structures to span any intervening valleys or watercourses.
- 121) From an engineering design and construction viewpoint, the termination position of the proposed tunnel enables connection to the existing aqueduct pipelines, which cross the River Hodder Valley. This connection point location is fixed due to the need to maintain pressures in the pipelines and continuity of supply including to the existing offtake. Any alternative termination locations would also require significant lengths of open cut construction with a circa 100 m wide working corridor in order to lay new pipework to the connection point. Deviation from the 175 m contour level would also result in increased depths of excavation.
- 122) It is necessary to cross the Gamble Hole Pasture BHS to provide a one-way access road to the tunnel portal. An alternative two way road would have required a significant increase in the area of the portal to facilitate waiting and turning vehicles. A more extensive cutting into the land on the eastern approach to the tunnel would also have been required to provide the necessary width to construct the road. This additional excavation area could have resulted in additional impacts on landscape and ground water

resources. The proposed one way road system has the additional benefit of providing the safest option for managing vehicles as it significantly reduces the need for vehicles to reverse on site.

5. Likely Significant Effects and Cumulative Assessment

5.1 Likely Significant Effects

- 123) Table 8 summarises the additional likely significant environmental effects – both positive and negative – which arise from the proposed access track realignment and alteration to the planning application boundary at the Newton-in-Bowland Compound, proposed temporary Gamble Hole Farm Pasture BHS Crossing, the proposed alteration to the traffic access strategy in the first nine months of the programme and the revised Lower Houses transport route. It is notable that in the majority of cases the changes and additional environmental information described in this report do not alter the key conclusions drawn in the June 2021 Environmental Statement and its associated documents.

Table 8: Summary of Likely Significant Effects

EIA topic	Lower Houses Off-site Highways Works and Revised Transport Route	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound	Clitheroe Revised Transport Route	Clitheroe off-site highways works	Additional Environmental Data
Landscape and Visual – Landscape	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects
Landscape and Visual – Visual	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects
Arboriculture	No new or additional likely significant effects, however cumulative tree losses continue to represent a significant effect in the AONB	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects, however cumulative tree losses continue to represent a significant effect in the AONB	No new or additional likely significant effects	No new or additional likely adverse significant effects, noting that there are fewer tree features affected in the main construction compounds due to embedded mitigation.
Water Environment – Surface Water	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects

EIA topic	Lower Houses Off-site Highways Works and Revised Transport Route	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound	Clitheroe Revised Transport Route	Clitheroe off-site highways works	Additional Environmental Data
					significant effects		
Water Environment – Groundwater	When compared with the June 2021 Environmental Statement, new and additional significant adverse effects have been identified at Eskew Beck West (RW09).	No new or additional significant effects, although it is noted that the proposed mitigation for adverse effects on the BHS (the bridge crossing) itself may give rise to adverse short-term, reversible effects.	No new or additional likely significant adverse effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	New and additional likely significant effects identified at Pike Gill Wood North (RW22), Creams Barn Southwest (RW17 and RW18), Leyland Farm East (RW13, RW14, PP01 and PP02). In total, taking account also of likely significant effects at Eskew Beck West (additional Lower Houses off-site highways works), four GWDTEs could experience

EIA topic	Lower Houses Off-site Highways Works and Revised Transport Route	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound	Clitheroe Revised Transport Route	Clitheroe off-site highways works	Additional Environmental Data
							significant adverse effects.
Flood Risk	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects
Ecology	No new or different likely significant effects	Reduction in likely significant effects	Reduction in likely significant adverse effects	No new or different likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	Reduction in likely significant effects (as a result of AIA updates and new GWDTE assessments)
Cultural Heritage	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects
Soils, Geology and Land Quality	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects

EIA topic	Lower Houses Off-site Highways Works and Revised Transport Route	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound	Clitheroe Revised Transport Route	Clitheroe off-site highways works	Additional Environmental Data
Materials and Waste	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects
Public Access and Recreation	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects
Communities and Health	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects
Major Accidents	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects
Transport Planning	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects

EIA topic	Lower Houses Off-site Highways Works and Revised Transport Route	Proposed Temporary Gamble Hole Farm Pasture BHS Crossing	Newton-in-Bowland Compound Hodder Crossing Access Track Realignment and Planning Application Boundary Amendment	Proposed Amendment to Planning Application Boundary – Tunnel to North of Newton-in-Bowland Compound	Clitheroe Revised Transport Route	Clitheroe off-site highways works	Additional Environmental Data
Noise and Vibration	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects
Air Quality and Climate	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects	No new or additional likely significant effects

5.2 Cumulative Effects

- 124) The June 2021 Environmental Statement (Chapter 19) addressed potential cumulative effects. The cumulative assessment was based on technical content drawn from each of the five Environmental Statements, one of which was for the Proposed Bowland Section, that were prepared in support of the nine HARP planning applications. A cumulative assessment was possible at the time of the June 2021 Environmental Statement as it was prepared at approximately the same time as the other HARP Environmental Statements for the other proposed sections.
- 125) The current SEI Report and January 2022 Planning Application for the Proposed Bowland Section have been prepared prior to the completion of two of the five SEI Reports that are being produced at a route-wide level. The opportunity to fully update the cumulative assessment is therefore limited. It is not anticipated that a cumulative assessment of the key findings from each of the five SEI Reports will give rise to any notable changes to the conclusions reached in the 2021 Environmental Statements. However, in the interests of completeness, an updated HARP-wide cumulative assessment will be provided to each of the relevant planning authorities under separate cover.
- 126) One topic of particular interest to certain key stakeholders was an updated cumulative assessment of tree features affected by the Proposed Bowland Section. This information is provided in Tables 9 and 10 below.

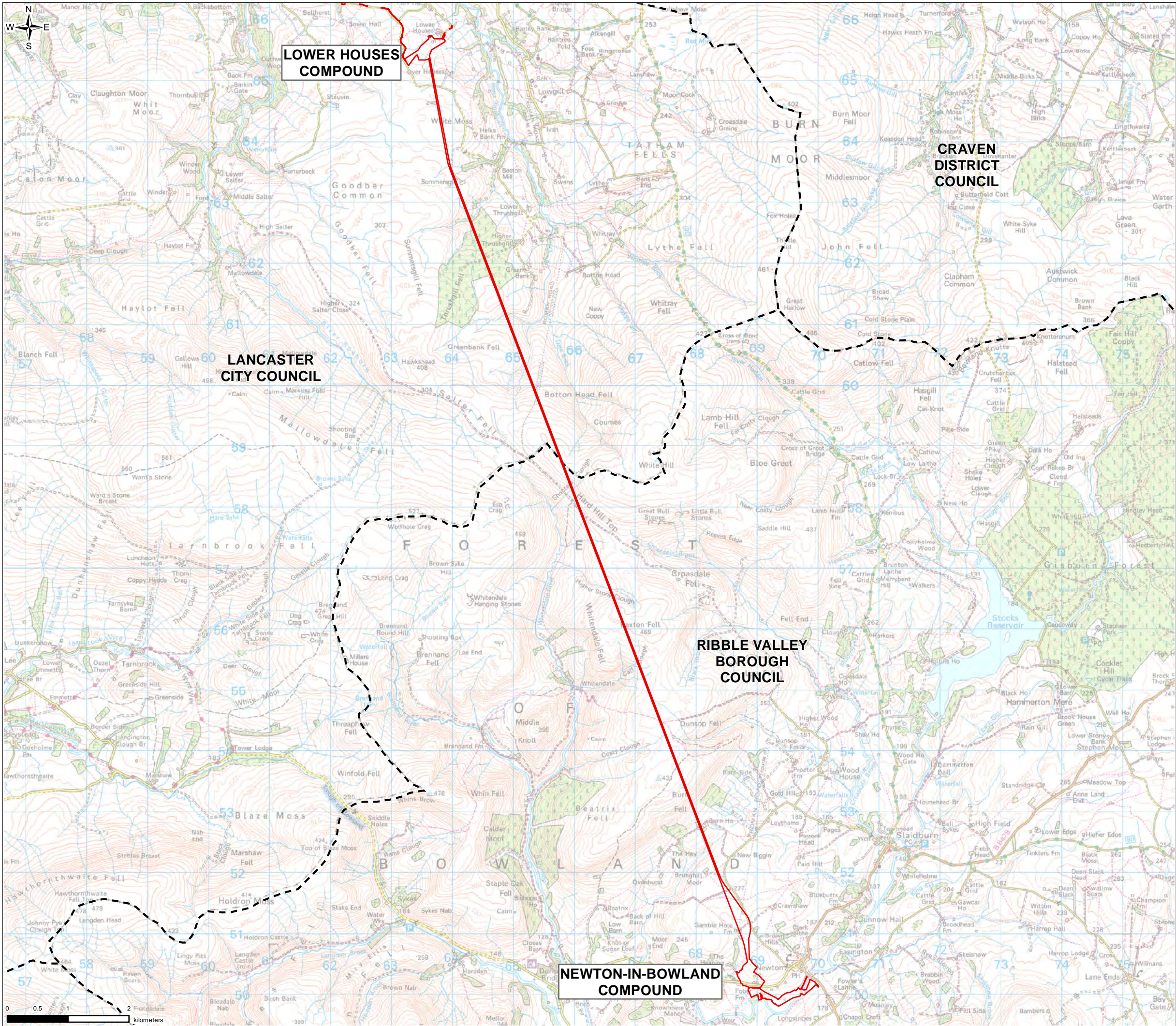
Table 9: Summary RAG status of Lower Houses and Newton-in-Bowland Compounds and Proposed Ribble Crossing

BS5837:2012 grades	RAG status			
	Removal/ Partial Removal	RRAtR	RwPM	Subtotals
A	1	0	26	27
B	7	3	150	160
C	22	6	266	294
U	0	0	22	22
Subtotals	30	9	464	503

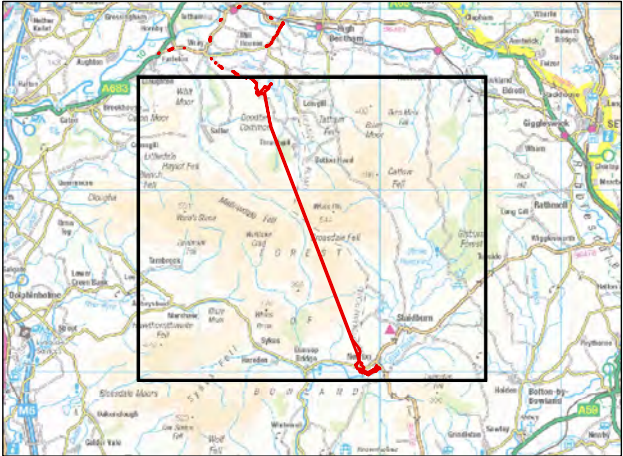
Table 10: Summary RAG status of Off-site Highways Works

BS5837:2012 grades	RAG status			
	Removal/ Partial Removal	RRAtR	RwPM	Subtotals
A	3	2	4	9
B	68	10	16	94
C	45	12	40	97
U	3	2	4	9
Subtotals	119	26	64	209

FIGURE 1.2



- Legend
- Planning Application Boundary
 - Planning Authority Boundary

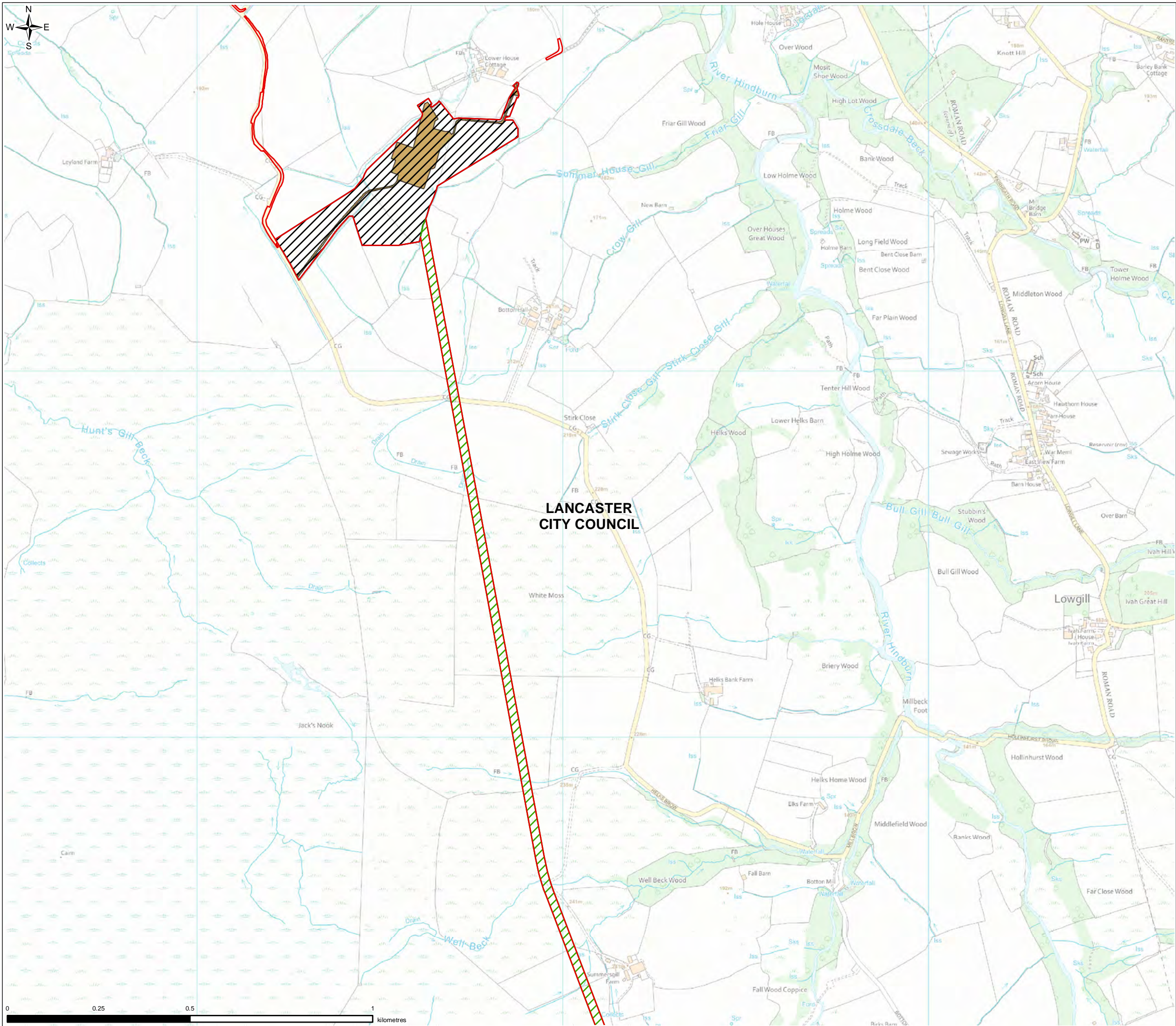


1	EP	LH	SH	Red Line Boundary updates	18/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHRD	REVD	REASON FOR ISSUE	DATE

