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# Haweswater Aqueduct Resilience Programme Proposed Marl Hill Section

Chapter 9A - Appendix 9A.3

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**United Utilities**

Environmental Statement



Water for the North West



## Haweswater Aqueduct Resilience Programme

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### Appendix A. Hedgerow Survey Report

# 1. Hedgerows Technical Appendix

## 1.1 Introduction

- 1) TEP was appointed by United Utilities to complete an Ecological Impact Assessment (EclA) for the Haweswater Aqueduct Resilience Programme - Proposed Marl Hill Section. The EclA is required to inform an Environmental Impact Assessment (EIA) and support production of the Environmental Statement (ES).
- 2) A series of ecological surveys was undertaken to complete the EclA. This Appendix is one of a series of Ecological Technical Reports (ETRs) produced to support the EclA. This ETR documents the methods and findings of the Hedgerow Survey undertaken by Bowland Ecology.



## 1.2 Summary of Findings




- 3) A wider area was surveyed than will be potentially impacted by the proposed works within the Proposed Marl Hill Section. Consequently only some of the hedgerows surveyed and presented within the Hedgerows Survey Report (Appendix A) will be used to inform the EclA.
- 4) The hedgerows which fall within influencing distance of the proposed works, including those crossing or adjacent to the Proposed Marl Hill Section, which will be included within the EclA are:
  - Hedgerow TR4.H1 (intact species poor) – outside of Bonstone Compound but within 20m of compound access road to the south
  - Hedgerow TR4.H2 (intact species rich) – outside of Bonstone Compound but within 20m of compound access road to the south
  - Hedgerow TR4.H4 (intact species rich) – outside of Bonstone Compound but adjacent to the southern boundary
  - Hedgerow TR4.H5 (intact species poor) – northwest of Bonstone Compound
  - Hedgerow TR4.H12 (intact species poor) – eastern edge of Braddup Compound, along Slaidburn Road
- 5) Hedgerow TR4.H2 was classified as 'important' under the Hedgerow Regulations 1997.

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# Appendix A. Hedgerow Survey Report

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Ellen Milner, <i>Principal Ecologist</i> Alice Helyar, <i>Principal Ecologist</i>	Approved:	Claire Wilson, <i>Principal Ecologist</i> Eve Loxham, <i>Ecologist</i>
Report reference:	TR4 Hedgerow Survey Report V1 TR4 Hedgerow Survey Report V2	Date:	22/10/2019 19/06/2020
2 Project Drawings			
TR4 Hedgerow Plan 1 Proposed Marl Hill Section Sheets 1 to 3		BOW167_HARP_9.5_HEDGEROWS_TR4	
3 Ecology Surveys			
Surveyors:	Eve Loxham MBiolSci (Hons), GradCIEEM Mark Breaks BSc (Hons) Ellen Milner MA, MRes, CEnv, MCIEEM Sophie King MSc, BSc Catrin Watkin MRes, BSc (Hons) Abigail Hamer BSc (Hons)		
Survey date(s):	18/07/2019, 31/07/2019, 07/08/2019, 08/08/2019, 10/10/2019, 20/11/2019, 27/11/2019, 06/02/2020, 19/05/2020, 20/05/2020.		
Survey Method:	Hedgerows were assessed in accordance with The Hedgerow Regulations 1997. This report details all hedgerows currently identified in TR4, all of which have been subject to full assessment against the Hedgerow Regulations 1997.		
Weather Conditions:	18/07/2019 – Cloud cover (3/8), Wind Beaufort F3, 19 °C, no precipitation. 31/07/2019– Cloud cover (2/8), Wind Beaufort F2, 20 °C, no precipitation. 07/08/2019– Cloud cover 6/8, Wind Beaufort F3, 22°C, no precipitation. 08/08/2019– Cloud cover (2/8), Wind Beaufort F2, 20 °C, no precipitation. 10/10/2019– Cloud cover (7/8), Wind Beaufort F3-5, 11°C, no precipitation. 20/11/2019 – Cloud cover (5/8), Wind Beaufort F3, 5°C, no precipitation. 27/11/2019 – Cloud cover (4/8), Wind Beaufort F2, 10°C, no precipitation. 06/02/2020 – Cloud cover (4/8), Wind Beaufort F2, 6°C, light rain. 19/05/2020 – Cloud cover (3/8), Wind Beaufort F0-2, 14°C, no precipitation. 20/05/2020 - Cloud cover (0/8), Wind Beaufort F0-2, 20°C, no precipitation.		
Limitations to the survey:	Whilst some surveys were undertaken late in the season, which could mean that some ground flora species were missed, this was not considered to affect the assessment against The Hedgerow Regulations, as those hedgerows that classify as not 'Important' do so due to being less than 30 years in age, or have species poor canopies.  At the edge of access boundaries, surveys of hedgerows were only possible from one elevation. Once the development boundary/route option is finalised further survey may be required.		

