Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

Environmental Statement

Volume 2

Chapter 21: Summary of Significant Effects

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Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

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21. Summary of Significant Effects

21.1 Introduction

1) This chapter presents a short summary of the residual likely significant effects of the Proposed Bowland Section following the application of proposed mitigation (embedded, good practice and essential), as identified within Chapters 6-18 of the ES.

2) Table 21.1 below provides a summary of residual effects of 'Moderate' significance or above, which are those generally considered to be 'significant' in the context of the EIA Regulations. Significant effects are described in relation to the different phases of the Proposed Bowland Section (enabling works, construction, commissioning and operational), and considers the adverse effects.

3) The relevant ES chapters have been cross-referenced in Table 21.1 below. For a more detailed explanation of the significant effects please refer to the relevant chapter of the ES.

Table 21.1: Summary of Residual Significant Effects

ES chapter	Compound(s)	Phase	Commentary on Residual Significant Effects
Chapter 6: Landscape and Arboriculture	Lower Houses Compound and Newton-in-Bowland Compound	Enabling Works	▪ A noticeable and uncharacteristic change to a moderate proportion of the Upper Hodder Landscape Character Area (LCA) (Table 6.10) ▪ A noticeable and uncharacteristic change to a small proportion of the Bowland Gritstone Fringes LCA, Upper Hodder Valley LCA, Park House LCA and Hindburndale LCA (Table 6.10).
	Lower Houses Compound	Enabling Works	▪ A dominant and uncharacteristic change across a large proportion of the view (Table 6.11).
	Newton-in-Bowland Compound	Enabling Works	▪ A dominant and uncharacteristic change across a large proportion of the view (Table 6.12) ▪ A noticeable and uncharacteristic change across a moderate part of the view (Table 6.12).
	Lower Houses Compound and Newton-in-Bowland Compound	Construction Phase	▪ A substantial and uncharacteristic change to a large proportion of the Upper Hodder LCA (Table 6.13) ▪ A substantial and uncharacteristic change to a moderate proportion of the Bowland Gritstone Fringes LCA, Upper Hodder Valley LCA, Park House LCA and Hindburndale LCA (Table 6.13) ▪ A noticeable and uncharacteristic change to a moderate proportion of the North Bowland Valleys LCA, Goodber Common LCA, Bowland Limestone Fringes LCA (Table 6.13) ▪ A noticeable and uncharacteristic change to a small proportion of the Beatrix to Collyholme LCA and Central Bowland Fells LCA (Table 6.13)

ES chapter	Compound(s)	Phase	Commentary on Residual Significant Effects
			▪ A minor and uncharacteristic change to a moderate proportion of the North Bowland Fringes LCA and Tatham LCA(Table 6.13).
	Lower Houses Compound	Construction Phase	▪ A dominant and uncharacteristic change across a large proportion of the view (Table 6.14) ▪ A noticeable and uncharacteristic change across a moderate part of the view (Table 6.14).
	Newton-in-Bowland Compound	Construction Phase	▪ A dominant and uncharacteristic change across a large proportion of the view (Table 6.15) ▪ A noticeable and uncharacteristic change across a moderate part of the view (Table 6.15).
	Lower Houses Compound and Newton-in-Bowland Compound	Commissioning Phase	▪ A substantial and uncharacteristic change to a large proportion of the Upper Hodder LCA (Table 6.16) ▪ A substantial and uncharacteristic change to a moderate proportion of the Bowland Gritstone Fringes LCA, Upper Hodder Valley LCA, Park House LCA and Hindburndale LCA (Table 6.16) ▪ A noticeable and uncharacteristic change to a moderate proportion of the North Bowland Valleys LCA and Goodber Common LCA (Table 6.16) ▪ A minor and uncharacteristic change to a large proportion of the Newton and Birket LCA (Table 6.16) ▪ A noticeable and uncharacteristic change to a small proportion of the Beatrix to Collyholme LCA and Central Bowland Fells LCA (Table 6.16).
	Lower Houses Compound	Commissioning Phase	▪ A dominant and uncharacteristic change across a large proportion of the view (Table 6.17) ▪ A noticeable and uncharacteristic change across a moderate part of the view (Table 6.17).
	Newton-in-Bowland Compound	Commissioning Phase	▪ A dominant and uncharacteristic change across a large proportion of the view (Table 6.18) ▪ A noticeable and uncharacteristic change across a moderate part of the view (Table 6.18).

