



**Haweswater Aqueduct Resilience Programme - Proposed Bowland
Section**

Environmental Statement

Volume 2

Chapter 19: Cumulative Effects

June 2021



Water for the North West



Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

Project No: B27070CT
Document Title: Proposed Bowland Section Environmental Statement
Volume 2 Chapter 19: Cumulative Effects
Document Ref.: LCC_RVBC_BO_ES_019
Revision: 0
Date: June 2021
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19. Cumulative Effects

19.1 Introduction

- 1) This chapter presents an assessment of the potential for likely significant cumulative effects of the Proposed Bowland Section. Part 1 of Schedule 4¹ of the EIA Regulations requires consideration of the cumulative effects of a development. IEMA (2011) notes that impacts can act together in an additive and/or synergistic manner to result in cumulative effects, i.e. impacts may overlap or act in combination with each other, leading to more significant environmental effects than if the impacts were considered in isolation.
- 2) Within this ES two types of cumulative effect have been considered:
 - *Intra-project effects*: when a resource or receptor is affected by more than one type of environmental impact from the same development. For example, a local community may be subject to air quality, noise, severance and visual impacts, as indicated in Illustration 19.1
 - *Inter-project effects*: when an environmental resource or receptor is affected by more than one developments. For example, several separate developments within the same area could lead to more a significant surplus of material arisings than if the developments were considered in isolation, as indicated in Illustration 19.2.

Illustration 19.1: Intra-Project Effects

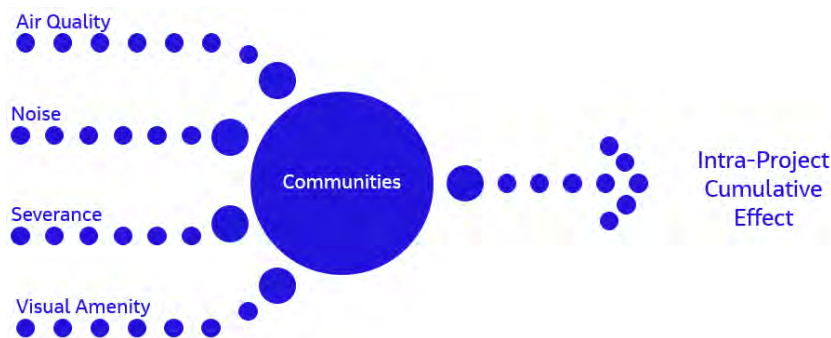
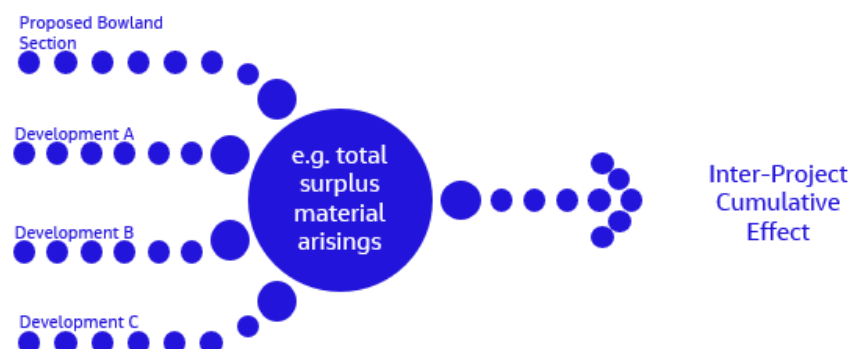