4 Survey Results	
TR4.H1	
<p>The hedgerow is approximately 115 m long and 4 m in height. There are no gaps and one associated mature tree (alder (<i>Alnus glutinosa</i>)). There are no connections to other hedgerows. There is an associated ditch to the south of the hedgerow which was dry at the time of the survey. The canopy is dominated by hawthorn (<i>Crataegus monogyna</i>) and blackthorn (<i>Prunus spinosa</i>) with smaller amounts of holly (<i>Ilex aquifolium</i>) and willow (<i>Salix</i> sp.) (four woody species). The ground flora is grassy, with notable (Schedule 2) species of barren strawberry (<i>Potentilla sterilis</i>), primrose (<i>Primula vulgaris</i>) and common dog violet (<i>Viola riviniana</i>). Also noted within the ground flora were the additional species including great willowherb (<i>Epilobium hirsutum</i>), hoary willowherb (<i>Epilobium parviflorum</i>), hedge woundwort (<i>tachys sylvaticum</i>), St John's-wort (<i>Hypericum</i> sp.) and meadow vetchling (<i>Lathyrus pratensis</i>). The hedgerow appears less than 30 years in age and has a bank along at least half its length.</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present. The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.H2	
<p>The hedgerow is approximately 110 m long and 5 m in height. There are no gaps or associated ditch and there are two associated mature trees (ash and alder). There are no connections to other hedgerows. The canopy is dominated by hawthorn and blackthorn, with smaller amounts of holly and guelder rose (<i>Viburnum opulus</i>) (four woody species). There is a bank along at least half of the hedge. The ground flora contains notable (Schedule 2) species: herb Robert (<i>Geranium robertianum</i>) and wood sorrel (<i>Oxalis acetosella</i>). The hedgerow has been present for in excess of 30 years - tree guards were noted to be present where gaps have been filled in with replanting. The hedgerow is alongside a road.</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present. <b>The hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></p>	

TR4.H3	
<p>This hedgerow is approximately 85 m in length and 3 m in height. It has five associated mature trees (alder (<i>Alnus glutinosa</i>), beech (<i>Fagus sylvatica</i>) and pedunculate oak (<i>Quercus robur</i>)) and connections to three other hedgerows. There are no gaps and no associated ditch. The canopy is dominated by hawthorn and blackthorn, with field maple (<i>Acer campestre</i>), elder (<i>Sambucus nigra</i>) and sycamore (<i>Acer pseudoplatanus</i>) present, more rarely (four qualifying woody species). There are no notable (Schedule 2) ground flora species associated with the hedgerow base. The land occupier confirms this hedgerow is approximately 20 years old.</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present. The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.H4	
<p>This hedgerow is 145 m in length and approximately 3.5 m in height and is fenced to both sides. There is one associated mature trees (ash (<i>Fraxinus excelsior</i>)), no gaps and a dry ditch to the eastern side of the hedgerow. The canopy is dominated by hawthorn and blackthorn with field maple, hazel (<i>Corylus avellana</i>), holly, pedunculate oak, rose (<i>Rosa</i> sp.) and elder, noted more rarely (eight total woody species). No notable (Schedule 2) ground flora was present, but wild angelica (<i>Angelica sylvestris</i>) was noted. The land occupier confirmed this hedgerow is approximately 20 years old.</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present. The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.H5	
<p>This hedgerow is 50 m in length, approximately 1.5 m in height and 0.5 m wide. It has gaps making up 10% of the total length and has an associated wet ditch on the eastern side of the hedgerow. There are no associated mature standard trees. The canopy is exclusively composed of hawthorn (one woody species) and there is no notable (Schedule 2)</p>	



<p>ground flora species, being composed of coarse grasses and ruderal species such as common nettle (<i>Urtica dioica</i>). There are no connections to other hedgerows.</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present. The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>TR4.H6</p>	
<p>This hedgerow is 436 m in length, approximately 1 m high and 0.5 m wide. It has 10 gaps making up more than 10% of the total length and has an associated wet ditch on the eastern side of the hedgerow. There are no associated mature standard trees. The canopy is almost exclusively composed of hawthorn, with occasional gorse (<i>Ulex europaeus</i>) (two woody species) and there is no notable (Schedule 2) ground flora species, being composed of ruderal and scrub species such as bracken, foxglove (<i>Digitalis purpurea</i>) and bramble (<i>Rubus fruticosus</i>). There are no connections to other hedgerows and is considered to be less than 30 years old.</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present. The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>TR4.H7</p>	
<p>This hedgerow is 146 m in length, approximately 1 m high and 0.5 m wide. It has no gaps and has an associated wet ditch on the eastern side of the hedgerow. There is one associated mature standard tree (alder). The canopy is dominated by hawthorn, with rare blackthorn and alder (three woody species) and there is no notable (Schedule 2) ground flora species, being composed of coarse grasses, rushes and holly (<i>Ilex aquifolium</i>) saplings. There are no connections to other hedgerows and it is considered to be less than 30 years old.</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present. The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>TR4.H8</p>	