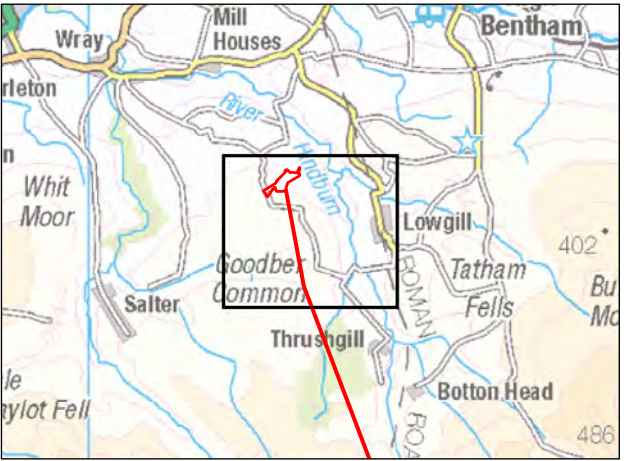


UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PROPOSED BOWLAND SECTION
PAGE 1 OF 1

SCALE 1:60,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-001-002	REVISION 1



- Legend
- Planning Application Boundary
 - Proposed Construction Compound/Laydown Area
 - Proposed Tunnel Route - Indicative
 - Proposed Core Working Area

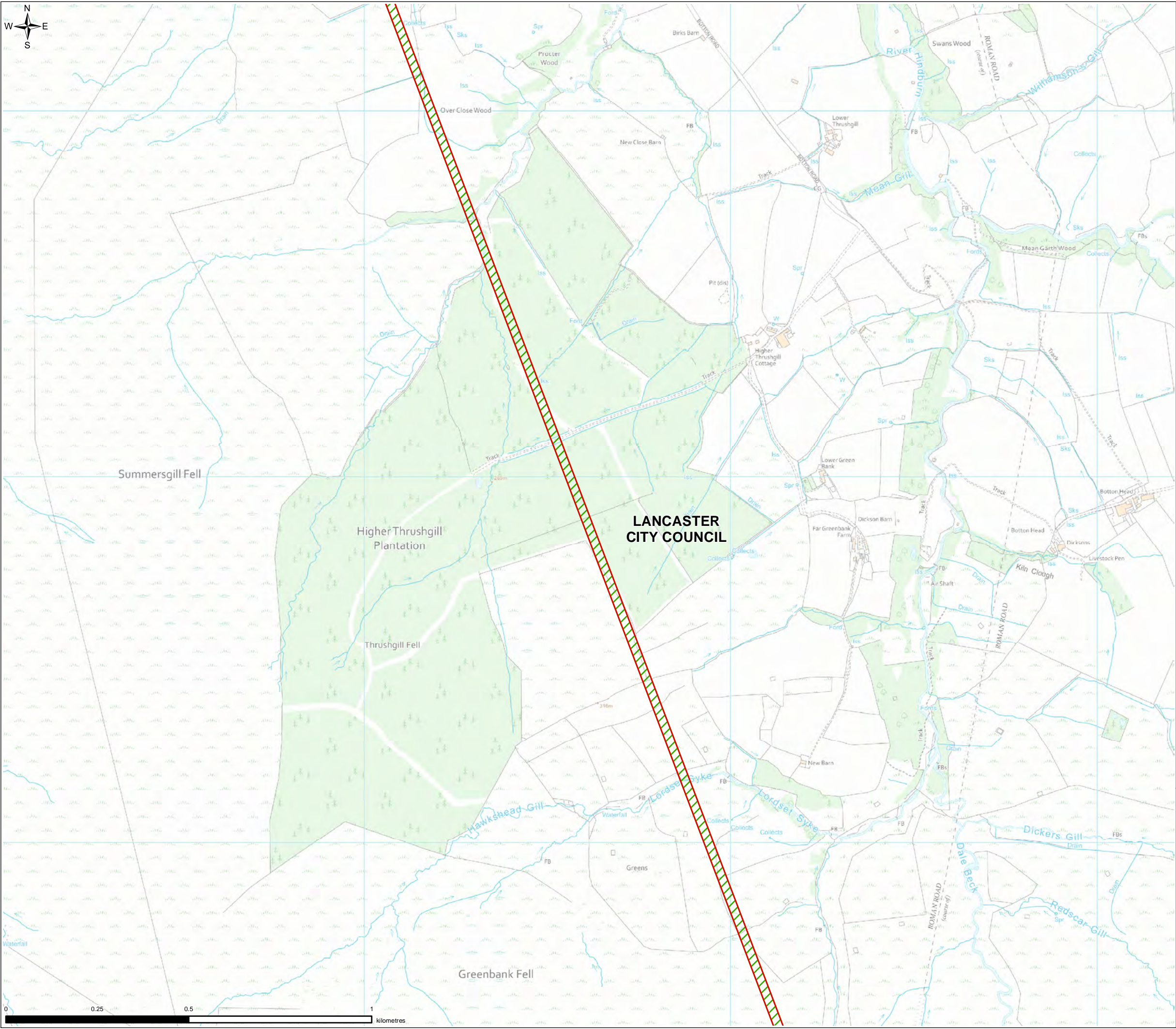


1	EP	LH	SH	Red Line Boundary updates	18/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE

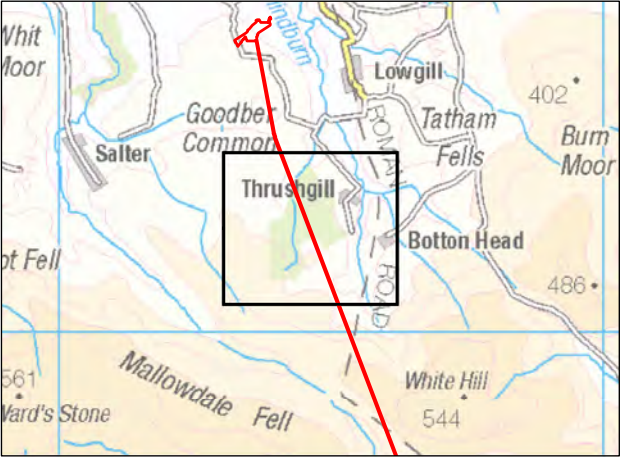


UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PLANNING APPLICATION BOUNDARY
PROPOSED BOWLAND SECTION
PAGE 1 OF 6

SCALE 1:10,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001A	REVISION 1



- Legend
- Planning Application Boundary
 - Proposed Tunnel Route - Indicative

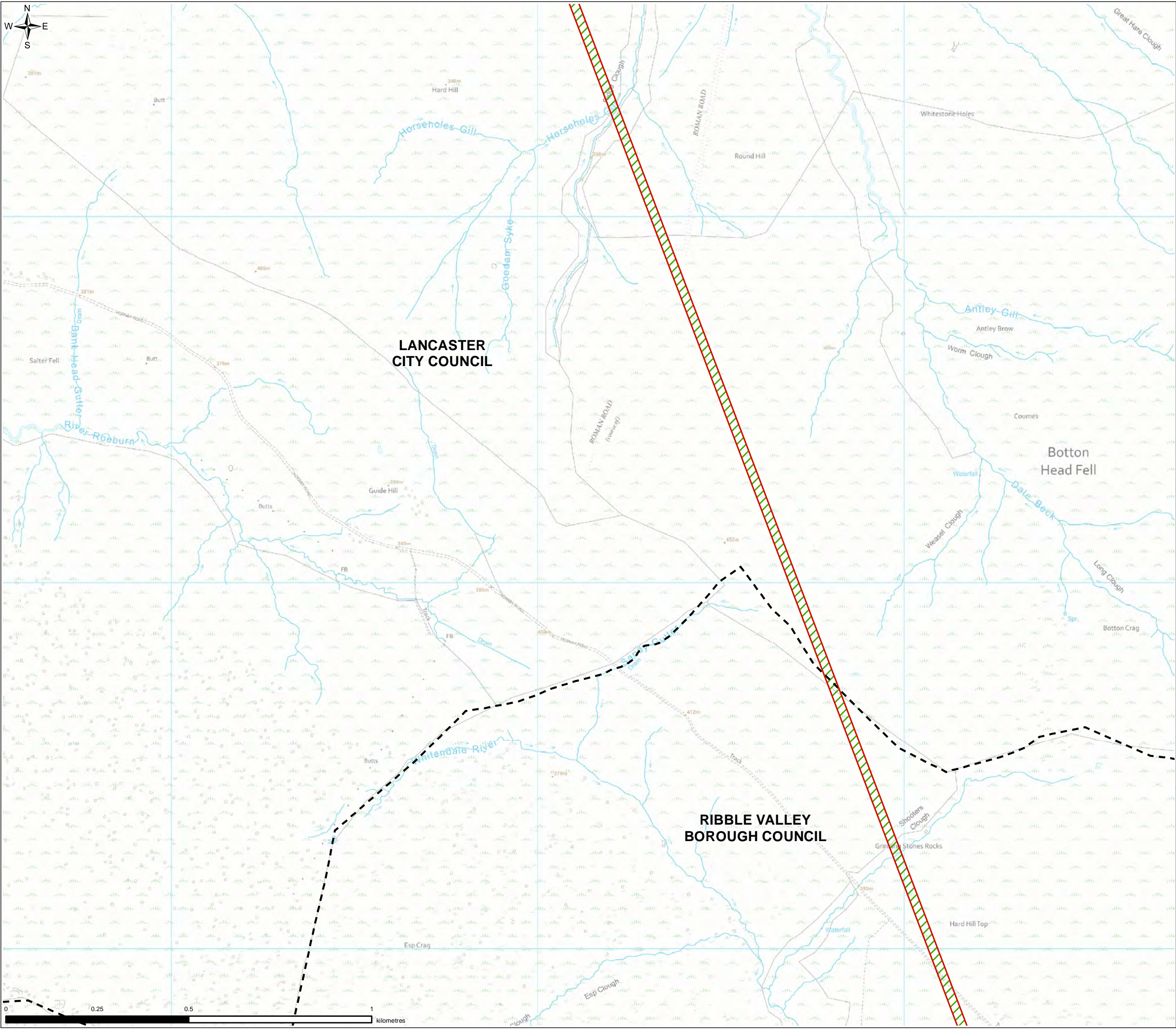


1	EP	LH	SH	Red Line Boundary updates	18/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



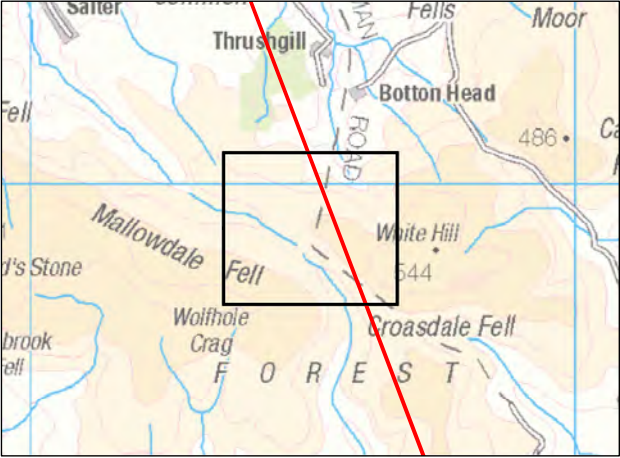
UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PLANNING APPLICATION BOUNDARY
PROPOSED BOWLAND SECTION
PAGE 2 OF 6

SCALE 1:10,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001A	REVISION 1



B3

- Legend
- Planning Application Boundary
 - Proposed Tunnel Route - Indicative
 - Planning Authority Boundary

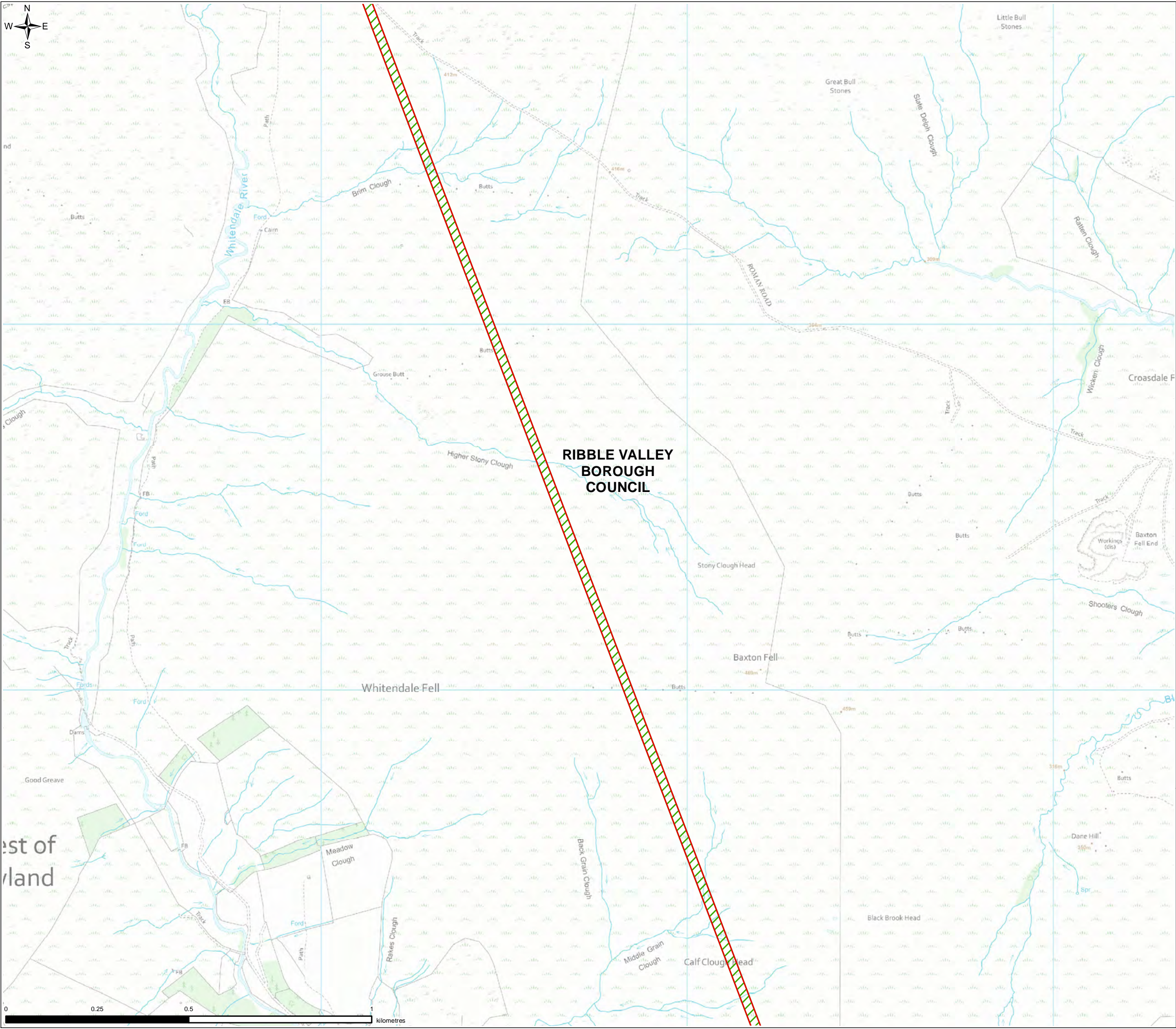


1	EP	LH	SH	Red Line Boundary updates	18/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



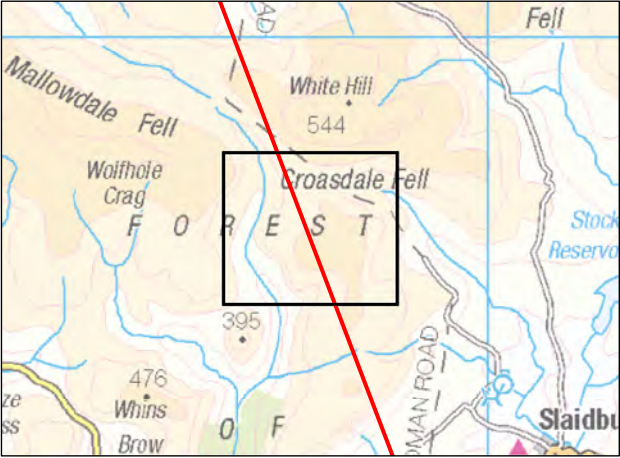
UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PLANNING APPLICATION BOUNDARY
PROPOSED BOWLAND SECTION
PAGE 3 OF 6

