Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

Environmental Statement

Volume 2

Chapter 1: Introduction

June 2021

Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

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1. Introduction

1.1 Overview

1) United Utilities Water Ltd. (United Utilities) is seeking planning consent for the Haweswater Aqueduct Resilience Programme (HARP), which is a proposal to replace 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. The Haweswater Aqueduct Resilience Programme is required to protect future water quality and provide a more resilient supply of clean drinking water.

2) United Utilities is a FTSE 100 company whose activities span the north-west region of England. The company abstracts water from a range of different sources, but predominantly from reservoirs in the Lake District and the Pennines, and also from Lake Vyrnwy in Wales. Of the 1,700 million litres (Ml) that are supplied to customers every day, well over half is from Cumbria and Wales. The two biggest reservoirs are Thirlmere and Haweswater in Cumbria. Haweswater typically holds more than 84,800 Ml of water – equivalent to around 33,900 Olympic-sized swimming pools. The remainder of customers' supplies is taken from rivers, boreholes and streams across the region.

3) HARP comprises a 'Proposed Programme of Works' involving the replacement of six tunnel sections which United Utilities is proposing to construct as five separate developments. These 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.[1]

4) Each development has been subject to Environmental Impact Assessment (EIA) in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations'). The findings of an EIA are reported in an Environmental Statement (ES), which is submitted with a planning application.

5) This ES presents the findings of the EIA for the Proposed Bowland Section, which is located within the local authority areas of Lancaster City Council and Ribble Valley Borough Council. A planning application will be submitted to both local planning authorities (LPA).

1.2 The Existing Haweswater Aqueduct

6) The existing 110 km Haweswater Aqueduct was designed in the 1930s, with construction completed in 1955. It takes raw water from Haweswater Reservoir in the Lake District National Park along a 16 km section of the aqueduct to a Water Treatment Works (WTW) near Kendal for treatment. From this WTW the aqueduct conveys treated water to customers in Greater Manchester, Cumbria and Lancashire via service reservoirs and water mains which branch off the main aqueduct.

7) The existing aqueduct comprises six single line tunnels and conduit sections (generally 2.6 m internal diameter), in addition to multi-line sections. The flow of water along the entire length of the aqueduct is achieved under the influence of gravity; there are no energy-consuming pumps involved in supplying the water from north to south. Out of the total 110 km length of the aqueduct, the Proposed Programme of Works on the single line sections accounts for just under half the distance (approximately 53 km).

[1] The existing Haslingden and Walmersley section of the Haweswater Aqueduct comprises two tunnels. The proposed replacement section would involve the construction of a single tunnel to replace the existing two structures.

1.3 The Need for Aqueduct Replacement

8) In the early 2000s United Utilities began planning major investment, to span over ten years, to ultimately enable the Haweswater Aqueduct to be taken temporarily out of service for the first time in over 60 years. The aim was to be able to inspect the aqueduct and identify any future service risk to customers supplied by this ageing asset.

9) To carry out a detailed inspection on the Haweswater Aqueduct, several major steps had to be taken including the £250 million construction of the West East Link Main (WELM), completed in 2011. The WELM, along with other activities such as upgrading Lostock Water Treatment Works to increase flow capacity, made it possible to take the Haweswater Aqueduct out of service (referred to as an outage) in 2013. A subsequent outage in 2016 allowed for more detailed investigations and some minor, targeted repairs.

10) The data collected from the inspections and investigations in 2013 and 2016 identified areas of concern in the single line tunnel sections of aqueduct, relating to both future water supply and water quality risks. It is anticipated that the condition of these single line sections will continue to deteriorate, and therefore a solution is required to address the risks to water supply and water quality. United Utilities considered a number of solutions to mitigate these risks, including repairs of the existing asset, and concluded that replacement of the single line sections was the best option.

11) The proposed solution is for the Proposed Programme of Works to provide a full replacement of the six single line tunnel sections, as illustrated in Figure 1.1. This work would require five separate replacement tunnel sections, as listed in Paragraph 3. The existing single line tunnel sections are connected via transition structures to multi-line siphons crossing several major valleys along the route. It is the intention to retain the existing multi-line siphons.

12) The need for the Proposed Bowland Section and the consideration of alternatives are explained in more detail in Chapter 3: Design Evolution and Development Description. An overview of the Proposed Bowland Section is provided in Figure 1.2.