Illustration 19.2: Inter-Project Effects



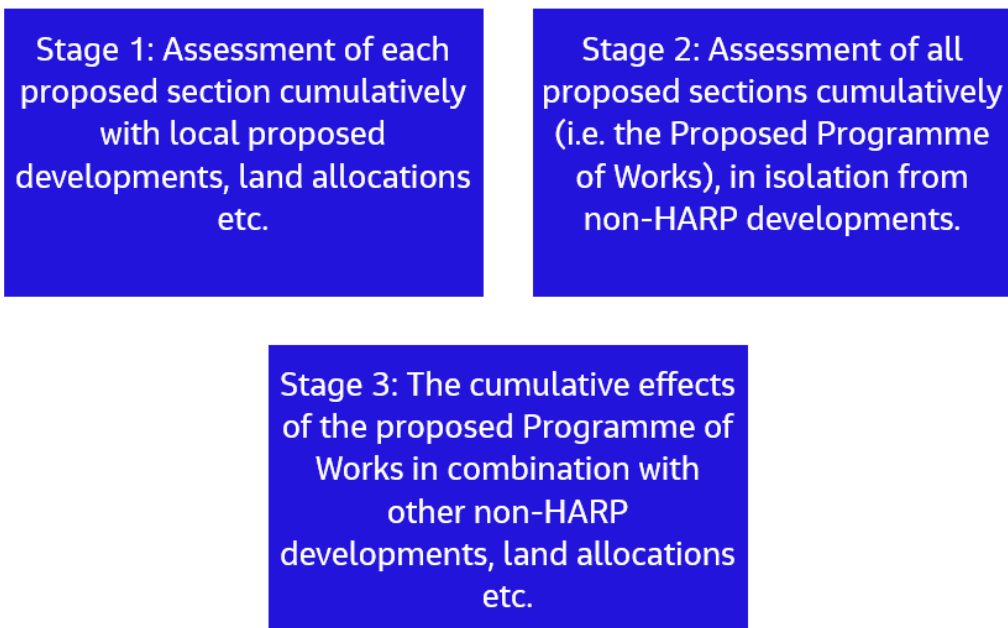
- 3) Intra-project effects (i.e. the cumulation of effects associated with the Proposed Bowland Section on individual communities or receptor groups) have been addressed within the scope of Chapter 14: Communities and Health. Chapter 14 considers the disturbance effects due to combinations of any two

¹ The Town and Country Planning (Environmental Impact Assessment) Regulations (2017)

or more visual, traffic, air quality and noise effects coinciding at a particular location or receptor) which have the potential to deter users from, or affect the functioning of, that location or receptor. The assessment of disturbance effects considers community receptors within four community areas: Newton-in-Bowland, Tatham, Roeburndale and Wray with Botton. Intra-project effects are therefore not considered further in this chapter.

- 4) Inter-project effects (i.e. the effects associated with the Proposed Bowland Section in combination with other proposed developments, including wider the Programme of Works) have been examined through one of several stages, as summarised in Illustration 19.3.

Illustration 19.3: Stages of Intra-Project Cumulative Assessment



- 5) Stage 1 of inter-project effects assessment as indicated in Illustration 19.3 (i.e. the Proposed Bowland Section in combination with other local proposed developments) has been addressed within the topic chapters of this ES (Chapters 6-18), and the findings are therefore not repeated in this chapter. However, this chapter does provide a cross-referencing table to confirm which local proposed developments are considered by Chapters 6-18. This chapter also provides information regarding scoping and consultation approaches (Section 19.2), key guidance which informed the cumulative assessment process (Section 19.3), and methodology including details of which local developments were included in the assessment (Section 19.4).
- 6) Stage 2 and Stage 3 of inter-project effects assessment as indicated in Illustration 19.3 relate to the wider Proposed Programme of Works, and are reported in this chapter.

19.2 Scoping and Consultations

19.2.1 Scoping

- 7) A cumulative effects chapter was included within the EIA Scoping Report, which was submitted to the relevant planning authorities for comment in October 2019, followed by a Scoping Addendum in February 2021 due to design changes and refinements. Scoping Report responses were provided by each of the local authorities and these have been reviewed and incorporated into the assessment. Scoping comments and responses are outlined in Appendix 4.1.
- 8) On the particular topic of cumulative assessment, United Utilities wrote in 2020 to each of the local planning authorities (LPAs) in which HARP is located to explain the proposed approach. This proposed approach corresponds with the stages outlined in Illustration 19.3 above, and was developed to comply with the EIA Regulations.