SCALE 1:10,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001A	REVISION 1



B4

- Legend
- Planning Application Boundary
 - Proposed Tunnel Route - Indicative

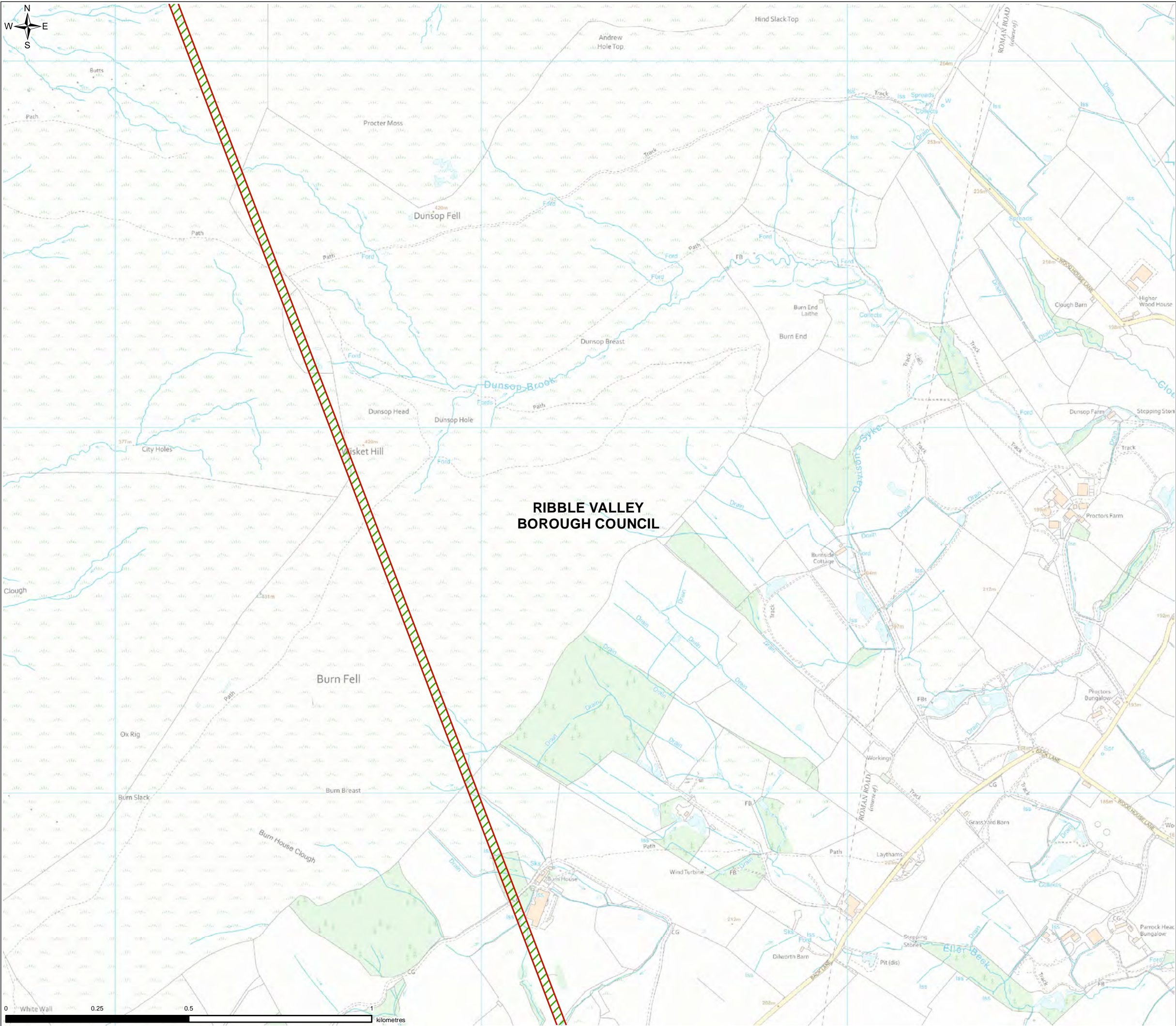


1	EP	LH	SH	Red Line Boundary updates	18/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PLANNING APPLICATION BOUNDARY
PROPOSED BOWLAND SECTION
PAGE 4 OF 6

SCALE 1:10,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001A	REVISION 1



Legend

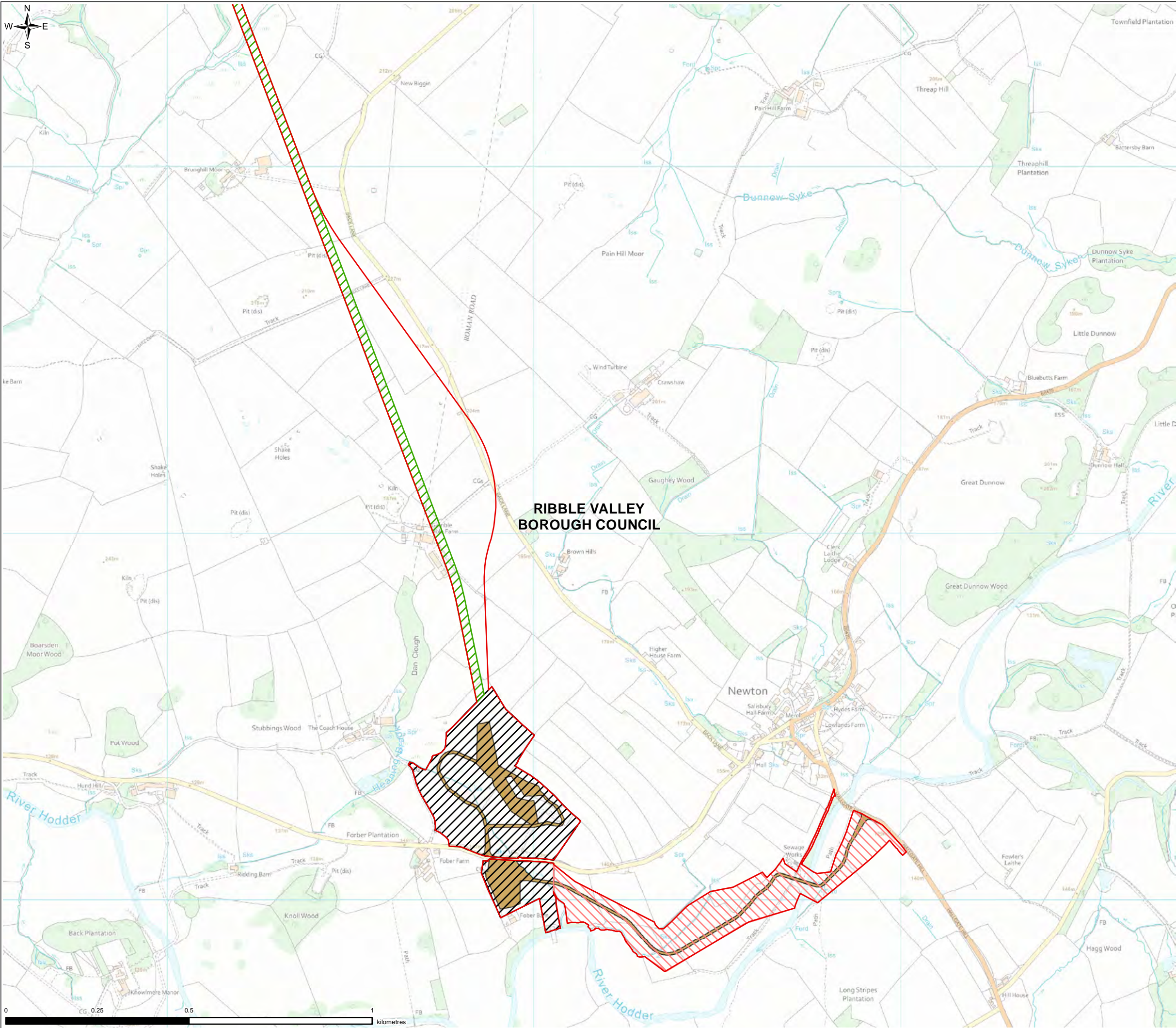
- Planning Application Boundary
- Proposed Tunnel Route - Indicative

1	EP	LH	SH	Red Line Boundary updates	18/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE

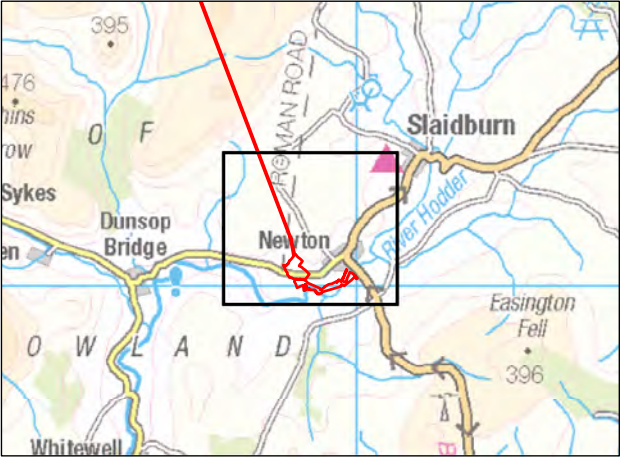


UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PLANNING APPLICATION BOUNDARY
PROPOSED BOWLAND SECTION
PAGE 5 OF 6

SCALE 1:10,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001A	REVISION 1



- Legend
- Planning Application Boundary
 - Proposed Construction Access
 - Proposed Construction Compound/Laydown Area
 - Proposed Tunnel Route - Indicative
 - Proposed Core Working Area

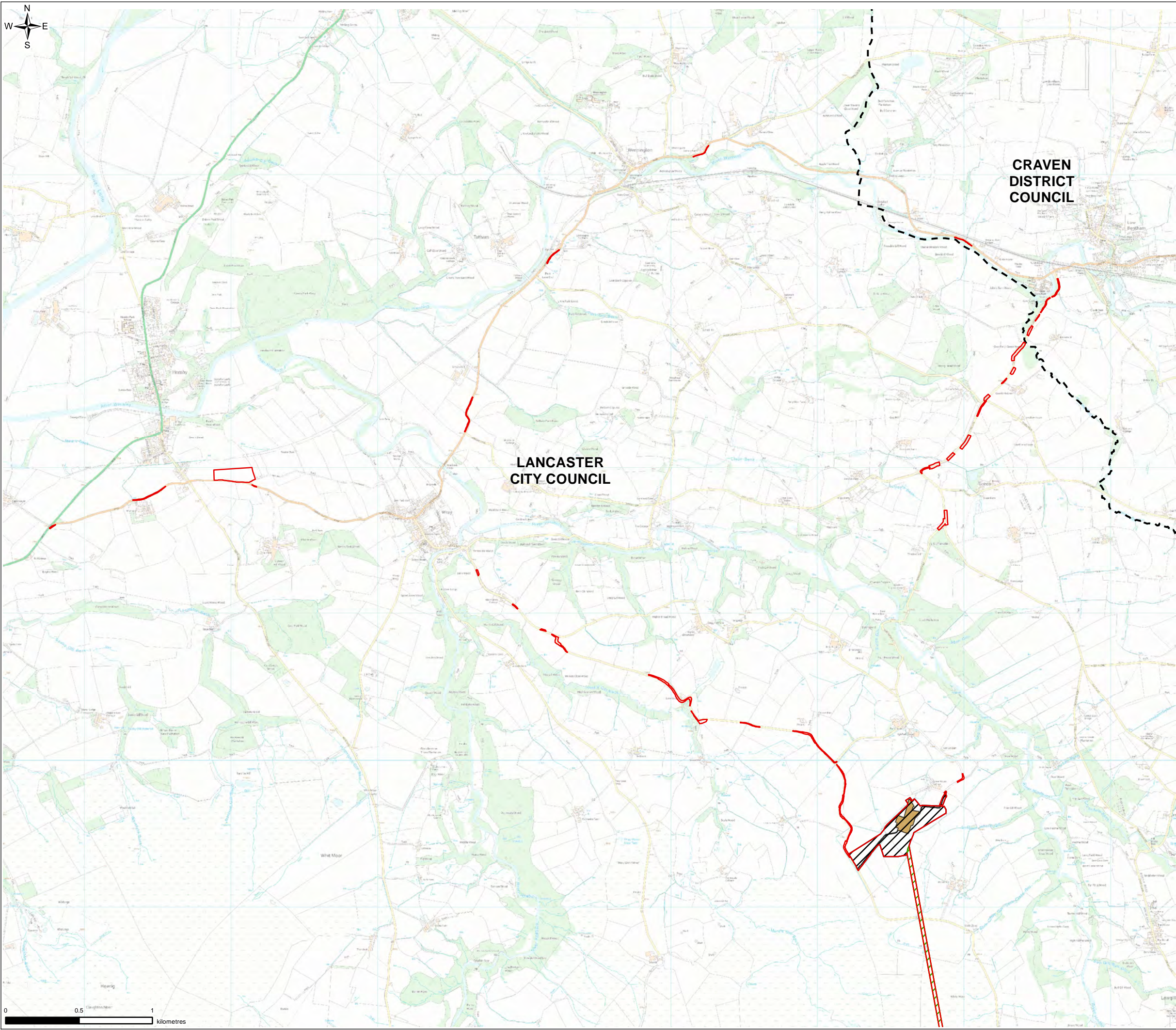


1	EP	LH	SH	Red Line Boundary updates	18/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHRD	REVD	REASON FOR ISSUE	DATE

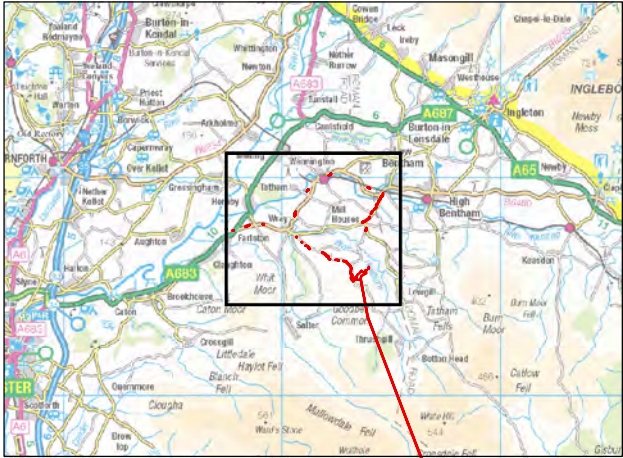


UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PLANNING APPLICATION BOUNDARY
PROPOSED BOWLAND SECTION
PAGE 6 OF 6

SCALE 1:10,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001A	REVISION 1



- Legend
- Planning Application
 - Proposed Construction Compound/Laydown Area
 - Proposed Tunnel Route -
 - Proposed Core Working Area