1.4 EIA and Planning Approach for Multiple Developments

13) Each of the individual sections comprising the Proposed Programme of Works would provide additive benefits to the resilience of the overall system. As such, the Proposed Bowland Section would form a stand-alone project for the purposes of the assessment of likely significant environmental effects under the EIA regulations. Each of the other proposed sections have also been subject to EIA, and therefore in total five Environmental Statements have been prepared for HARP.

14) The Proposed Programme of Works covers seven LPA areas. One of the proposed replacement sections, Haslingden and Walmersley, extends over three local authority areas and a further two proposed sections, Bowland and Swarther, each extend over two local authority areas. In total, therefore, there will be nine separate planning applications supported by five ESs for the Proposed Programme of Works.

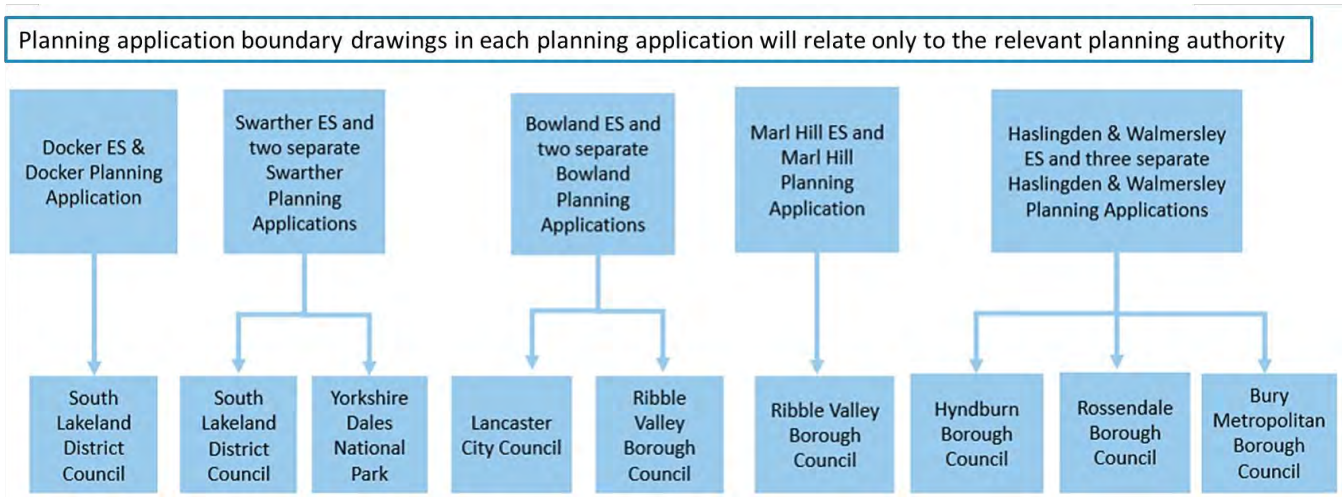
15) To ensure that all relevant likely significant effects are considered at an individual development and Proposed Programme of Works level, the following approach has been applied:

- Assessment of the Proposed Bowland Section
- Assessment of the cumulative effects of the Proposed Bowland Section in combination with the other four replacement sections
- Assessment of the Proposed Programme of Works in combination with other relevant, non-HARP proposed developments as agreed with the determining LPA.

16) The above approach has also been adopted for the EIAs of the other proposed sections. This not only supports a robust EIA process, but also allows the LPAs to understand the likely significant effects of the proposals, both at a local level and in the cumulative context of the overall Proposed Programme of Works. It will also assist and inform proposed consultation arrangements and support local engagement.

17) Illustration 1.1 summarises the proposed approach to submission of the ESs and planning applications to each of the seven planning authorities.

Illustration 1.1: Approach to ES and Planning Application Submissions



1.5 The Statutory Obligations of United Utilities

18) As a statutory water services undertaker, United Utilities serves its customers, operates and maintains its assets, and invests in new infrastructure within a strict regulatory framework. The Office of Water Services (Ofwat) is the statutory body responsible for economic regulation of the privatised water and sewerage industry in England and Wales.

19) The Drinking Water Inspectorate (DWI) is the independent drinking water regulator serving England and Wales. The DWI is responsible for ensuring that water companies supply safe drinking water that is acceptable to consumers and meets the relevant legal standards.

20) The Environment Agency, Natural England and other statutory bodies monitor the environmental performance of United Utilities, for example in relation to treated wastewater discharges to watercourses, water abstraction, and the management of designated wildlife habitats and species across its substantial landholdings in the north-west. Additionally, United Utilities, as one of the biggest landowners in the north-west, has representation on, or reports into many local non-statutory bodies with interests in the protection and enhancement of natural assets and community amenity.