19.2.2 Consultation

- 9) Consultation in relation to cumulative effects has focused on input from Ribble Valley Borough Council, which advised United Utilities of proposed developments in the area of the Proposed Bowland Section that should be considered in the assessment.

19.3 Key Legislation and Guidance

- 10) There is no legislation specific to cumulative effects, and there are no statutory protocols for undertaking cumulative assessment. However, most assessments are based on industry good practice combined with guidance from government and other organisations. Table 19.1 introduces relevant cumulative effects guidance. The table is not intended to be exhaustive but to provide an indication of the variables taken into account when considering cumulative effects.

Table 19.1: Cumulative Effects Guidance

Applicable Legislation/Guidance	Description
European Commission, Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, 1999	This guidance describes some of the approaches that can be used in scoping and identifying impacts and then in evaluating the effects. Scoping and impact identification techniques identify how and where interactions of effects would occur, while evaluation techniques describe the magnitude and significance of impacts based on their context and intensity.
Ministry of Housing, Communities and Local Government, National Planning Policy Framework, February 2019	The guidance describes approaches to some environmental topics including highways: <i>'in the context of the Framework – and in particular the presumption in favour of sustainable development – arguments that an application is premature are unlikely to justify a refusal of planning permission other than in the limited circumstances where ... the development proposed is so substantial, or its cumulative effect would be so significant, that to grant permission would undermine the plan-making process by predetermining decisions about the scale, location or phasing of new development that are central to an emerging plan...'</i>
Design Manual for Roads and Bridges ("DMRB") Volume 11, Section 2, Part 5 (Ref 16-1)	DMRB identifies two types of cumulative impact: <i>'a) the combined action of different environmental topic-specific impacts upon a single resource/receptor, which are termed "in combination" effects; and b) the combined action of a number of different projects, cumulatively with the project being assessed, on a single resource/receptor, which are termed "cumulative" effects. This can include multiple impacts of the same or similar type from a number of projects upon the same receptor/resource.'</i>

19.4 Assessment Methodology

19.4.1 Stage 1 Inter-Project Effects (Local)

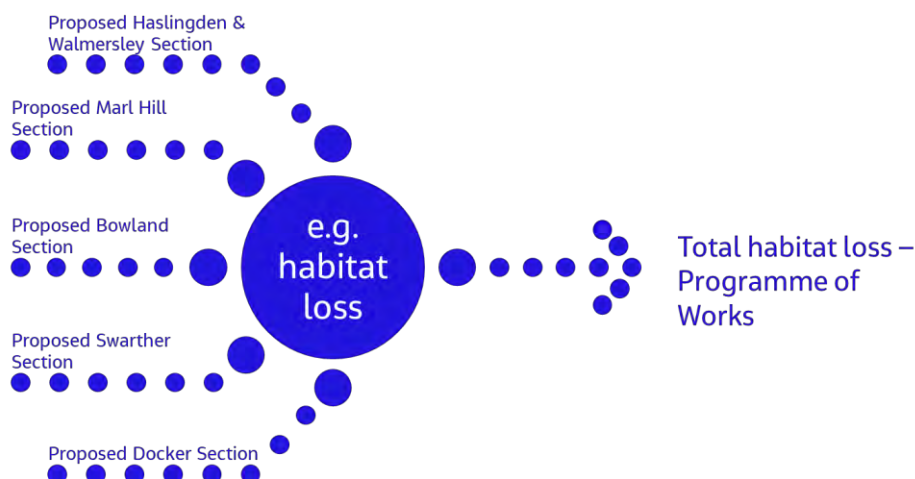
- 11) The Stage 1 inter-project cumulative effects assessment considered relevant proposed developments and development plan land allocations within 5 km of the Proposed Bowland Section.
- 12) As noted in Section 19.2, proposed developments and development plan land allocations to be included in the assessment were agreed through scoping and consultation with the LPAs. LPAs provided a list of planning application data in May 2020 which formed a 'long list' of potential developments for further consideration by each of the EIA disciplines. The original search was updated prior to a cut-off date in January 2021. Figure 19.1 identifies proposed local developments and land allocations that entered the cumulative assessment process.