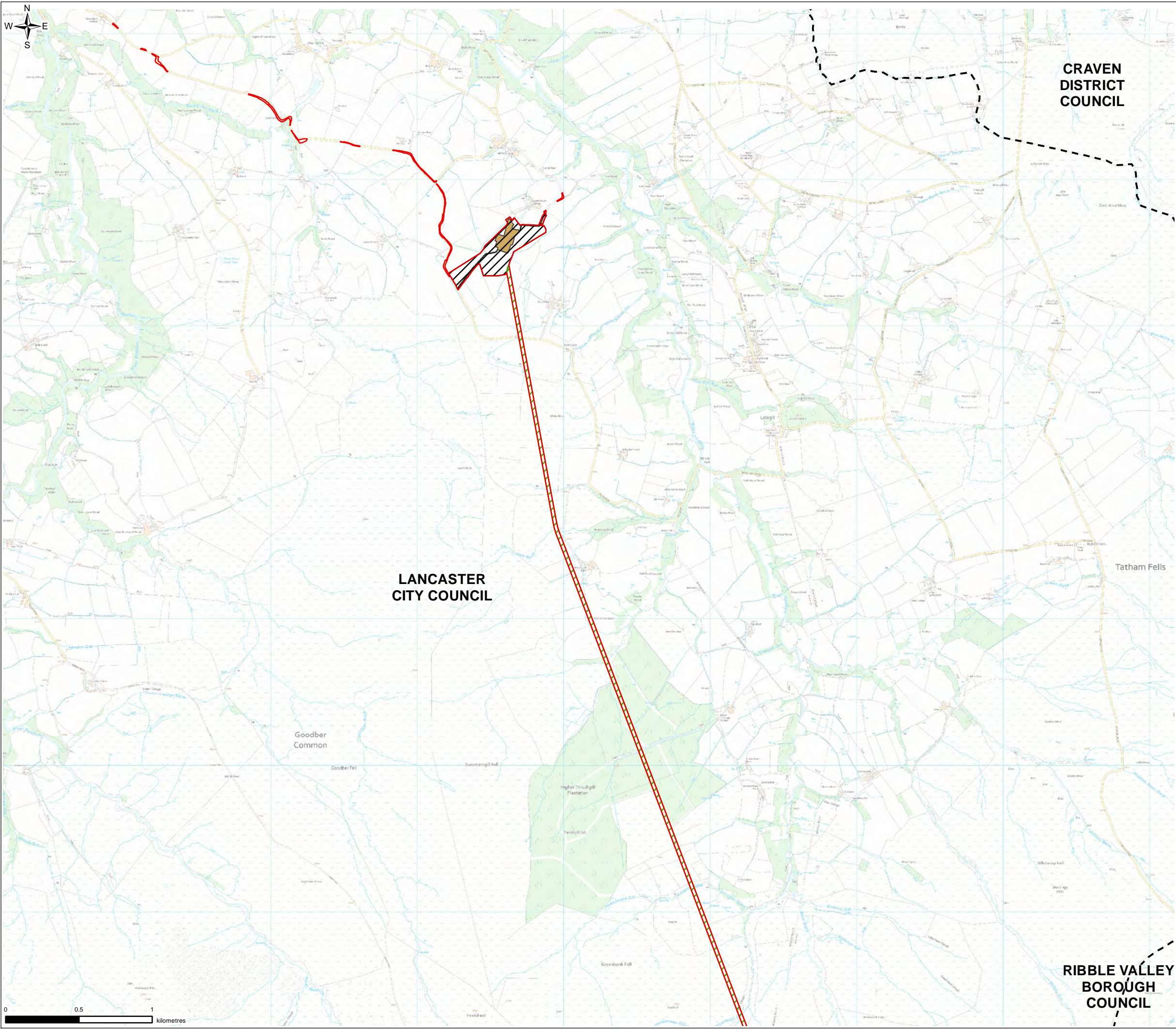


1	EP	LH	SH	Planning Application Boundary updates	24/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE

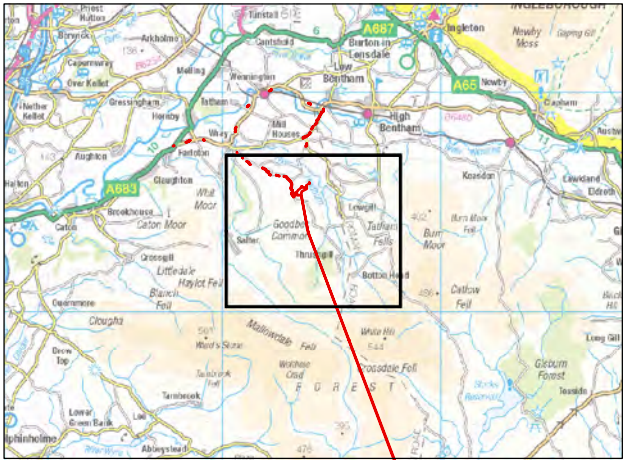


UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PLANNING APPLICATION BOUNDARY
PROPOSED BOWLAND SECTION
PAGE 1 OF 5

SCALE 1:25,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001B	REVISION 1



- Legend**
- Planning Application Boundary
 - Proposed Construction Compound/Laydown Area
 - Proposed Tunnel Route - Indicative
 - Proposed Core Working Area

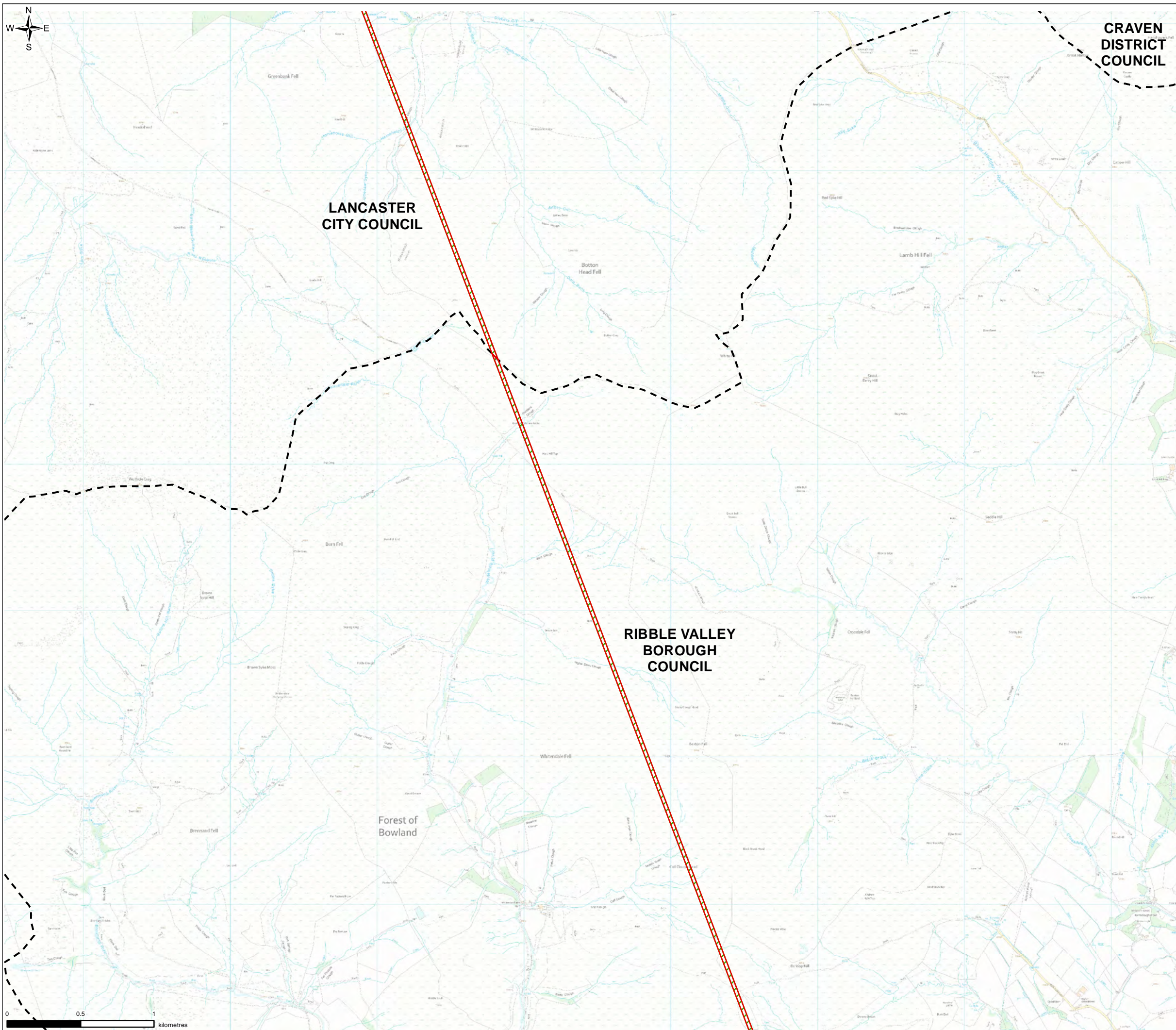


1	EP	LH	SH	Planning Application Boundary updates	24/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
 HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
 PLANNING APPLICATION BOUNDARY
 PROPOSED BOWLAND SECTION
 PAGE 2 OF 5

SCALE 1:25,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001B	REVISION 1



B3

CRAVEN DISTRICT COUNCIL

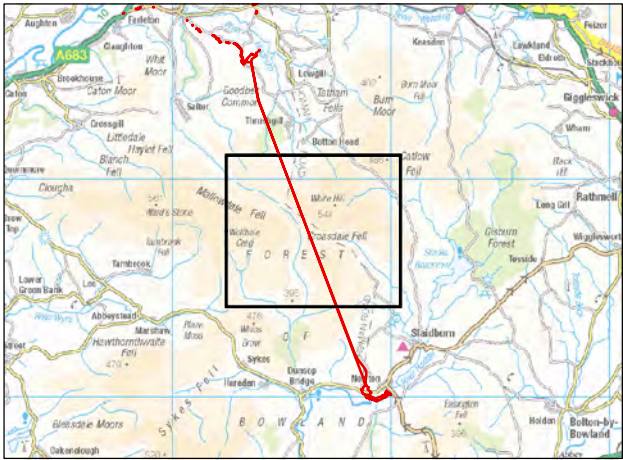
**LANCASTER
CITY COUNCIL**

**RIBBLE VALLEY
BOROUGH
COUNCIL**

Forest of
Bowland

Legend

 Planning Application Boundary

 Proposed Tunnel Route - Indicative

1	EP	LH	SH	Planning Application Boundary updates	24/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE

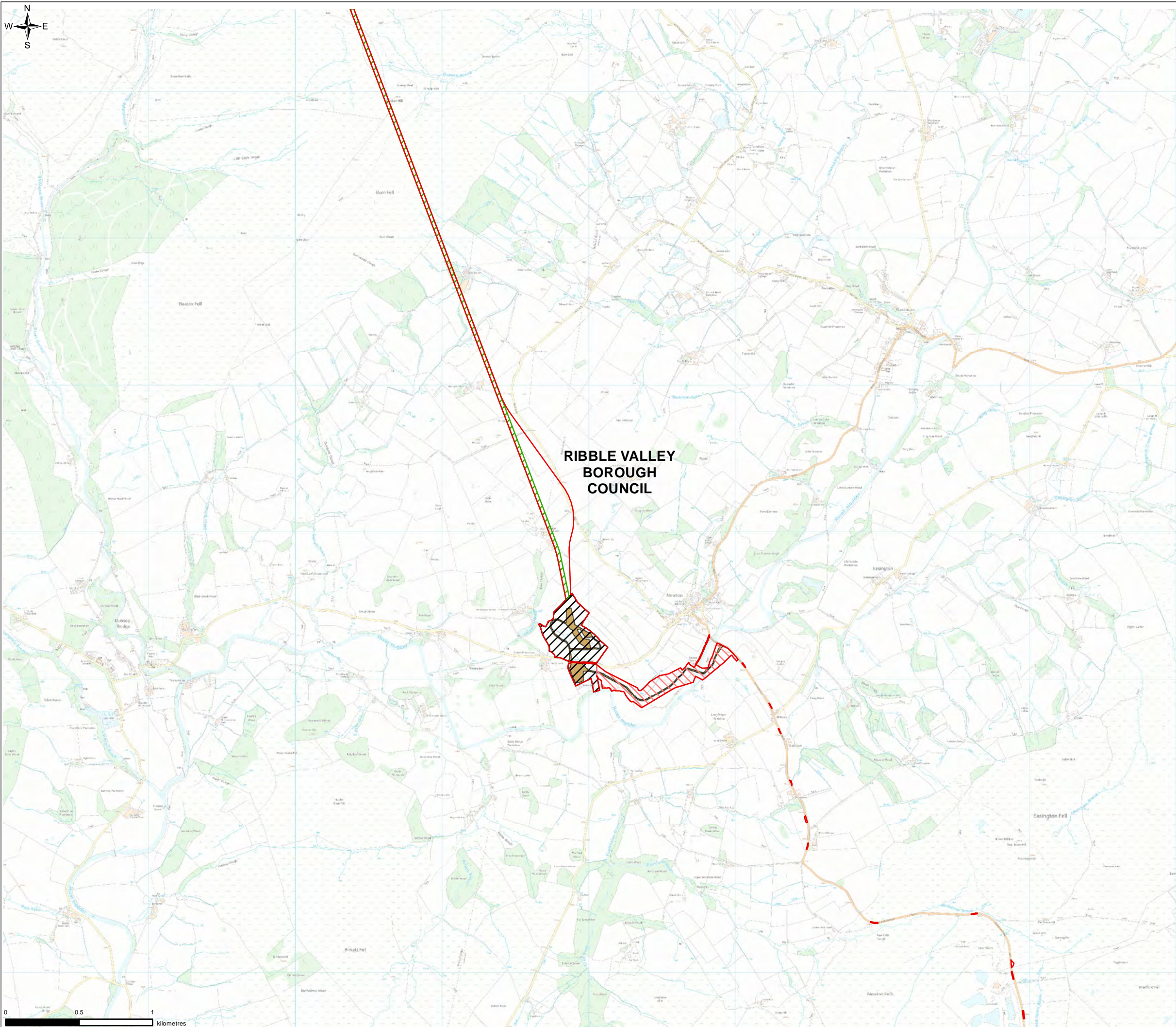


UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PLANNING APPLICATION BOUNDARY
PROPOSED BOWLAND SECTION
PAGE 3 OF 5

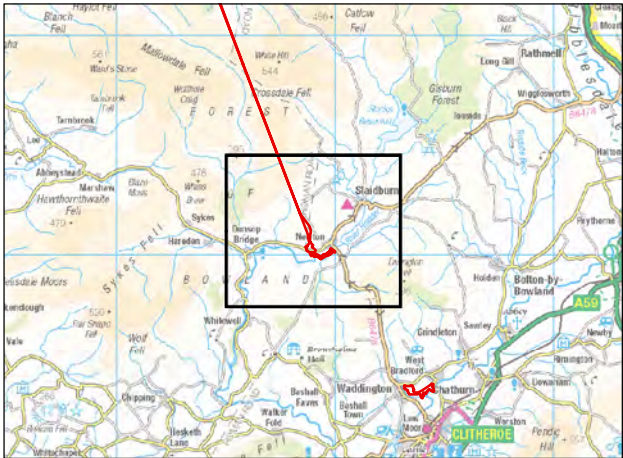
SCALE 1:25,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001B	REVISION 1

The copyright of this document, which contains information of a proprietary nature, is vested in United Utilities Water Limited. The content of this document may not be used for purposes other than that for which it has been supplied and may not be reproduced, either wholly or in part, in any way whatsoever. It may not be used by, or its contents divulged to any other person whatsoever without the prior written permission of United Utilities Water Limited.