ES chapter	Compound(s)	Phase	Commentary on Residual Significant Effects
Chapter 7: Water Environment	Newton-in-Bowland Compound	Enabling Works	Fluvial Geomorphology and Surface Water Quality: ▪ Discharge of groundwater ingress from the decommissioned Haweswater Aqueduct into the River Hodder (Table 7.38).
	Newton-in-Bowland Compound	Enabling works	Groundwater: ▪ Changes to groundwater quality due to accidental spillages and ground disturbance from soil stripping and earthworks at River Hodder North Groundwater Dependent Terrestrial Ecosystem (Table 7.38).
	Newton-in-Bowland Compound	Enabling and construction works	Groundwater ▪ Interception of flows in short term at Gamble Hole Farm Pasture Groundwater Dependent Terrestrial Ecosystem (Table 7.38) ▪ Changes to groundwater quality due to accidental spillages and ground disturbance from soil stripping and earthworks at Gamble Hole Farm Pasture Groundwater Dependent Terrestrial Ecosystem (Table 7.38).
	Newton-in-Bowland Compound	Operation phase	Groundwater ▪ Interception of flows in long term, i.e. loss of aquifer storage at Gamble Hole Farm Pasture Groundwater Dependent Terrestrial Ecosystem (Table 7.38).
Chapter 8: Flood Risk	No residual significant effects		
Chapter 9A: Ecology – Terrestrial	Newton-in-Bowland Compound	Enabling Works	▪ A temporary loss of 0.04 ha of fen habitat from within Gamble Hole Farm Pastures BHS (Table 9A.11)
	Newton-in-Bowland Compound	Construction Phase	▪ Compaction of fen habitat within Gamble Hole Farm Pastures BHS (Table 9A.11) ▪ Compaction of fen and flush habitat outside of Gamble Hole Farm Pastures BHS (Table 9A.11).
	Off-Site Highways	Enabling Works	▪ Permanent loss of road verge habitat within Waddington Fell Roadside Verges BHS (Vol. 5 Part II) ▪ Permanent loss of trees and woodland to TR3 and TR4 road widening ▪ Potential degradation of GWDTE habitats within Bradford Fell, Easington Fell & Harrop Fell BHS (Vol. 5 Part II) as a result of TR4 road widening.
Chapter 9B:	No residual significant effects		

ES chapter	Compound(s)	Phase	Commentary on Residual Significant Effects
Ecology – Aquatic			
Chapter 10: Cultural Heritage	Lower Houses Compound and Newton-in-Bowland Compound	Construction Phase	Likely significant effect on Waddington Conservation Area due to volume and duration of construction vehicle movements during construction phase.
Chapter 11: Soils, Geology and Land Quality	No residual significant effects.		
Chapter 12: Materials and Waste	No residual significant effects.		
Chapter 13: Public Access and Recreation	No residual significant effects.		
Chapter 14: Communities and Health	Construction traffic routes	Construction Phase	For communities outside of the Local Community Assessment Area located on construction traffic routes, the nature, duration and volume of traffic has the potential to give rise to significant disturbance effects.
Chapter 15: Major Accidents	No residual significant effects.		
Chapter 16: Transport Planning	No residual significant effects.		
Chapter 17: Noise and Vibration	No residual significant effects.		
Chapter 18: Air Quality	No residual significant effects.		
Chapter 19: Cumulative Effects	**Landscape and Arboriculture** ▪ Taking account of the sensitivity of the landscape (especially its AONB status), the dispersed landscape and visual effects associated with the highways works for the Proposed Bowland Section, and the potential for cumulative effects with other elements of the Proposed Bowland Section, cumulative landscape and visual effects are judged to be 'significant' in the context of the EIA Regulations ▪ Taking account of the number of trees and tree groups potentially affected by the off-site highways proposals, the number of trees within this total regarded as 'notable', and their general contribution to landscape quality adjacent to and within nationally designated landscapes, cumulative effects on arboricultural resources are judged to be 'significant' in the context of the EIA Regulations.		