- 13) The long list was made available to all technical disciplines who then exercised professional judgement in determining which proposed local developments might reasonably and foreseeably act cumulatively with their respective areas of interest. The proposed third-party developments and LPA land allocations selected from the long list differed from discipline to discipline, but in all cases only likely significant cumulative effects were considered. Non-significant potential cumulative effects were taken no further.
- 14) For each development or land allocation, consideration was given to the anticipated programme. In some cases, professional judgement was applied to establish likely development parameters and environmental effects.

19.4.2 Stage 2 Inter-Project Effects (Proposed Programme of Works)

- 15) As explained in Chapter 1: Introduction, the Proposed Bowland Section is one of five separate developments forming the overall Haweswater Aqueduct Resilience Programme, referred to as the Proposed Programme of Works. The Stage 2 inter-project cumulative effects assessment therefore examined the effects of the Proposed Bowland Section in combination with each the following HARP developments (sections):
 - Proposed Docker Section
 - Proposed Swarther Section
 - Proposed Marl Hill Section
 - Proposed Haslingden and Walmersley Section.
- 16) Although the above sections are generally too geographically distinct from each other to result in cumulative inter-project effects with the Proposed Bowland Section at a local scale² (covered in Chapters 6-18), this chapter considers a wider regional context to encompass all five sections of the Proposed Programme of Works together.
- 17) Illustration 19.4 presents the principle of how cumulative effects were addressed across all five proposed sections of HARP.

Illustration 19.4: Approach to Cumulative Effects for the Proposed Programme of Works



- 18) To consider the effects of local proposed development construction traffic movements for the Stage 2 inter-project assessment, likely trip generation on the local and strategic road network was quantified where possible. Publicly available information was assigned to the anticipated 2024 peak construction period of the Proposed Bowland Section. Assessments of baseline traffic network conditions incorporate committed local developments, and other development proposals in the planning system or adopted

² Refer to Chapter 6: Landscape and Arboriculture for details of cumulative landscape and visual effects between the proposed Newton-in-Bowland compound (Proposed Bowland Section) and the proposed Bonstone compound (Proposed Marl Hill Section).

plans that have the potential to coincide with the relevant assessment periods of the Proposed Programme of Works. As such, any potential cumulative traffic effects are already incorporated within the traffic modelling undertaken as part of the Transport Assessment (Appendix 16.1).

- 19) Trip generation and distribution assumptions were obtained from documents published on the websites of Craven District Council, Lancaster City Council, Lancashire County Council, Ribble Valley Borough Council and South Ribble Borough Council. This process is considered to be robust as it quantifies proposed developments on top of the background growth that is derived from growth rates obtained from TEMPro³.

19.4.3 Stage 3 Inter-Project Effects (Proposed Programme of Works and other developments)

- 20) A review was undertaken of all 'long 'list' proposed developments along all proposed sections of the Proposed Programme of Works to consider their scope, extent, and potential to result in adverse effects. The developments were considered in combination with the Proposed Programme of Works at a regional level, to determine whether there was potential for additional cumulative effects, over and above the likely significant environmental effects already described in the ES.

19.5 Assessment of Likely Significant Cumulative Effects

19.5.1 Stage 1 Inter-Project Effects (Local)

- 21) Each topic chapter of the ES (Chapters 6 to 18) has a section prior to the conclusion section which considers the potential for inter-project cumulative effects specific to its topic (e.g. Chapter 10 considers the potential for the Cultural Heritage effects of the Proposed Bowland Section to act in combination with the Cultural Heritage effects of the other developments).
- 22) Table 19.2 presents a list of the proposed local developments that were selected from the long list for further consideration in the respective topic chapters of the ES, grouped according to local authority.