Copyright Acknowledgement: Use of Ordnance Survey map data sanctioned by the controller of H.M. Stationery Office. OS Licence Number 100019326. Crown copyright reserved. Unauthorised production infringes copyright. © Crown copyright and database rights 2020 Ordnance Survey 010003767. Contains public sector information licensed under the Open Government Licence v3.0.



- Legend
- Planning Application
 - Proposed Construction Access
 - Proposed Construction Compound/Laydown Area
 - Proposed Tunnel Route -
 - Proposed Core Working Area

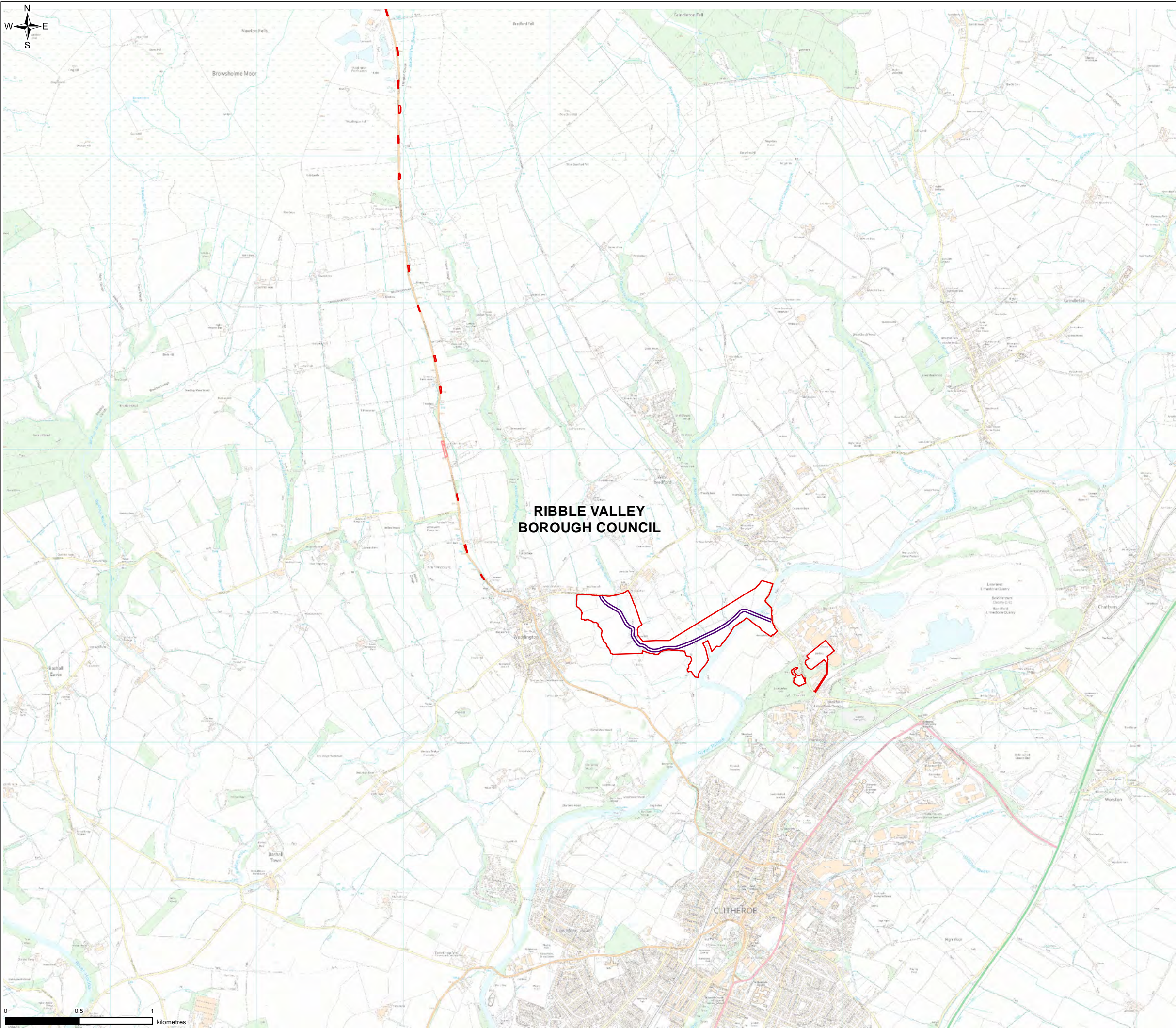


1	EP	LH	SH	Planning Application Boundary updates	24/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE

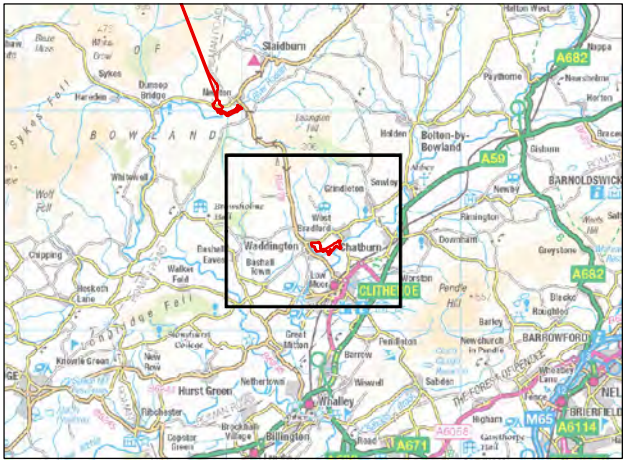


UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PLANNING APPLICATION BOUNDARY
PROPOSED BOWLAND SECTION
PAGE 4 OF 5

SCALE 1:25,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001B	REVISION 1



- Legend
- Planning Application Boundary
 - Ribble Crossing Indicative Route

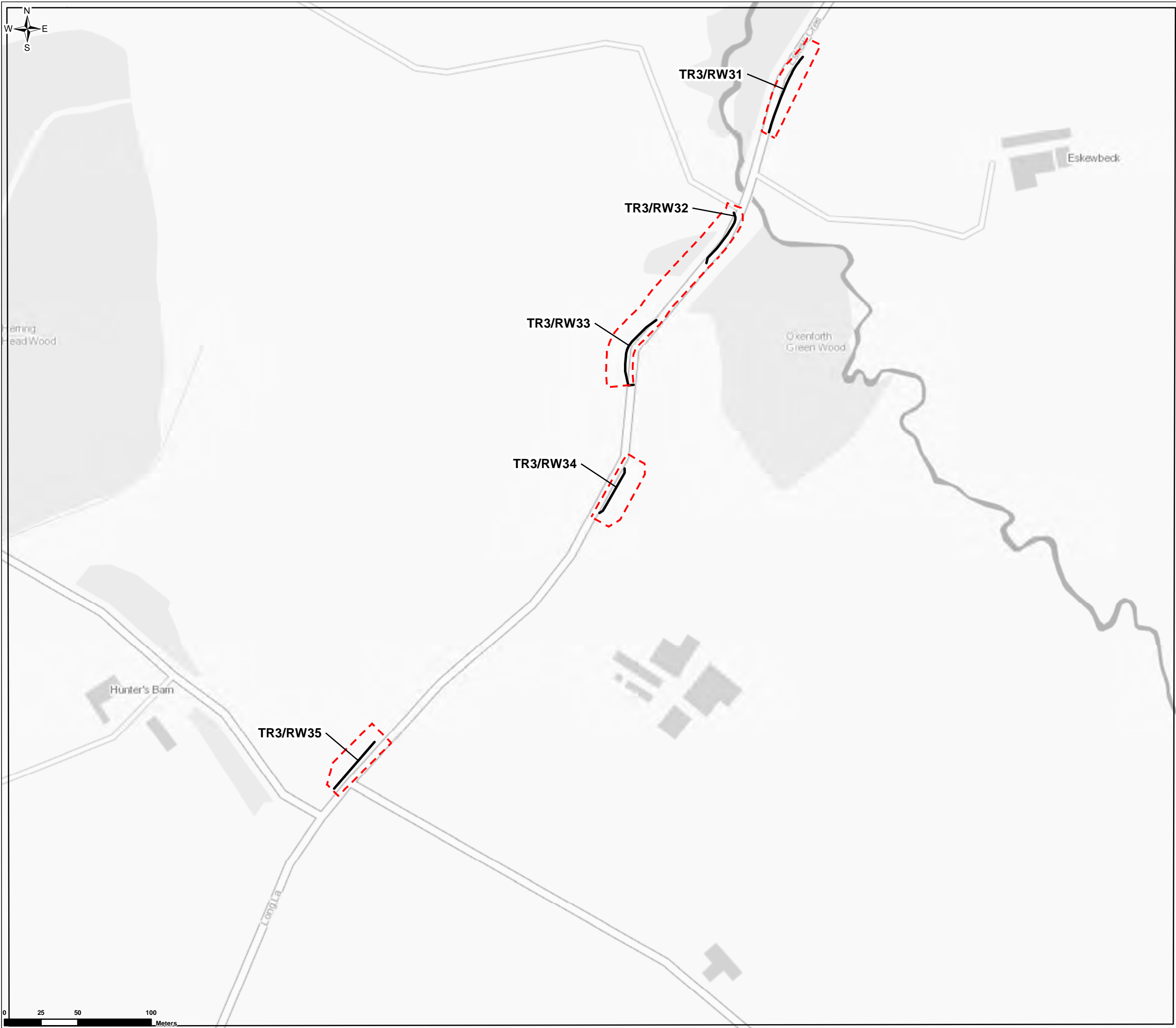


1	EP	LH	SH	Planning Application Boundary updates	24/11/2021
0	SP	LH	SH	Initial Issue	26/04/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PLANNING APPLICATION BOUNDARY
PROPOSED BOWLAND SECTION
PAGE 5 OF 5

SCALE 1:25,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-003-001B	REVISION 1



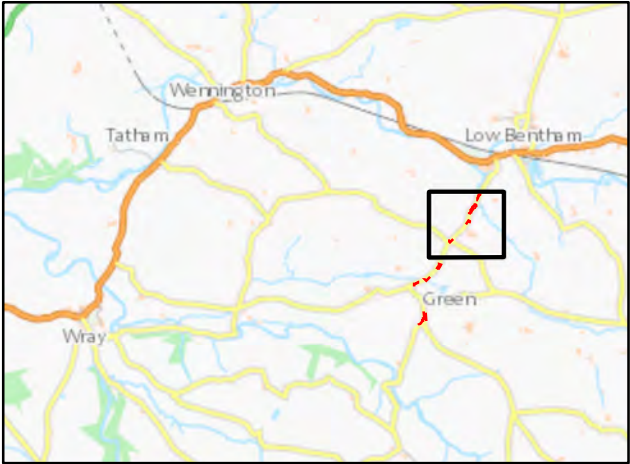
SEI FIGURE 1

Legend

Planning Application Boundary

Road Widening (RW)

Label Abbreviations:
RW - Road Widening



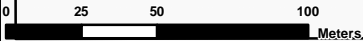
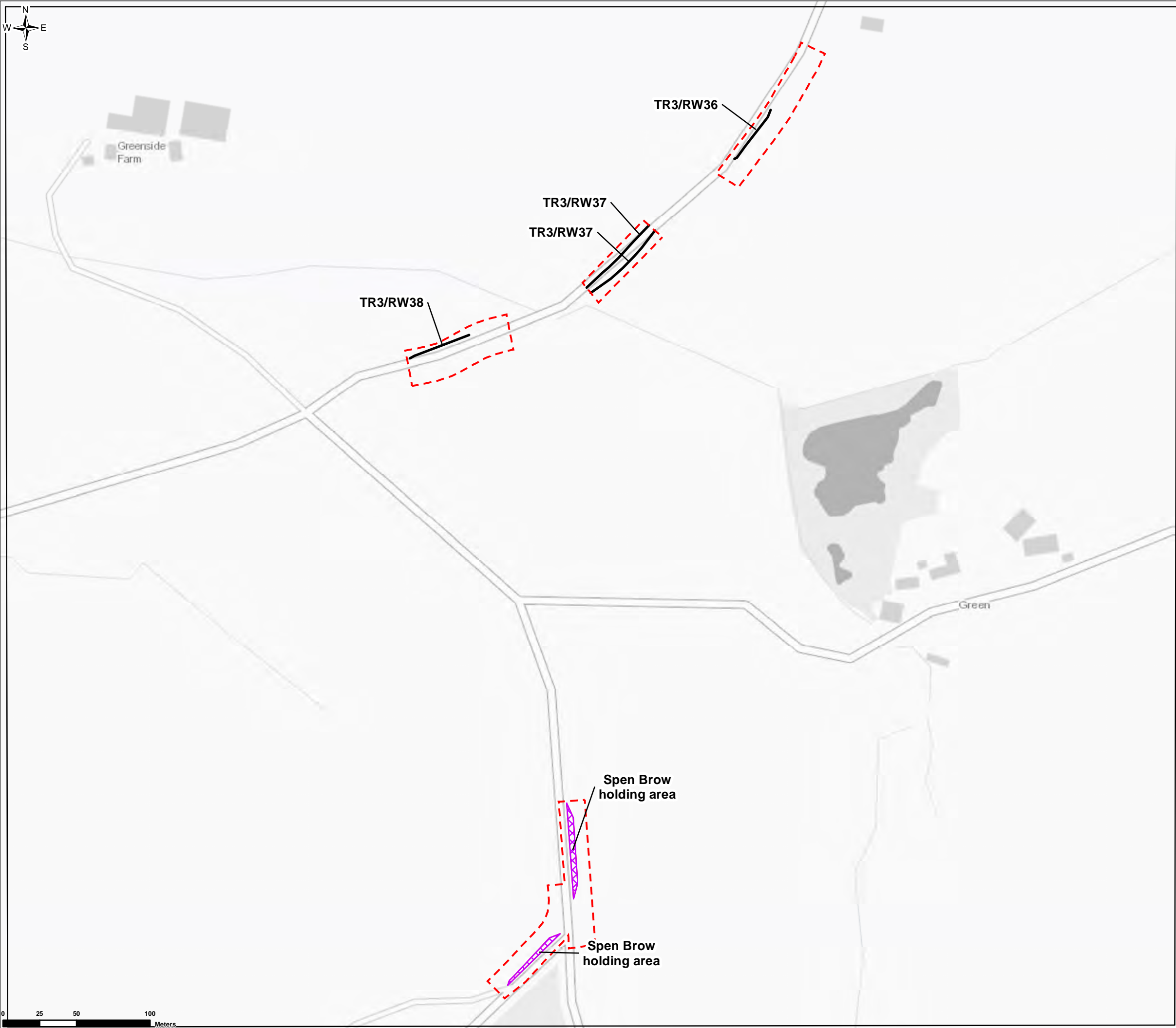
0	EP	LH	SH	INITIAL ISSUE	2/21/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
BOWLAND ADDITIONAL OFF-SITE HIGHWAYS WORKS

SCALE 1:2,500	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-SEI-001	REVISION 0

The copyright of this document, which contains information of a proprietary nature, is vested in United Utilities Water Limited. The content of this document may not be used for purposes other than that for which it has been supplied and may not be reproduced, either wholly or in part, in any way whatsoever. It may not be used by, or its contents divulged to any other person whatsoever without the prior written permission of United Utilities Water Limited.
Copyright Acknowledgement: Use of Ordnance Survey map data sanctioned by the controller of H.M. Stationery Office. OS Licence Number 100019326. Crown copyright reserved. Unauthorised production infringes copyright. © Crown copyright and database rights 2021 Ordnance Survey 0100031673. Contains OS data © Crown Copyright and database right 2020. © Historic England 2021. Contains Ordnance Survey data © Crown copyright and database right 2021.
The Historic England GIS Data contained in this material was obtained on 07/08/2021. Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2021.



