Alternative Temporary Park and Ride and Heavy Goods Vehicle Marshalling Area - Environmental Statement Volume 2 Chapter 12 Cumulative Effects

United Utilities Water Limited

Haweswater Aqueduct Resilience Programme

Planning Application Document RVBC–P&R-APP-RP-002 / ES-CH-12
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12. Cumulative Effects

12.1 Introduction

1) This chapter considers the likely significant cumulative effects associated with the Alternative Facility. Part 1 of Schedule 4[1] of the EIA Regulations requires that the cumulative effects of an EIA development are considered as part of the EIA process. Cumulative effects assessment is based on the principle that different environmental impacts can act together in an additive way 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) A list of acronyms and abbreviations is presented in Volume 4 Appendix A.1.

12.2 Types of Cumulative Effect

3) Two types of cumulative effect have been considered:

- *Intra-project effects*: in which 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 Plate 12.1.
- *Inter-project effects*: when an environmental resource or receptor is affected by more than one development. For example, several separate developments within the same area could lead to a more significant surplus of material arisings than if the developments were considered in isolation, as indicated in Plate 12.2.

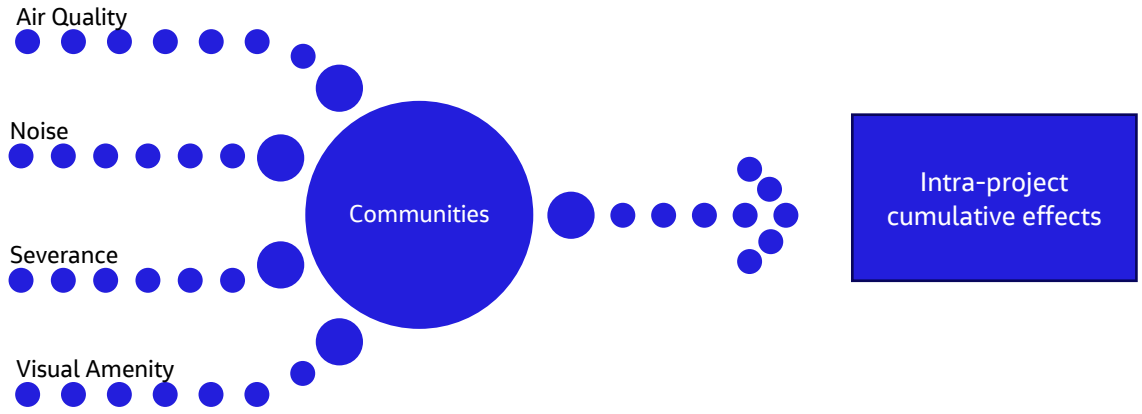

Plate 12.1: Intra-Project Cumulative Effects

[1] The Town and Country Planning (Environmental Impact Assessment) Regulations 2017. [Online] Available at: https://www.legislation.gov.uk/uksi/2017/571/contents [Accessed: February 2025].

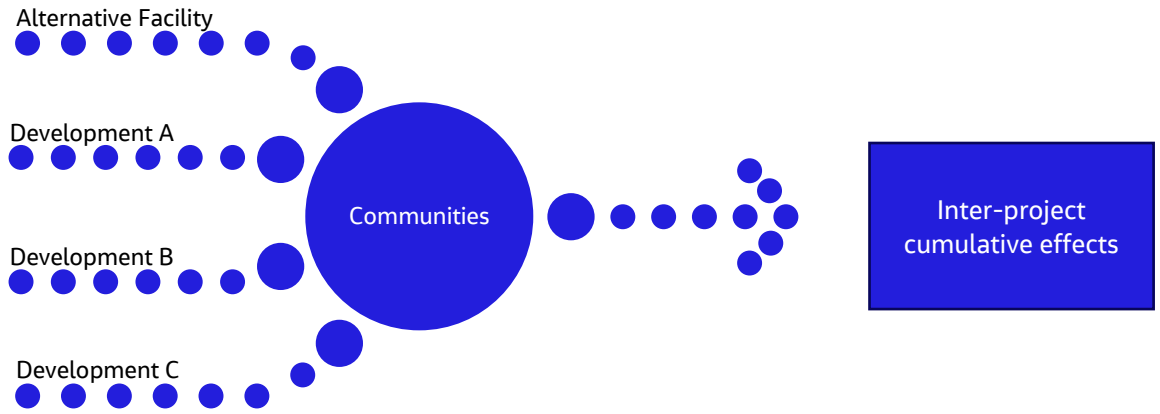

Plate 12.2: Inter-Project Cumulative Effects

12.3 Methodology

4) The cumulative assessment has been undertaken in five stages:

- Stage 1: Evaluation of intra-project effects
- Stage 2: Identification of major developments (third party, non-HARP projects) which have entered the planning system in recent years,[2] derived from a 'short list' based on a detailed search of local authority and county planning records
- Stage 3: Screening of the environmental effects associated with each short-listed major development against those described in this Environmental Statement for the Alternative Facility, to identify where cumulative effects may occur. Evaluation of cumulative effects in instances where likely significant effects are identified
- Stage 4: Consideration of the consented schemes – the Bowland Section (within the Ribble Valley Borough Council area) and the Marl Hill Section – as potential sources of cumulative effects with the Alternative Facility
- Stage 5: Evaluation of the remaining HARP programme of works – the original planning applications submitted in support of the consented HARP programme of works considered the cumulative effects at a route-wide level (i.e. replacement of five tunnel sections). The original cumulative assessment for the consented programme of works is revisited in this chapter, with the additional consideration of effects associated with the Alternative Facility.

12.4 Stage 1: Evaluation of Intra-Project Effects

5) The Alternative Facility is a minor component of the HARP programme of works. It comprises temporary development on agricultural land, some distance from residential property, community facilities and local businesses. The planning application boundary encompasses agricultural land under an agricultural tenancy, and a section of highway (Pimlico Link Road and adjacent verge). On completion of the seven-year operational phase of the Alternative Facility, the site would be decommissioned and returned back to agricultural land. Adverse residual environmental effects that have been reported in Volume 2 of the Environmental Statement are therefore generally minor (due to embedded and good practice measures described in the CCoP (Volume 4 Appendix A.2) and essential mitigation (described within the relevant topic chapters of the Environmental Statement). The adverse effects of the Alternative

[2] Major Applications were selected as a threshold to avoid bringing large numbers of small scale, immaterial developments into the planning search.

Facility are also mostly reversible in nature because it would be removed on completion of the operational phase and the land would be reinstated. There are no environmental designations within the planning application boundary, although there is some cultural heritage potential and protected species presence within or adjacent to the planning application boundary. The only likely significant residual environmental effects relate to landscape and visual effects, and these too would be temporary and reversible. It is notable that operational phase HGV movements have been addressed in the Environmental Statements for the consented schemes, and so the only additional vehicle movements are those associated with the construction and decommissioning of the Alternative Facility. The Environmental Statement concludes that these HGV movements would not be significant in the context of local road capacity, queuing times or road safety.

6) Taking these factors into account, the likelihood of there being significant intra-project effects on receptors within or adjacent to the planning application boundary is low. Intra-project effects have therefore been discounted from further consideration in the cumulative effects assessment process.

12.5 Stage 2: Identification of Major Developments

12.5.1 Defining the Zone of Influence

7) The Zone of Influence represents the geographical area over which the potential environmental impacts associated with construction, operation or decommissioning of the Alternative Facility could occur. Within this Zone of Influence, the environmental effects arising from other, unrelated developments would need to occur for cumulative effects to arise. Once beyond the Alternative Facility's Zone of Influence, the likelihood of its environmental effects having any influence on local environmental conditions is, by definition, limited. It is therefore unlikely that significant cumulative effects would occur outside the Zone of Influence for the Alternative Facility.

8) The Zone of Influence varies according to environmental topic and aligns with the study areas defined in each technical chapter of the Environmental Statement. The relevant technical chapters of the Environmental Statement provide justification for the extent of their respective study areas. The Zones of Influence for each environmental topic are listed in Table 12.1.

Table 12.1: Zones of Influence for the Cumulative Effects Assessment

Topic	Zone of Influence (Approximate Distance from the Planning Application Boundary Unless Otherwise Stated)
Landscape and Visual	2 km
Arboriculture	Immediate environs of the planning application boundary – tens of metres at most
Water Environment	Worston Brook catchment and Mearley Brook catchment
Ecology	2 km
Cultural Heritage	Non-designated heritage assets: 300 m Designated heritage assets: 1 km
Soils, Geology and Land Use	Within planning application boundary
Traffic and Movement	2 km[1]

Topic	Zone of Influence (Approximate Distance from the Planning Application Boundary Unless Otherwise Stated)
Noise and Vibration	Construction noise (plant, machinery etc.): 0.3 km Construction traffic noise (construction vehicles travelling to and from the Alternative Facility): 50 m from the edge of public roads with the potential for an increase in basic noise level of 3 dB(A) or more Construction vibration (plant, machinery etc.): 100 m Construction traffic vibration (temporary haul roads): 4 m from the carriageway edge of any unmaintained temporary route (e.g. haul route) used by HGVs
[1] Corresponding approximately to the extent of the local road network falling within the traffic assessment – generally as far north as the site of the consented P&R and HGV Marshalling Facility.	