Table 19.2: Local Developments Adopted in the Stage 1 Inter-Project Assessment

Proposed Development	Where Stage 1 assessment is undertaken in the ES
Ribble Valley Borough Council	
Planning application: Ribble Valley Borough Council Ref: 3/2018/0914 Erection of 188 new dwellings including means of access and associated works. To include 57 affordable dwellings (29 affordable rent and 28 shared ownership)	Chapter 16: Transport Planning
Planning application: Ribble Valley Borough Council Ref: 3/2020/0275 United Utilities Hodder Works. Improved treatment including construction of rapid gravity filters and associated building, security fencing together with re-profiling of agricultural land using surplus soil	Chapter 9A: Terrestrial Ecology
Lancashire County Council	
Planning application: Lancashire County Council Ref: LCC/2019/0008	Chapter 16: Transport Planning

³ Trip End Model Presentation Program (TEMPro) [Online] Available from <https://www.gov.uk/government/publications/tempro-downloads> [Accessed: January 2021]

Proposed Development	Where Stage 1 assessment is undertaken in the ES
<p>Demolition of existing caretakers' house to provide 8 car parking spaces with lighting and bin store area. Demolition of Block D building and erection of a single storey building to provide a multi-functional activity studio. Erection of a double storey extension to existing Block G building to provide ten classrooms. Resizing of existing multi use games area with erection of 3 m high ball stop fence. Creation of a new pedestrian entrance and widening of existing vehicular entrance on Turner Street. Erection of 2.4 m high weldmesh fencing along northern boundary and south eastern corner of the school site.</p>	
<p>Planning application: Lancashire County Council Ref: LCC/2018/0060 Variation of condition 1 of planning permission 3/97/636 to extend the mining operations until 31 December 2033 with completed restoration by 31 December 2034</p>	Chapter 9A: Terrestrial Ecology
<p>Planning application: Lancashire County Council Ref: LCC/2021/0015 Waddington Fell Quarry Revised and Enhanced Quarry Restoration Scheme incorporating tunnel arisings from the Haweswater Aqueduct Resilience Programme (HARP) namely the Bowland and Marl Hill Sections</p>	Chapter 9A: Terrestrial Ecology
Craven District Council	
<p>Planning application: Craven District Council Ref: 2020/21363/OUT Allocation Ref: LB012 Outline application with all matters reserved (except for access), for 18 dwellings</p>	Chapter 9A: Terrestrial Ecology
<p>Planning application: Craven District Council Ref: 08/2017/17887 Demolition of existing dwelling and industrial unit and erection of a residential development of 16 dwellings Allocation Ref: HB038 19 dwellings</p>	Chapter 9A: Terrestrial Ecology
<p>Housing Allocation Craven District Council Ref: HB023 53 dwellings</p>	Chapter 9A: Terrestrial Ecology
<p>Housing Allocation Craven District Council Ref: HB044 61 dwellings</p>	Chapter 9A: Terrestrial Ecology
<p>Housing Allocation Craven District Council Ref: HB052 118 dwellings</p>	Chapter 9A: Terrestrial Ecology
<p>Housing Allocation</p>	Chapter 9A: Terrestrial Ecology

Proposed Development	Where Stage 1 assessment is undertaken in the ES
Craven District Council Ref: HB024 29 dwellings	
Planning application: Craven District Council Ref: 2017/18715/FUL Residential development for extra care housing comprising 64 apartments and 8 bungalows including associated parking, landscaping and formation of new access off Robin Lane Allocation Ref: HB011 72 dwellings	Chapter 9A: Terrestrial Ecology
Housing Allocation Craven District Council Ref: HB025 32 dwellings	Chapter 9A: Terrestrial Ecology
Housing Allocation Craven District Council Ref: HB026 82 dwellings	Chapter 9A: Terrestrial Ecology
Planning application: Craven District Council Ref: 2017/18792/FUL Change of use of land for the siting of 8 holiday lodges at the Bentham Golf Club	Chapter 9A: Terrestrial Ecology
Lancaster City Council	
Policy H1: Housing Development Lancaster City Council Allocation Ref: WR5 Hoskins Farm 15 dwellings	Chapter 9A: Terrestrial Ecology