SEI FIGURE 1

Legend

- Planning Application Boundary
- Road Widening (RW)
- Passing Place (PP)

Label Abbreviations:
RW - Road Widening



0	EP	LH	SH	INITIAL ISSUE	2/21/2022
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
BOWLAND ADDITIONAL OFF-SITE HIGHWAYS WORKS

SCALE 1:2,500	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-SEI-001	REVISION 0

The copyright of this document, which contains information of a proprietary nature, is vested in United Utilities Water Limited. The content of this document may not be used for purposes other than that for which it has been supplied and may not be reproduced, either wholly or in part, in any way whatsoever. It may not be used by, or its contents divulged to any other person whatsoever without the prior written permission of United Utilities Water Limited.
Copyright Acknowledgement: Use of Ordnance Survey map data sanctioned by the controller of H.M. Stationery Office. OS Licence Number 100019326. Crown copyright reserved. Unauthorised production infringes copyright. © Crown copyright and database rights 2021 Ordnance Survey 0100031673. Contains OS data © Crown Copyright and database right 2020. © Historic England 2021. Contains Ordnance Survey data © Crown copyright and database right 2021.
The Historic England GIS Data contained in this material was obtained on 07/08/2021. Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2021.



FIGURE 6.5

Notes

Tree survey features are prefixed with a 'T', 'G', 'H' or 'W' to identify respective feature type as an individual tree, tree group, hedgerow or woodland. Each survey feature is numbered sequentially from north to south for the full Proposed Programme of Works.

Plan to be viewed with corresponding AIA and used for planning purposes only. Indicative plan is not to be used for enabling works or construction purposes. Contractor to confirm with local planning authority all tree retention, protection and removal requirements prior to commencement of enabling works.

Indicative locations of survey features should be site-verified against a full topographical survey of existing stem locations at a later design stage prior to commencement of works.

Legend

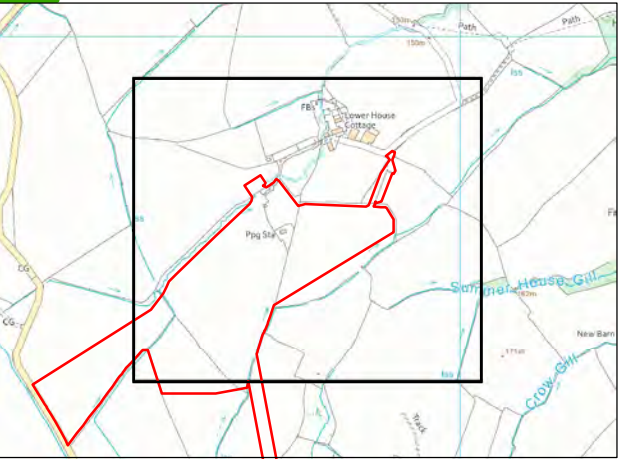
Planning Application Boundary

Tree Survey Information

- Individual Tree
- Category A Feature
- Category B Feature
- Category C Feature
- Category U Feature
- Root Protection Area

RAG Assessment

- Trees to be removed/partially removed
- Trees at risk of removal aiming to retain
- Trees to be retained with protection measures

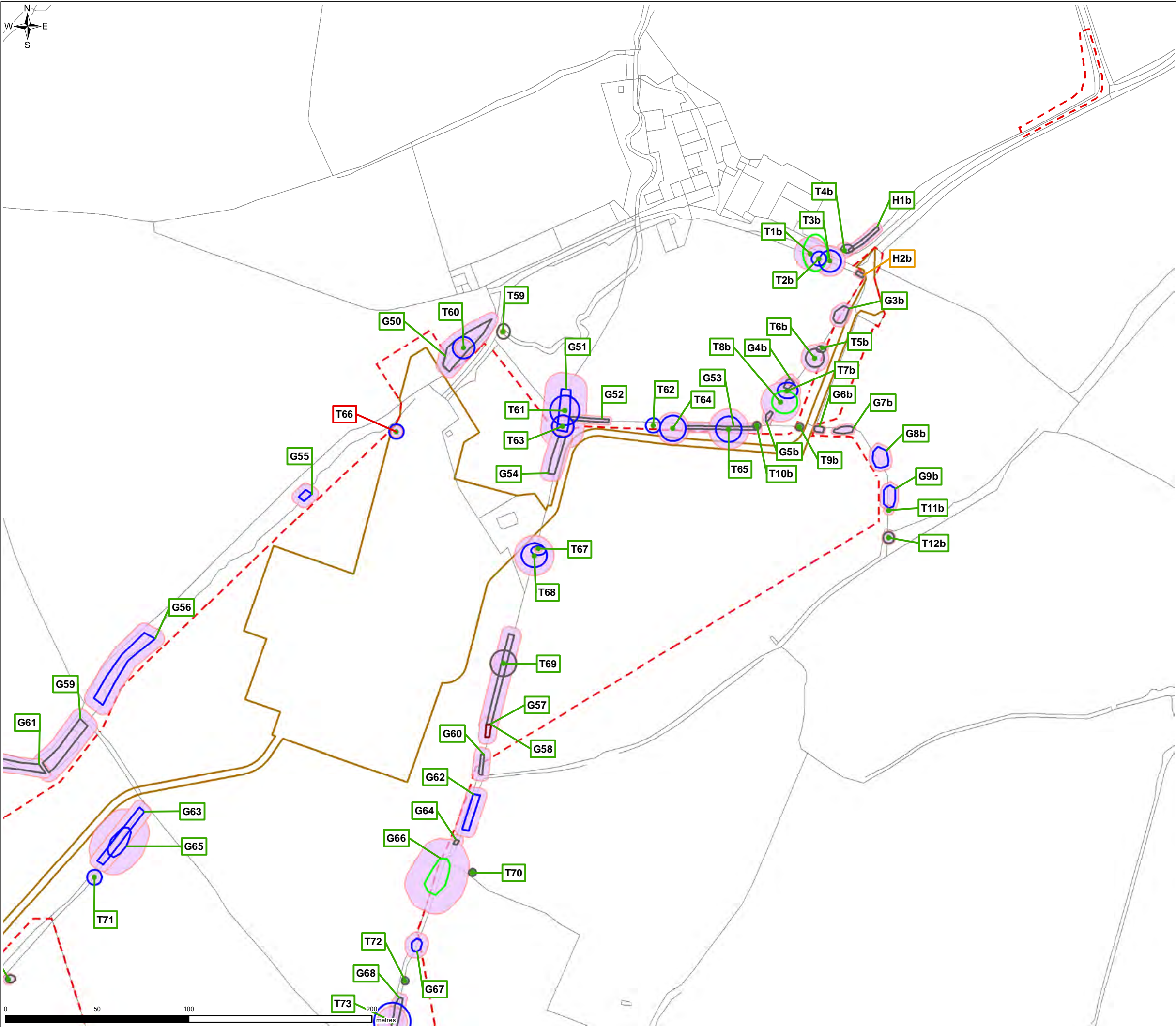


1	EP	DC	MW	Planning Application Boundary changes	12/01/2022
0	SP	DC	MW	Initial Issue	28/02/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
TREE CONSTRAINTS AND ASSESSMENT PLAN
PAGE 1 OF 5

SCALE 1:2,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-006-005-AD1	REVISION 0



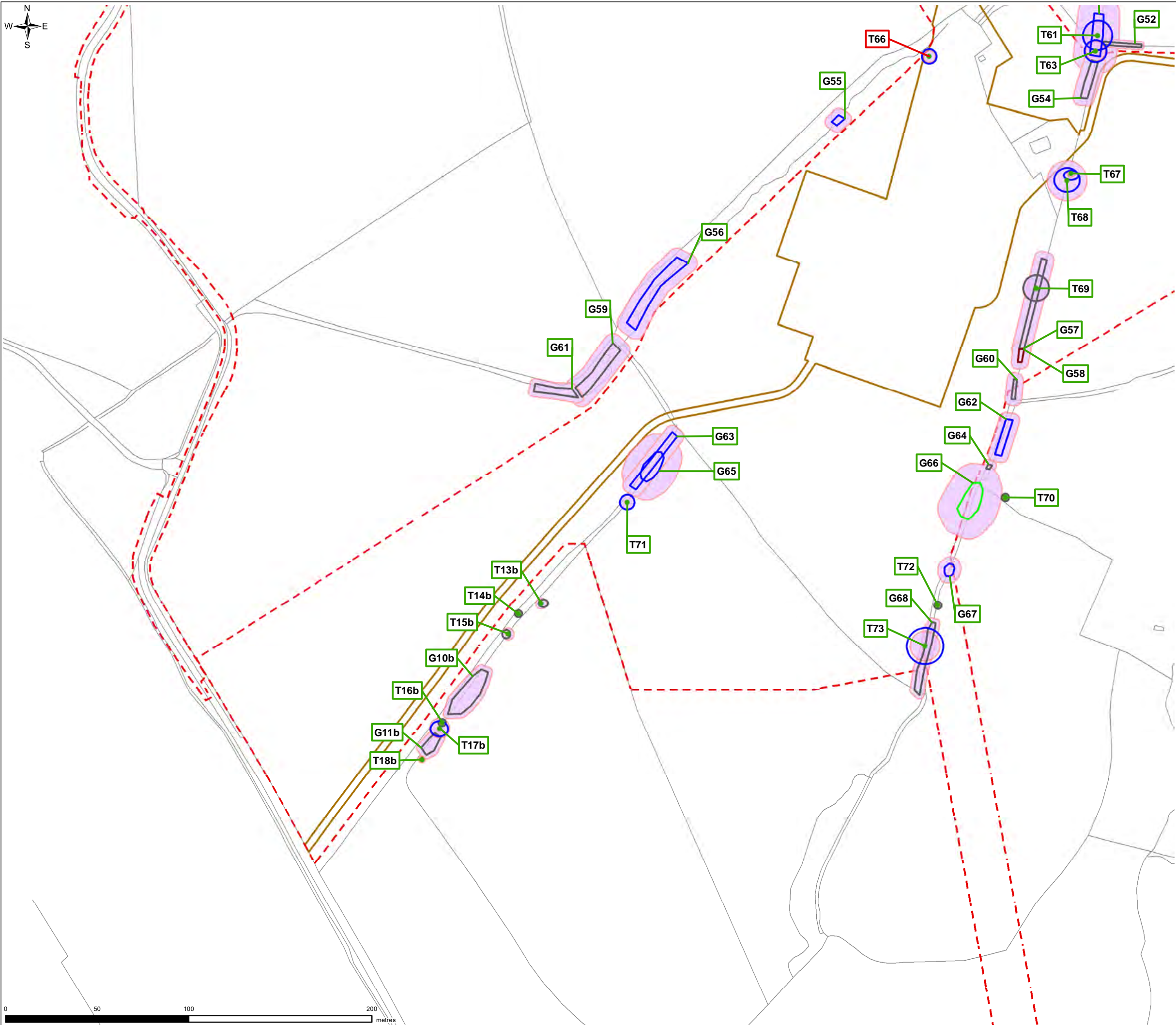


FIGURE 6.5

Notes
Tree survey features are prefixed with a 'T', 'G', 'H' or 'W' to identify respective feature type as an individual tree, tree group, hedgerow or woodland. Each survey feature is numbered sequentially from north to south for the full Proposed Programme of Works.
Plan to be viewed with corresponding AIA and used for planning purposes only. Indicative plan is not to be used for enabling works or construction purposes. Contractor to confirm with local planning authority all tree retention, protection and removal requirements prior to commencement of enabling works.
Indicative locations of survey features should be site-verified against a full topographical survey of existing stem locations at a later design stage prior to commencement of works.