1.6 The EIA Project Team

21) The EIA project team comprised Jacobs, Bowland Ecology, The Environment Partnership (TEP) and United Utilities' Civil Engineering, Planning, Landscape and Ecology specialists.

22) Bowland Ecology provided ecology expertise, TEP delivered arboricultural expertise, and Jacobs provided technical services for the other EIA topic areas. Design, programming and construction advice was provided by United Utilities and early contractor involvement (ECI) construction specialists.

23) Further specialist advisory services were procured by United Utilities to deliver archaeological field investigations (Ecus), Statements of Community Involvement (SoCI) (BECG), and ground-borne noise and vibration (Institute of Sound and Vibration Research at the University of Southampton).

24) The EIA was undertaken and managed by suitably qualified and experienced specialists. A list of key contributors and their qualifications is provided in Appendix 1.1.

25) Jacobs UK Ltd. is an Institute of Environmental Management and Assessment (IEMA) Registered EIA Quality Mark Company. Additional specialist environmental input was also provided to some technical components where appropriate, as identified within the relevant ES chapters.

26) Key stakeholders have been consulted with regard to the scope, approach and results of the assessments, as described in further detail in Chapter 4 EIA Methodology.

1.7 The Structure of the Environmental Statement

27) The structure of the ES for the Proposed Bowland Section has evolved over the duration of the EIA, partly in response to design changes following stakeholder feedback in later stages of the EIA programme. While much of the ES follows a common structure, it has also been necessary to add supplemental volumes for reasons explained below.

28) The ES is presented in six volumes:

- Volume 1: Non-Technical Summary
- Volume 2: Main ES text, including an assessment of the likely significant environmental effects of the Proposed Bowland Section and consideration of cumulative effects
- Volume 3: Figures associated with Volume 2
- Volume 4: Technical appendices and other reports supporting Volume 2
- Volume 5: Off-site highways and ancillary works[2]
- Volume 6: The Proposed Ribble Crossing.

1.7.1 Volume 1

29) The Non-Technical Summary (NTS) provides an easily readable summary of the ES. Schedule 4 of the EIA Regulations sets out the following information to be presented in the NTS:

- A summary in non-technical language of the Proposed Bowland Section and the reasonable alternatives studied
- The likely significant effects of the Proposed Bowland Section
- The means to avoid, prevent or reduce likely significant environmental effects
- An outline of the monitoring measures to manage the effects of construction and the effectiveness of mitigation post construction, as well as appropriate monitoring during operation.

1.7.2 Volume 2

30) Volume 2 comprises three main elements:

- Chapters 1 to 5 provide the preamble and background to the Proposed Bowland Section and the EIA process, and explain the regulatory and planning policy framework:
  - Chapter 1 (this chapter): forms the introduction to the ES
  - Chapter 2 (Environmental Context): presents a high-level overview of the natural and human environment within which the Proposed Bowland Section would be built
  - Chapter 3 (Design Evolution and Development Description): provides a full description of the design for the Proposed Bowland Section, as assessed and reported in this ES. This includes descriptions of the off-site highways works, off-site compounds and other ancillary facilities, transport routes, the Ribble Crossing, on-site enabling works, reinstatement proposals, and details of the operational tunnel. This chapter also explains the evolution of the design, including alternatives considered
  - Chapter 4 (EIA Methodology): describes the methodology for the EIA, providing details of how the requirements of the EIA Regulations have been addressed within the ES. This chapter also presents a summary of the consultation process which United Utilities has followed during the

[2] Off-site highways works in the context of the Proposed Bowland Section relate to works on or adjacent to the public highway to enable the safe passage of construction vehicles to and from the construction compounds. In some cases, these works may also include improvements to enable the safe manoeuvring of large vehicles through a junction or across a structure such as a road bridge. Ancillary works would comprise: a private car and light duty vehicle park-and-ride facility, and a construction vehicle holding area, both outside Clitheroe; a satellite compound in the Wray area also providing park and ride and construction vehicle holding facilities; and a temporary residents' parking area in Wray to assist with the movement of exceptional loads through the village.

course of HARP's development, including EIA Scoping, and how feedback from stakeholders has helped to shape and influence the EIA process

- Chapter 5 (Planning Policy and Context): summarises the local planning policy framework of Lancaster City Council and Ribble Valley Borough Council, which will inform the determination of the detailed planning applications for the Proposed Bowland Section

- Chapters 6 to 18 describe and assess the likely significant effects of the Proposed Bowland Section in relation to the following topics:
  - Chapter 6: Landscape and Arboriculture
  - Chapter 7: Water Environment
  - Chapter 8: Flood Risk
  - Chapter 9: Ecology
  - Chapter 10: Cultural Heritage
  - Chapter 11: Soils, Geology and Land Quality
  - Chapter 12: Materials and Waste
  - Chapter 13: Public Access and Recreation
  - Chapter 14: Communities and Health
  - Chapter 15: Major Accidents and Hazards
  - Chapter 16: Transport Planning
  - Chapter 17: Noise and Vibration
  - Chapter 18: Air Quality and Climate Change.