19.5.2 Stage 2 Inter-Project Effects (Programme of Works)

- 23) The proposed sections of the Proposed Programme of Works are located in separate, geographically distinct areas. There are notable separation distances between the sections in most cases, and very limited scope for adverse effects to extend beyond the local assessment areas described in the topic chapters (for example, noise disturbance would not act cumulatively across different sections).
- 24) However, to ensure a complete and robust consideration of cumulative effects, this chapter considers a wider regional context to encompass all five sections of the Proposed Programme of Works together. A review of those topics likely to give rise to notable cumulative effects at a regional level highlighted biodiversity loss, surplus materials, construction vehicle movements, and tree loss.
- 25) Table 19.3 summarises the predicted cumulative effects of the overall Proposed Programme of Works.

Table 19.3: Inter-Project Cumulative Effects, United Utilities Developments

Proposed Development	Topic Area	Cumulative Effects Assessment
Proposed Programme of Works: <ul style="list-style-type: none"> ▪ Proposed Docker Section ▪ Proposed Swarther Section 	Biodiversity Loss	The combined potential habitat loss across the Proposed Programme of Works is expected to be over 150 hectares, including: <ul style="list-style-type: none"> ▪ 17.3 ha of semi-improved neutral grassland ▪ 5.5 ha of marsh/marshy grassland ▪ 4.8 ha of young broad-leaved plantation woodland

Proposed Development	Topic Area	Cumulative Effects Assessment
<ul style="list-style-type: none"> ▪ Proposed Bowland Section ▪ Proposed Marl Hill Section ▪ Proposed Haslingden and Walmersley Section. 		<ul style="list-style-type: none"> ▪ 2.8 ha of semi-improved acid grassland ▪ 2.3 ha of fen. <p>These combined figures include all potential habitat loss in advance of reinstatement works and does not take account of mitigation measures. This combined habitat loss is considered to constitute an additional potentially significant effect.</p>
	Surplus Materials	<p>Combined surplus excavated materials across the Proposed Programme of Works are (bulked tonnes):</p> <ul style="list-style-type: none"> ▪ Inert: 2,898,033 ▪ Hazardous: 30,506 ▪ Non-Hazardous: 122,023 ▪ Total: 3,050,562. <p>Final destinations for surplus material arisings from the tunnel excavations have also been evaluated for each individual section, with a view on regional landfill capacity.</p>
	Construction Vehicle Movements	<p>As a result of the overall Proposed Programme of Works there would be approximately 4087 additional weekly HGVs (two-way movements) on public highways at the peak of the construction. It is acknowledged that the M6 motorway could be used by construction vehicles associated with all sections of the Proposed Programme of Works. Given the capacity of the M6 and its junctions, and the infrequent use of the same highway sections across different proposed sections, this cumulative effect is not considered to be significant.</p>
	Tree Loss	<p>As a result of the overall Proposed Programme of Works there would be approximately 368 individual trees at risk of removal plus 301 tree groups and ten woodlands at risk of varying extents of loss. Given the regional scale of the combined developments and the extent of likely tree loss across this large regional area, this combined effect is not considered to constitute an additional potentially significant effect.</p>

26) As set out in Table 19.3, the combined biodiversity loss associated with the Proposed Programme of Works represents an additional significant effect. To address this, United Utilities has committed to protecting certain habitats on construction compounds as well as habitat improvements equating to approximately 10 % Biodiversity Net Gain. Given the mitigation in place across the Proposed Programme of Works and the overall net gain, the residual effect of the combined biodiversity loss is not considered to be significant.