Legend

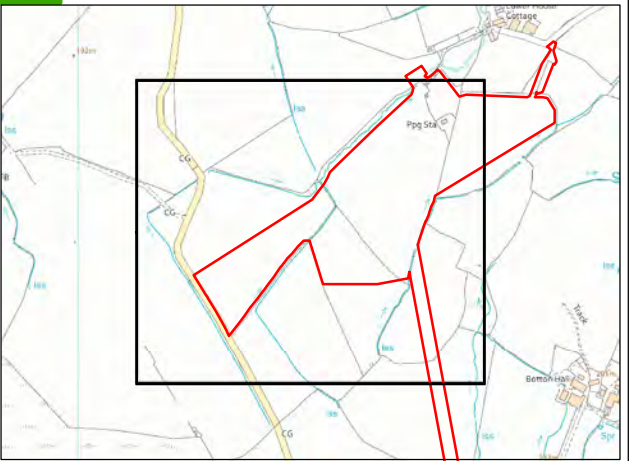
Planning Application Boundary

Tree Survey Information

- Individual Tree
- Category A Feature
- Category B Feature
- Category C Feature
- Category U Feature
- Root Protection Area

RAG Assessment

- Trees to be removed/partially removed
- Trees at risk of removal aiming to retain
- Trees to be retained with protection measures



1	EP	DC	MW	Planning Application Boundary changes	12/01/2022
0	SP	DC	MW	Initial Issue	28/02/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
TREE CONSTRAINTS AND ASSESSMENT PLAN
PAGE 2 OF 5

SCALE 1:2,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-006-005-AD1	REVISION 0

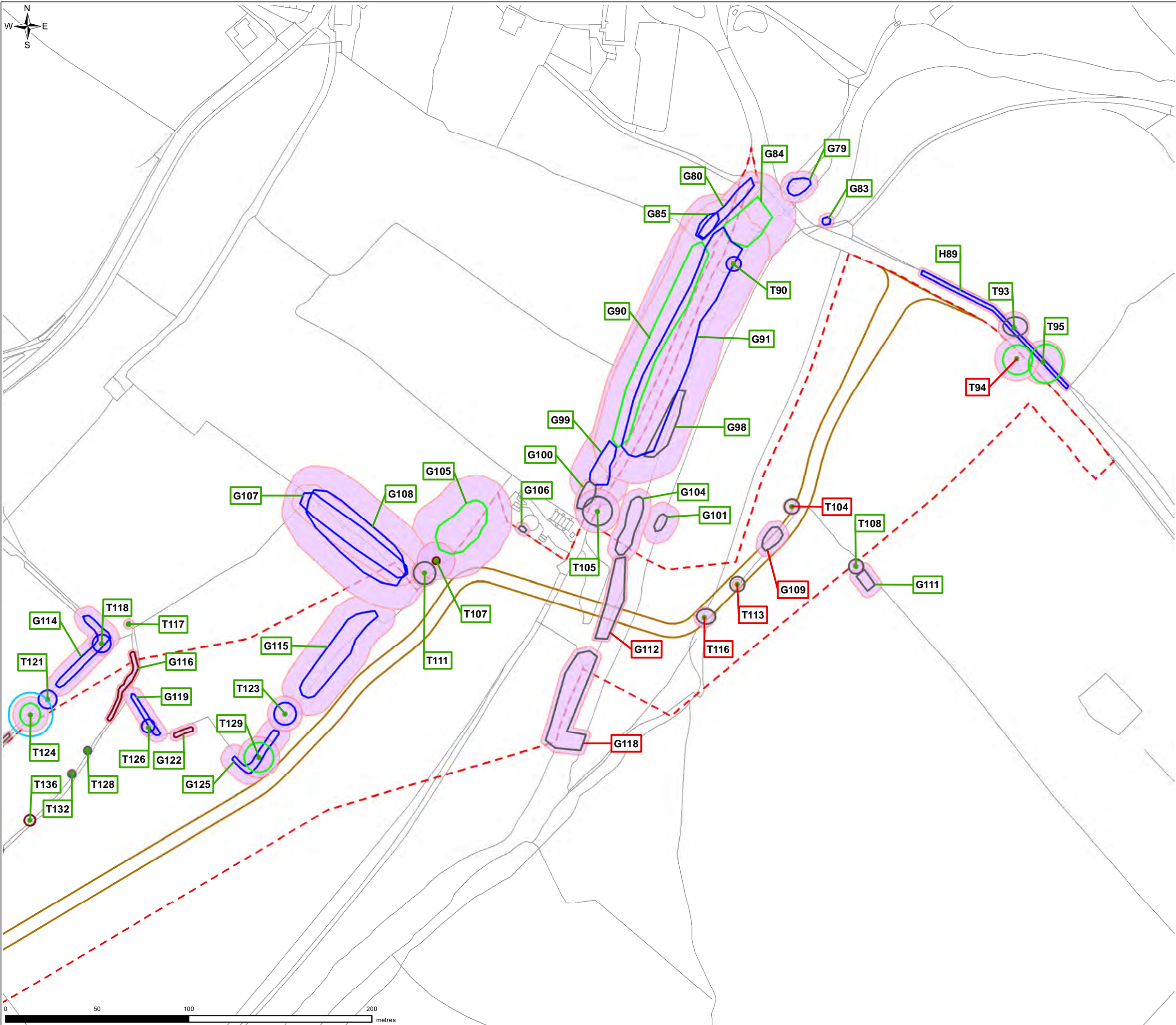


FIGURE 6.5

Notes
Tree survey features are prefixed with a 'T', 'G', 'H' or 'W' to identify respective feature type as an individual tree, tree group, hedgerow or woodland. Each survey feature is numbered sequentially from north to south for the full Proposed Programme of Works.
Plan to be viewed with corresponding AIA and used for planning purposes only. Indicative plan is not to be used for enabling works or construction purposes. Contractor to confirm with local planning authority all tree retention, protection and removal requirements prior to commencement of enabling works.
Indicative locations of survey features should be site-verified against a full topographical survey of existing stem locations at a later design stage prior to commencement of works.

Legend

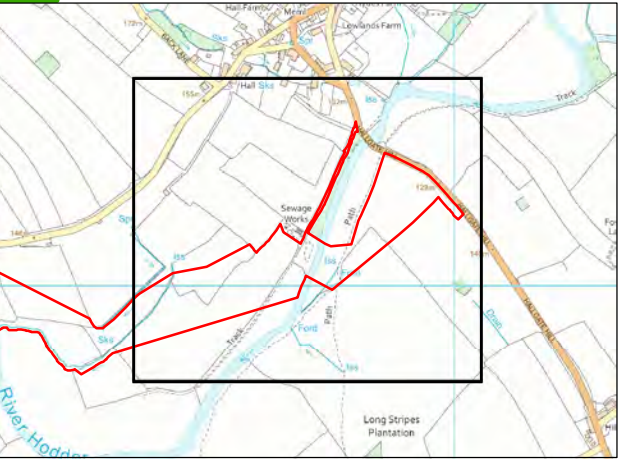
Planning Application Boundary

Tree Survey Information

- Individual Tree
- Category A Feature
- Category B Feature
- Category C Feature
- Category U Feature
- Root Protection Area
- Standing Advice Buffer Zone

RAG Assessment

- Trees to be removed/partially removed
- Trees at risk of removal aiming to retain
- Trees to be retained with protection measures



1	EP	DC	MW	Planning Application Boundary changes	12/01/2022
0	SP	DC	MW	Initial Issue	28/02/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
TREE CONSTRAINTS AND ASSESSMENT PLAN
PAGE 5 OF 5

SCALE 1:2,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-006-005-AD1	REVISION 0

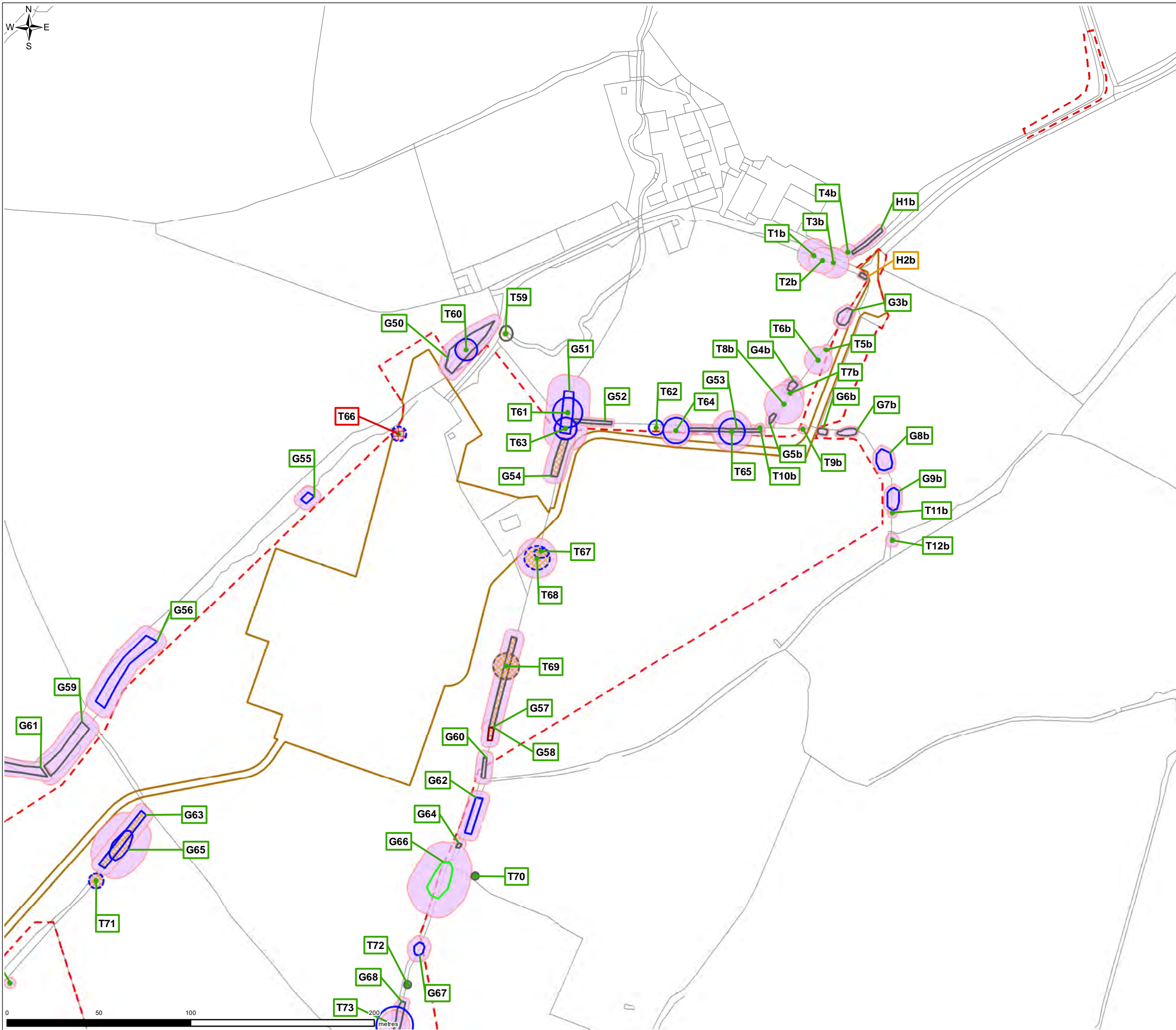


FIGURE 6.6

Notes
Tree survey features are prefixed with a 'T', 'G', 'H' or 'W' to identify respective feature type as an individual tree, tree group, hedgerow or woodland. Each survey feature is numbered sequentially from north to south for the full Proposed Programme of Works.
Plan to be viewed with corresponding AIA and used for planning purposes only. Indicative plan is not to be used for enabling works or construction purposes. Contractor to confirm with local planning authority all tree retention, protection and removal requirements prior to commencement of enabling works.
Indicative locations of survey features should be site-verified against a full topographical survey of existing stem locations at a later design stage prior to commencement of works.

Legend

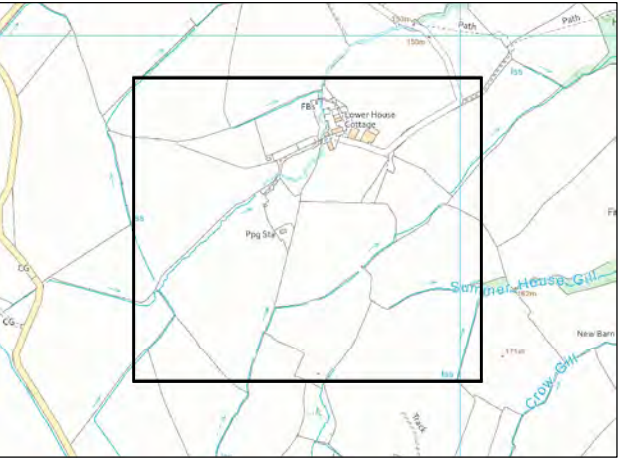
Proposed Core Working Area
[Orange outline]

Features to be Retained
[Green outline] Category A Feature
[Blue outline] Category B Feature
[Grey outline] Category C Feature
[Red outline] Category U Feature
[Pink fill] Root Protection Area

Features to be Removed
[Green cross-hatch] Category A Feature to be Removed
[Blue cross-hatch] Category B Feature to be Removed
[Grey cross-hatch] Category C Feature to be Removed
[Red cross-hatch] Category U Feature to be Removed

Features at Risk
[Green cross-hatch] Category A Feature at Risk
[Blue cross-hatch] Category B Feature at Risk
[Grey cross-hatch] Category C Feature at Risk
[Red cross-hatch] Category U Feature at Risk

RAG Assessment
[Red outline] Trees to be removed/partially removed
[Orange outline] Trees at risk of removal aiming to retain
[Green outline] Trees to be retained with protection measures



1	EP	DC	MW	Planning Application Boundary changes	12/01/2022
0	SP	DC	MW	Initial Issue	28/02/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PRELIMINARY TREES AT RISK PLAN
PAGE 1 OF 5

SCALE 1:2,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-006-006	REVISION 0

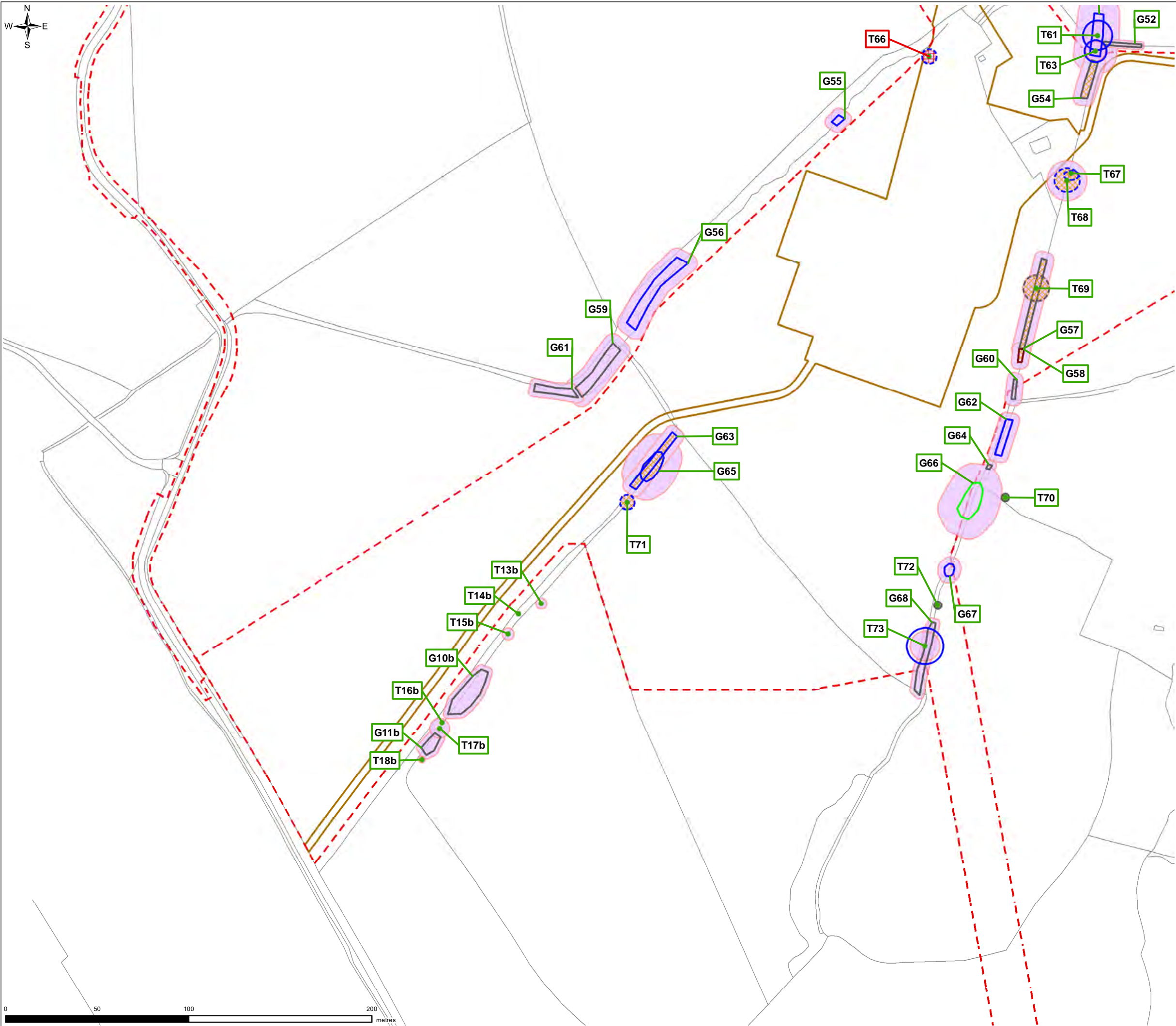


FIGURE 6.6

Notes
Tree survey features are prefixed with a 'T', 'G', 'H' or 'W' to identify respective feature type as an individual tree, tree group, hedgerow or woodland. Each survey feature is numbered sequentially from north to south for the full Proposed Programme of Works.
Plan to be viewed with corresponding AIA and used for planning purposes only. Indicative plan is not to be used for enabling works or construction purposes. Contractor to confirm with local planning authority all tree retention, protection and removal requirements prior to commencement of enabling works.
Indicative locations of survey features should be site-verified against a full topographical survey of existing stem locations at a later design stage prior to commencement of works.