This hedgerow is 270 m in length, approximately 2.0-2.5 m in height and 1 m wide. It has four gaps making up 40% of the total length and has an associated dry ditch on the northern side of the hedgerow. There is one associated mature standard (alder) tree. The canopy is dominated by hawthorn, with rare blackthorn, rowan and gorse (four woody species) and there are no notable (Schedule 2) ground flora species, being composed of coarse grasses, rushes and foxglove. There are no connections to other hedgerows and it is less than 30 years old.

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

TR4.H9



This hedgerow is 125 m in length, approximately 2.0-2.5 m in height and 1 m wide. It has gaps making up 5% of the total length and has an associated wet ditch on the western side of the hedgerow. There is one associated mature standard tree (willow sp. (*Salix* sp.)). The canopy is dominated by hawthorn with rare blackthorn and gorse (three woody species) and there is no notable (Schedule 2) ground flora species, being composed of holly saplings, bramble, rushes, common herbs, coarse grasses and ruderal species such as rosebay willowherb (*Epilobium angustifolium*). There are no connections to other hedgerows and it is considered to be less than 30 years old.




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

TR4.H10



This hedgerow is 58 m in length, approximately 2.0-2.5 m in height and 1 m wide. It has no gaps and has an associated wet ditch on the northern and western side of the hedgerow. There are no associated mature standard trees. The canopy is almost exclusively composed of hawthorn, with rare holly (two woody species) and there is rare herb Robert (*Geranium robertianum*) within the ground flora species. The remainder of the ground flora is composed of foxglove and bramble. There are no connections to other hedgerows, although the hedgerow does connect to a small area of broadleaved woodland to the north-west. The hedgerow is considered to be less than 30 years old.

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

<p>TR4.H11</p>	
<p>This hedgerow is 198 m long, approximately 2.5 m high and 1 m wide. It has one gap that makes up less than 5% of the total length and has an associated dry ditch on the eastern side of the hedgerow. There are three associated mature standard holly trees. The canopy is dominated by hawthorn, with blackthorn and holly being abundant and broad buckler fern is a frequent notable (Schedule 2) ground flora species. The remaining ground flora is composed of coarse grasses, scrub and ruderal species such as bramble, creeping thistle and foxglove. There are no connections to other hedgerows.</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present. The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>TR4.H12</p>	
<p>This hedgerow is 100 m long, approximately 1 m high and 1 m wide. It has one gap that makes up less than 10% of the total length and there is no ditch or bank associated with the hedgerow. There is one associated mature standard ash tree. The canopy is dominated by hawthorn with rare hazel, beech and holly (four woody species, plus sycamore). There is no notable (Schedule 2) ground flora species, being composed of ivy, bramble, foxglove and honeysuckle. There are no connections to other hedgerows.</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present. The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>TR4.H13</p>	
<p>This hedgerow is 100 m long, approximately 2 m high and 1 m wide. It has no gaps and it has no associated ditch or bank features. There is one associated mature standard tree. The canopy is dominated by hawthorn, with frequent holly and rare blackthorn and gorse; there is no notable (Schedule 2) ground flora species, with soft rush being present. There are no connections to other hedgerows. The hedgerow is less than 30 years old.</p>	

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

#### 5 Hedgerow Summary

Overall the hedgerows within section TR4 are recent in origin, which is the main reason they do not classify as 'Important' under The Hedgerow Regulations 1997. The canopies are generally dominated by hawthorn, with a lower frequency of other native woody species, such as blackthorn and holly, with field maple, hazel, pedunculate oak, rose species, elder, willow species, guelder rose and sycamore noted more rarely. Ground flora diversity is limited, with barren strawberry, primrose, common dog violet, broad buckler fern and herb Robert the only species from Schedule 2 (The Hedgerow Regulations 1997) noted.

No invasive species were noted to be present within the hedgerows. The hedgerows provide bird nesting habitat and can provide commuting routes for bats. The bases of the hedgerows also provide a refuge for small mammals and amphibians. Some of the associated mature trees also have potential to support roosting bats (assessed separately).

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