19.5.3 Stage 3 Inter-Project Effects (Proposed Programme of Works and other developments)

27) A review of all 'long 'list' proposed developments along all sections of the Proposed Programme of Works identified that all proposals were 'local' in scope i.e. their environmental and social influence was confined to local areas and local communities. There were no third-party developments or proposed land allocations that could foreseeably act cumulatively with the Proposed Programme of Works and give rise to additional cumulative effects, over and above the likely significant environmental effects already described in the ES.

19.5.4 Interaction with Off-Site Highways Works

- 28) Volume 5: Off-site Highways Works describes the highways works such as road widening and junction modifications that are required to enable HARP construction traffic and other local road users to travel safely on the proposed haulage routes. Some of the environmental effects associated with the proposed off-site highways works – such as landscape and visual effects and tree losses – have the potential to act cumulatively with those effects identified at the construction compounds. Table 19.4 summarises the cumulative effects identified between highways works and those effects identified in Volume 2 of the ES.

Table 19.4: Interaction with Off-Site Highways Works

Discipline	Potential For Cumulative Effects?	Compound Construction Effects	Off-Site Highways Effects	Cumulative Effects
Landscape and Arboriculture	Yes – highways works and compound works have the potential to affect landscape and arboricultural resources over a wider area within the AONB. Therefore, the potential for cumulative effects arising between the main compound works, satellite compounds and off-site highways works is recognised.	Yes – refer to Chapter 6	Yes – refer to Volume 5	<p>Yes</p> <p>The highways improvement works and construction activity for the compounds are programmed to occur sequentially, leading to cumulative landscape effects within the AONB over a wider area and longer period of time. Cumulative effects on landscape character and the wider landscape would arise due to disruption to settled rural areas, which would increase the perception of disruption and contrast with the rural character. The cumulative effects from vegetation loss and removal of boundary features such as hedgerows, dry stone walls and fences would also adversely affect the wider landscape.</p> <p>Cumulative visual effects would occur from the visual disturbance of construction activity and the movement of plant and machinery within the compounds, entering and exiting the compounds, and along the nearby road network. Travellers along the local footpaths and roads with proposed highways improvement works would experience frequent sequential views of the construction of laybys and road widening sections, and also may experience occasionally sequential views towards the construction compounds.</p> <p>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.</p> <p>Cumulatively with the Proposed Bowland Section and the associated off-site highways works, a total of 38 features (trees,</p>

Discipline	Potential For Cumulative Effects?	Compound Construction Effects	Off-Site Highways Effects	Cumulative Effects
				tree groups and hedgerows) are at risk of removal, and 44 features (trees, tree groups, hedgerows and areas of woodland) are at risk of partial removal. 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.
Water Environment	No – highways works and compound works are spatially separated. Therefore, potential effects are not predicted to occur on the same watercourses and are unlikely to be cumulative	Yes – refer to Chapter 7	No	No
Flood Risk	No – highways works and compound works are spatially separated so potential effects are not predicted to occur on the same watercourses	Yes – refer to Chapter 8	No	No
Ecology	Yes – highways works and compound works have the potential to affect assets on a longer term basis. Therefore, potential effects are likely to be cumulative	Yes – refer to Chapter 9A and Chapter 9B	Yes – refer to Volume 5	No Effects on terrestrial species and designated sites are not considered cumulative due to the geographical separation of the works and the embedded mitigation measures. Cumulative effects on terrestrial habitats are not expected to occur as significant effects are not anticipated on comparable habitats. Cumulative effects between the compound works and the off-site highways works are anticipated on aquatic ecology. These are related to effects on macrophyte, fish, macroinvertebrate and otter communities. Following implementation of mitigation, these effects are not expected to be significant.
Cultural Heritage	Yes – highways works and compound works have the potential to affect assets on a longer term	No	Yes – refer to Volume 5	No