Legend

Proposed Core Working Area
Area

Features to be Retained
Category A Feature
Category B Feature
Category C Feature
Category U Feature
Root Protection Area

Features at Risk
Category A Feature at Risk
Category B Feature at Risk
Category C Feature at Risk
Category U Feature at Risk

Features to be Removed
Category A Feature to be Removed
Category B Feature to be Removed
Category C Feature to be Removed
Category U Feature to be Removed

RAG Assessment
Trees to be removed/partially removed
Trees at risk of removal aiming to retain
Trees to be retained with protection measures



1	EP	DC	MW	Planning Application Boundary changes	12/01/2022
0	SP	DC	MW	Initial Issue	28/02/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PRELIMINARY TREES AT RISK PLAN
PAGE 2 OF 5

SCALE 1:2,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-006-006	REVISION 0



FIGURE 6.6

Notes
Tree survey features are prefixed with a 'T', 'G', 'H' or 'W' to identify respective feature type as an individual tree, tree group, hedgerow or woodland. Each survey feature is numbered sequentially from north to south for the full Proposed Programme of Works.
Plan to be viewed with corresponding AIA and used for planning purposes only. Indicative plan is not to be used for enabling works or construction purposes. Contractor to confirm with local planning authority all tree retention, protection and removal requirements prior to commencement of enabling works.
Indicative locations of survey features should be site-verified against a full topographical survey of existing stem locations at a later design stage prior to commencement of works.

Legend

Proposed Core Working Area

Features to be Retained

- Category A Feature
- Category B Feature
- Category C Feature
- Category U Feature
- Root Protection Area

Features at Risk

- Category A Feature at Risk
- Category B Feature at Risk
- Category C Feature at Risk
- Category U Feature at Risk

Features to be Removed

- Category A Feature to be Removed
- Category B Feature to be Removed
- Category C Feature to be Removed
- Category U Feature to be Removed

RAG Assessment

- Trees to be removed/partially removed
- Trees at risk of removal aiming to retain
- Trees to be retained with protection measures



1	EP	DC	MW	Planning Application Boundary changes	12/01/2022
0	SP	DC	MW	Initial Issue	28/02/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PRELIMINARY TREES AT RISK PLAN
PAGE 3 OF 5

SCALE 1:2,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-006-006	REVISION 0

FIGURE 6.6

Notes

Tree survey features are prefixed with a 'T', 'G', 'H' or 'W' to identify respective feature type as an individual tree, tree group, hedgerow or woodland. Each survey feature is numbered sequentially from north to south for the full Proposed Programme of Works.

Plan to be viewed with corresponding AIA and used for planning purposes only. Indicative plan is not to be used for enabling works or construction purposes. Contractor to confirm with local planning authority all tree retention, protection and removal requirements prior to commencement of enabling works.

Indicative locations of survey features should be site-verified against a full topographical survey of existing stem locations at a later design stage prior to commencement of works.

Legend

Proposed Core Working Area

Features to be Retained

- Category A Feature
- Category B Feature
- Category C Feature
- Category U Feature
- Root Protection Area

Features at Risk

- Category A Feature at Risk
- Category B Feature at Risk
- Category C Feature at Risk
- Category U Feature at Risk

Features to be Removed

- Category A Feature to be Removed
- Category B Feature to be Removed
- Category C Feature to be Removed
- Category U Feature to be Removed

RAG Assessment

- Trees to be removed/partially removed
- Trees at risk of removal aiming to retain
- Trees to be retained with protection measures

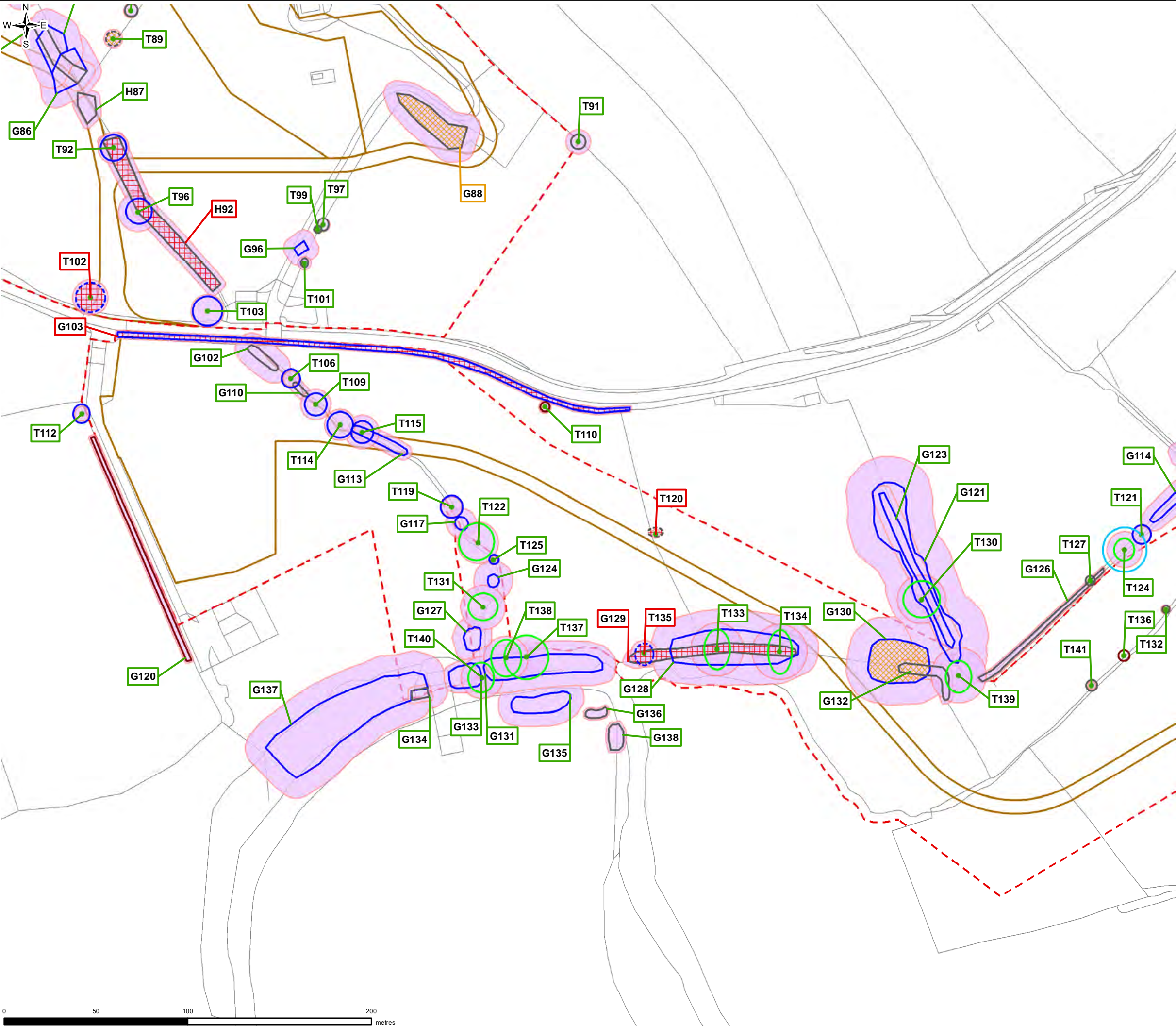


1	EP	DC	MW	Planning Application Boundary changes	12/01/2022
0	SP	DC	MW	Initial Issue	28/02/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PRELIMINARY TREES AT RISK PLAN
PAGE 4 OF 5

SCALE 1:2,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-006-006	REVISION 0



The copyright of this document, which contains information of a proprietary nature, is vested in United Utilities Water Limited. The content of this document may not be used for purposes other than that for which it has been supplied and may not be reproduced, either wholly or in part, in any way whatsoever. It may not be used by or its contents divulged to any other person whatsoever without the prior written permission of United Utilities Water Limited. Copyright Acknowledgement: Use of Ordnance Survey map data sanctioned by the controller of H.M. Stationery Office. OS Licence Number 100019326. Crown copyright reserved. Unauthorised production infringes copyright. © Crown copyright and database rights 2020 Ordnance Survey 0100031673. Contains public sector information licensed under the Open Government Licence v3.0. © Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020.

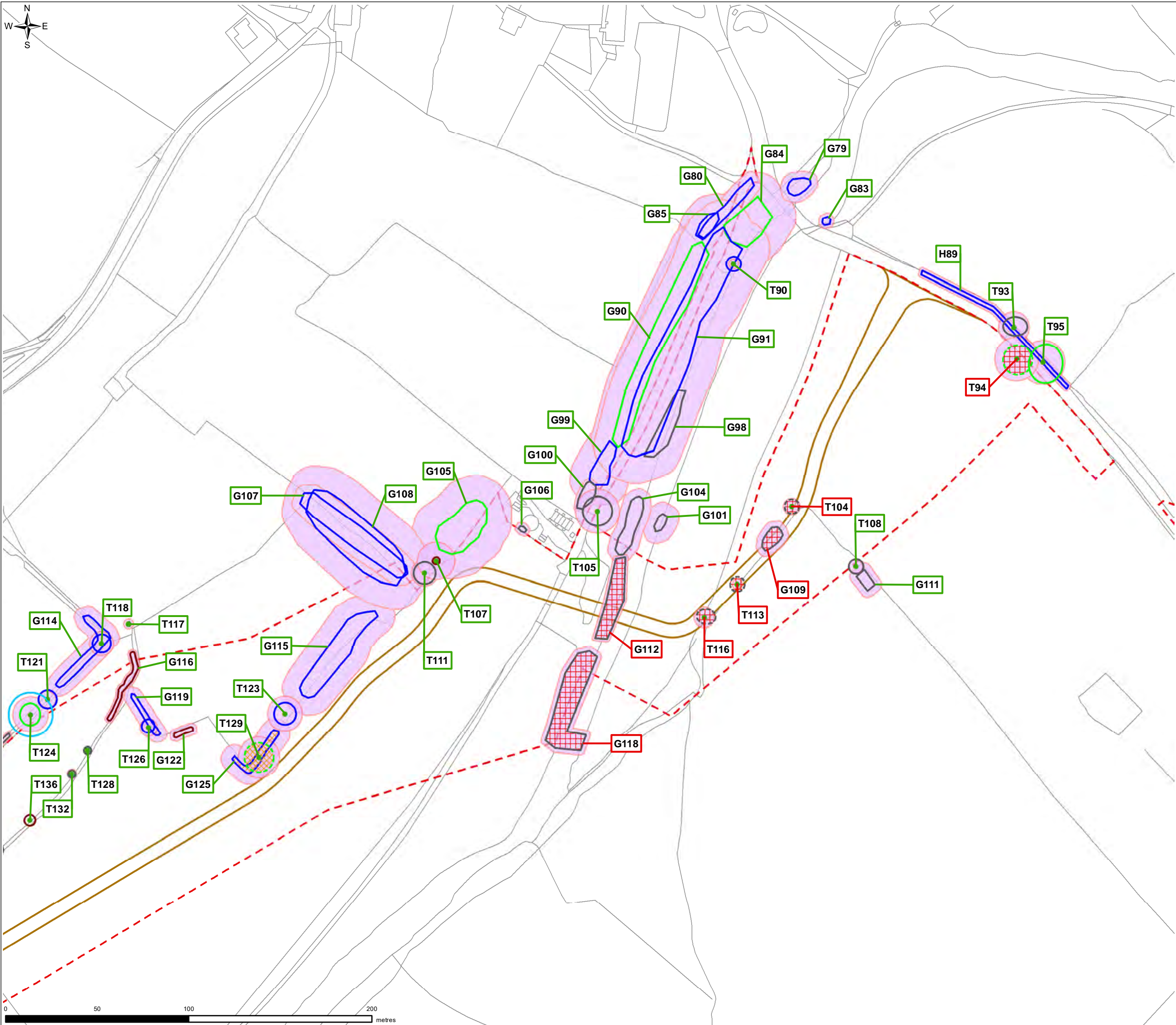


FIGURE 6.6

Notes
Tree survey features are prefixed with a 'T', 'G', 'H' or 'W' to identify respective feature type as an individual tree, tree group, hedgerow or woodland. Each survey feature is numbered sequentially from north to south for the full Proposed Programme of Works.
Plan to be viewed with corresponding AIA and used for planning purposes only. Indicative plan is not to be used for enabling works or construction purposes. Contractor to confirm with local planning authority all tree retention, protection and removal requirements prior to commencement of enabling works.
Indicative locations of survey features should be site-verified against a full topographical survey of existing stem locations at a later design stage prior to commencement of works.

Legend

Planning Application Boundary

Proposed Core Working Area

Features to be Retained

- Category A Feature
- Category B Feature
- Category C Feature
- Category U Feature
- Root Protection Area

Features at Risk

- Category A Feature at Risk
- Category B Feature at Risk
- Category C Feature at Risk
- Category U Feature at Risk

Features to be Removed

- Category A Feature to be Removed
- Category B Feature to be Removed
- Category C Feature to be Removed
- Category U Feature to be Removed

RAG Assessment

- Trees to be removed/partially removed
- Trees at risk of removal aiming to retain
- Trees to be retained with protection measures



1	EP	DC	MW	Planning Application Boundary changes	12/01/2022
0	SP	DC	MW	Initial Issue	28/02/2021
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE



UNITED UTILITIES WATER LIMITED
HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
PRELIMINARY TREES AT RISK PLAN
PAGE 5 OF 5

SCALE 1:2,000	SHEET SIZE A3
DRAWING NUMBER LCC_RVBC-BO-FIG-006-006	REVISION 0

The copyright of this document, which contains information of a proprietary nature, is vested in United Utilities Water Limited. The content of this document may not be used for purposes other than that for which it has been supplied and may not be reproduced, either wholly or in part, in any way whatsoever. It may not be used by or its contents divulged to any other person whatsoever without the prior written permission of United Utilities Water Limited. Copyright Acknowledgement: Use of Ordnance Survey map data sanctioned by the controller of H.M. Stationery Office. OS Licence Number 100019326. Crown copyright reserved. Unauthorised production infringes copyright. © Crown copyright and database rights 2020 Ordnance Survey 0100031673. Contains public sector information licensed under the Open Government Licence v3.0. © Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020.