31) Chapters 19 to 21 seek to draw together the main findings of the ES, while also considering cumulative environmental effects:

- Chapter 19 examines the potential cumulative effects of the Proposed Bowland Section, considered in combination with the wider HARP Programme of Works, and also taking account of other anticipated major developments in the Lancaster City Council and Ribble Valley Borough Council areas. Chapter 19 also considers intra-development cumulative effects; this comprises an appraisal of likely significant effects reported in Volumes 2, 5 and 6
- Chapter 20 sets out the environmental mitigation commitments that are proposed to avoid, reduce or offset potential significant effects reported in the ES
- Chapter 21 provides a summary of the residual likely significant effects of the Proposed Bowland Section following the application of appropriate mitigation, as identified in Chapters 6-18 of the ES.

1.7.3 Volume 3 - Figures

32) Volume 3 of the ES provides figures, graphics and photographs, which are referenced as appropriate in the main text (Volume 2). The figure numbering corresponds to the ES chapter (e.g. Volume 2 Chapter 6 is supported by corresponding Figure 6.1, 6.2 etc. in Volume 3).

1.7.4 Volume 4 – Appendices

33) Volume 4 comprises the technical appendices which provide the detailed background information supporting the technical chapters contained in Volume 2. The appendix numbering corresponds to the ES chapter (e.g. Volume 2 Chapter 8 is supported by Appendix 8.1, 8.2 etc. in Volume 4).

1.7.5 Volume 5 – Off-site Highways Works

34) Consultations with Lancashire County Council and local communities, and further design development, also identified requirements for:

- Off-site highways works, comprising limited road widening and passing places at selected locations, in addition to junction and road bridge improvements, to facilitate the safe movement of construction vehicles on the local road network *en route* to the Newton-in-Bowland and Lower Houses compounds
- A Park and Ride facility in the Clitheroe area to assist in reducing the volume of vehicles heading north through Waddington towards the compound
- Provision for a Heavy Goods Vehicle (HGV) holding area near Clitheroe to facilitate construction traffic management and reduce vehicle movements at key times of the day, especially in connection with the movement of exceptional loads.

35) As the off-site highways works were developed at a late stage in the EIA programme, it was necessary to report these a separate volume (Volume 5). However, the cumulative and residual likely significant effects are considered alongside those from Volume 2 and Volume 6 in, respectively, Chapter 19 and Chapter 21.

1.7.6 Volume 6 – The Proposed Ribble Crossing[3]

36) Consultation feedback received from the highways authority (Lancashire County Council) and local stakeholders highlighted a desire to consider options for diverting construction vehicles away from residential areas in and around Clitheroe and nearby villages. This led to the development of the Ribble Crossing – a proposed dedicated haul route across agricultural land to the north of Clitheroe – to alleviate traffic impacts on local communities. Details of the Ribble Crossing are provided in Volume 6: Chapter 3: Design Evolution and Development Description. As this transport route solution arose at a late stage in the EIA programme, it was necessary to consider the likely significant environmental effects of the crossing within a separate volume of the ES (Volume 6). However, the cumulative and residual likely significant effects are considered alongside those from Volume 2 and Volume 5 in, respectively, Chapter 19 and Chapter 21.

1.8 How to Comment on the Environmental Statement

37) Any person wishing to make a representation on the ES should contact the Lancaster City Council or Ribble Valley Borough Council websites as appropriate.

38) The ES can be viewed on the Lancaster City Council and Ribble Valley Borough Council websites:

- https://planning.lancaster.gov.uk/online-applications/
- https://www.ribblevalley.gov.uk/planningApplication/search.

39) An interactive website that explains the Proposed Bowland Section and provides construction and environmental information can be accessed at:

- http://www.harpconsultation.co.uk.

[3] In the interests of completeness, Volume 6 is included in the Proposed Bowland Section planning application to Lancaster City Council. It should be noted, however, that the Proposed Ribble Crossing is located entirely in the administrative area of Ribble Valley Borough Council.