Discipline	Potential For Cumulative Effects?	Compound Construction Effects	Off-Site Highways Effects	Cumulative Effects
	basis. Therefore, potential effects are likely to be cumulative			<p>Effects related to visual and/or noise intrusion on assets are not considered to be cumulative as effects are likely to be separated temporally and spatially.</p> <p>Cumulative effects are likely to occur as a result of the collective loss of or change in assets, rather than both schemes impacting on the same asset(s). These effects relate to:</p> <ul style="list-style-type: none"> ▪ Impact on unknown archaeological remains over a wider spatial area ▪ Partial removal of ridge and furrow. <p>Mitigation through geophysical survey and/or trial trenching to identify unknown archaeological remains. Following implementation of mitigation, these effects are not expected to be significant.</p>
Soils, Geology and Land Quality	Yes – highways works and compound works have the potential to affect assets on a longer term basis. Therefore, potential effects are likely to be cumulative	No	No	No
Materials and Waste	Yes – the combination of multiple proposed works has the potential to create cumulative effects	No	No	No
Public Access and Recreation	Yes – the combination of multiple proposed works has the potential to create cumulative effects	Yes – refer to Chapter 13	Yes – refer to Volume 5	<p>No</p> <p>Local residents and users of public rights of way may be impacted by the extended duration of disruption to routes in the wider area. However, following implementation of mitigation, these effects are not expected to be significant.</p>
Communities and Health	Yes – the combination of multiple proposed works has the potential to create cumulative effects	Yes – refer to Chapter 14	No	<p>Yes</p> <p>United Utilities recognises that during the enabling works and construction phase, some villages and local residential areas would</p>

Discipline	Potential For Cumulative Effects?	Compound Construction Effects	Off-Site Highways Effects	Cumulative Effects
				<p>experience disturbance. Disturbance would arise mainly from the movement of heavy goods vehicles through settlements such as Chatburn, Grindleton, West Bradford, Waddington, as well as Clitheroe 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.</p> <p>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.</p>
Major Accidents	No – highways works and compound works are spatially separated from MAHP	No	No	No
Transport Planning	No – highways works and compounds work are not programmed to occur simultaneously	Yes – refer to Chapter 16	No	No
Noise and Vibration	No – highways works and compound works are spatially separated	No	Yes – refer to Volume 5	No
Air Quality	No – highways works and compound works are spatially separated	Yes – refer to Chapter 18	No	No

19.6 Conclusion

- 29) A staged assessment of cumulative effects has been undertaken for the Proposed Bowland Section. These stages of assessment have included the consideration of local proposed developments and land allocations, identified with the assistance of local planning authorities, against the likely significant effects of the Proposed Bowland Section. Where cumulative effects with local proposed developments and land allocations have been identified, none has been identified as giving rise to the risk of greater effects than those already considered in the individual topic assessments.
- 30) Combined effects across the full Proposed Programme of Works (i.e. all developments being undertaken as part of the Haweswater Aqueduct Resilience Programme) have been assessed. The combined potential habitat loss was assessed to constitute an additional potentially significant effect. Mitigation has been identified in the form of habitat protection and a commitment to generate a 10 % Biodiversity Net Gain across the Proposed Programme of Works which would reduce the residual effect to not significant.
- 31) No developments have been identified that would act cumulatively with the Proposed Programme of Works at a regional level.
- 32) Taking account of the sensitivity of the landscape (especially its AONB status), there would be 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. In addition, the total number of trees and tree groups potentially affected by the off-site highways proposals along with the Proposed Bowland Section, and their general contribution to landscape quality adjacent to and within nationally designated landscapes, contribute to significant cumulative effects on arboricultural resources.
- 33) Disturbance would also arise mainly from the movement of heavy goods vehicles through settlements such as Chatburn, Grindleton, West Bradford, Waddington, as well as Clitheroe and past individual properties fronting onto the highway. This could be significant when disturbance for both the off-site highways proposals along with the Proposed Bowland Section act cumulatively, depending on enabling works and construction programmes. 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.
- 34) This cumulative assessment therefore concludes that likely significant cumulative effects remain for the Proposed Bowland Section.