ES chapter	Compound(s)	Phase	Commentary on Residual Significant Effects
	Communities ▪ United Utilities recognises that during the enabling works and construction phase, some villages and local residential areas would experience disturbance. Disturbance would arise mainly from the movement of heavy goods vehicles through settlements and past individual properties fronting onto the highway. A degree of disturbance is an unavoidable consequence of constructing a major infrastructure project. Some of the community disturbance may be short-term and reversible, while other disturbance could extend into and throughout the duration of the construction phase ▪ While the disturbance would centre on HGV movements other, less significant, effects may combine to also influence levels of disturbance – this is reported in Chapter 14: Communities and Health ▪ Depending on the final transport route solutions through and around the Clitheroe area (refer to Volume 2 Chapter 3), there is potential for disturbance effects in settlements such as Chatburn, Grindleton, West Bradford and Waddington, as well as Clitheroe. These locations would experience significantly higher HGV movements serving the TBM launch compound (Newton-in-Bowland) throughout the construction period compared with the north end of the Proposed Bowland Section where fewer vehicles are required to serve the reception compound (Lower Houses).		
Volume 5 – Offsite Highways	Offsite Highways Works are presented in Volume 5. ▪ The majority of likely significant effects relate to Landscape and Arboriculture. Visual effects may be significant during construction, operation and reinstatement works due to the potential loss of trees, tree groups and other vegetation together with other features such as dry stone walls and fences. However, these effects are deemed to be of relatively short duration and would be mitigated by the replacement planting and reinstatement of permanent features. The removal of any mature trees would result in a longer term impact. However, an arboricultural method statement would assess the impact to individual trees and detail protection measures. A total of 21 tree and hedgerow features could be removed and 36 features partially removed ▪ Permanent tree and woodland losses associated with road widening locations would be significant adverse at the local level. It may be possible to reduce these effects to not significant if detailed design can reduce losses and/or agreements for localised replanting can be reached. Any habitat losses would be offset through the commitment to 10% BNG. ▪ Some disturbance to local communities would arise mainly from the movement of heavy goods vehicles through settlements and past individual properties fronting onto the highway. A degree of this disturbance is an unavoidable consequence of constructing a major infrastructure project. Some of the community disturbance would be short-term and reversible, while other disturbance may continue throughout the duration of the construction programme ▪ In some community areas, however, it may not be possible to fully eliminate adverse disturbance effects due to the scale of construction operations and associated vehicle movements. A precautionary position is therefore adopted in recognition of the nature, scope and duration of these adverse effects as it is anticipated that some communities would experience a disturbance effect that is significant in the context of the EIA Regulations.		
Volume 6 – Proposed Ribble Crossing Likely significant effects for the Proposed Ribble Crossing are presented in Volume 6 of the Environmental Statement. Following the application of proposed mitigation (embedded, good practice and topic-specific essential), as identified in Volume 6, likely significant effects remain for the following chapters below.			

ES chapter	Compound(s)	Phase	Commentary on Residual Significant Effects
Chapter 6: Landscape and Arboriculture	Proposed Ribble Crossing	Enabling Works	▪ A noticeable and uncharacteristic change to a small proportion of the Lower Hodder and Loud Valley LCA, Lower Ribble Valley LCA, Bolton by Bowland to Waddington LCA and Ribble LCA (Table 6.4) ▪ A noticeable and uncharacteristic change to across a large or moderate part of the view (Table 6.5).
	Proposed Ribble Crossing	Construction Phase	▪ A substantial and uncharacteristic change to a small proportion of the Lower Hodder and Loud Valley LCA, Lower Ribble Valley LCA, Bolton by Bowland to Waddington LCA and Ribble LCA (Table 6.6) ▪ A dominant or noticeable and uncharacteristic change to across a large or moderate part of the view (Table 6.7) ▪ A noticeable or perceptible and uncharacteristic change across a moderate part of the view (Table 6.7).
	Proposed Ribble Crossing	Operation Phase	▪ A noticeable and uncharacteristic change to a small proportion of the Lower Hodder and Loud Valley LCA, Lower Ribble Valley LCA, Bolton by Bowland to Waddington LCA and Ribble LCA (Table 6.8) ▪ A dominant or noticeable and uncharacteristic change to across a large or moderate part of the view (Table 6.9) ▪ A noticeable and uncharacteristic change across a moderate part of the view (Table 6.9).
	Proposed Ribble Crossing	Decommissioning Phase	▪ A noticeable and uncharacteristic change to a small proportion of the Lower Hodder and Loud Valley LCA, Lower Ribble Valley LCA, Bolton by Bowland to Waddington LCA and Ribble LCA (Table 6.10) ▪ A dominant or noticeable and uncharacteristic change to across a large or moderate part of the view (Table 6.11) ▪ A noticeable or perceptible and uncharacteristic change across a moderate part of the view. (Table 6.11).