12.5.2 Identification of Major Developments

9) A search of local authority and county planning records was undertaken to identify both third party and other United Utilities projects which have the potential to interact cumulatively with the Alternative Facility. The Zones of Influence listed in Table 12.1 were used to establish a search area within which major developments were identified. As the maximum Zone of Influence established in Table 12.1 is 2 km for landscape and visual effects, ecology and traffic and movement, the search area for major developments was based on this radius. The planning application search was based over the period October 2016 to October 2024. For this schedule of third-party projects, the term 'major development' aligns with the Town and Country Planning (Development Management Procedure) (England) Order 2010.[3]

10) The scope of the data sifting exercise included both major planning applications and appeals. This encompassed full, outline, change of use, county matter, all reserved matters applications linked to the major outline application, Regulation 3, Regulation 4, Section 73, hybrid applications and appeals. The application status included applications submitted, approved, refused in the last six months, appeals submitted, and appeals approved. The assessment also included allocations in adopted and emerging development plans, including all allocations in relevant adopted Development Plan Documents (DPDs) and the adopted Local Transport Plan.

11) This sifting process resulted in a long list of 16 developments, of which 15 have secured planning consent. Initial screening of the long list using professional judgement concluded that four developments warranted further attention due to their nature and/or scale. This shortlist of major developments is presented in Table 12.2 and illustrated in Figure 12.1.

Table 12.2: Shortlist of Third-Party Major Developments

Application Reference	Applicant	Site Location	Short Description	Application Status	Decision Date
LCC/2018/0060	Tarmac Aggregates Ltd	Bankfield Quarry, Clitheroe	Continuation of mining operations until 31 December 2033 with completion of restoration by 31 December 2035	Approved	09/12/2020
LCC/2023/0021	Castle Cement Ltd	Ribblesdale Works, West Bradford Road, Clitheroe	Installation of a solid recovered fuel facility including two trailer docking stations, two buildings, bag filter structure, dosing unit building,	Approved	03/10/2023

[3] The Town and Country Planning (Development Management Procedure) (England) Order 2010. [Online] Available at: https://www.legislation.gov.uk/uksi/2010/2184/contents/made [Accessed: February 2025].

Application Reference	Applicant	Site Location	Short Description	Application Status	Decision Date
			conveyors and pipeline linking the dosing unit to the main burner.		
LCC/2023/0017	Castle Cement Ltd	Ribblesdale Cement Works, West Bradford Road, Clitheroe	Installation of replacement main filter and by-pass filter to the kiln.	Approved	25/08/2023
LCC/2016/0027	Tarmac Aggregates Ltd	Bankfield Quarry, Pimlico Link Road, Clitheroe	Importation and processing of construction and demolition waste including road planings and reclaimed asphalt pavement (RAP) including the regularisation of the RAP hopper	Approved	25/05/2016

12.5.3 Other United Utilities Schemes

12) United Utilities has schemes in the Ribble Valley area which are being promoted, among other initiatives, through the Better Rivers Better North West Action Plan[4]. The plan seeks to address water quality concerns in relation to stormwater overflows. As part of the screening process for the cumulative assessment, United Utilities' capital projects in the area were therefore also considered. These schemes, at different stages of development, are in the Gisburn, Grindleton, Slaidburn, Waddington and West Bradford areas. These sites are all outside the Worston Brook and Mearley Brook catchments within which the Alternative Facility is located, and so there is no direct hydrological relationship with these schemes. These schemes were therefore discounted from the cumulative effects assessment process.

12.6 Stage 3: Screening of Shortlisted Major Developments

13) Table 12.3 summarises the outcome of the screening exercise undertaken in respect of each environmental aspect reported in the EIA for each of the shortlisted major developments listed in Table 12.2.

14) It is important to note that future growth on the local road network has been taken into account in the assessment scenarios outlined in the Transport Statement (Volume 4 Appendix F.1) and Chapter 10 Traffic and Movement. For this reason, the potential cumulative effects of future road traffic growth between the Alternative Facility and other proposed developments are implicitly incorporated into the traffic assessment. Therefore, traffic and movement is not listed in Table 12.3.

15) As shown in Table 12.3, the screening assessment has concluded that there is no potential for significant cumulative effects arising from the Alternative Facility in combination with the four major developments within the 2 km search area.

[4] United Utilities (n.d.). Better Rivers Better North West Action Plan. [Online] Available at: https://www.unitedutilities.com/better-rivers/what-we-are-doing/ [Accessed: February 2025].

Table 12.3 Screening of the Shortlist of Major Developments

Development Details	Topic	Screening Assessment	Results of Screening Assessment
Application Reference: LCC/2018/0060 Location: Bankfield Quarry, Clitheroe Description: Continuation of mining operations until 31 December 2033 with completion of restoration by 31 December 2035 Distance from Alternative Facility: 1.2 km	Landscape, Visual and Arboriculture	There is likely to be limited/no inter-visibility between Bankfield Quarry and the Alternative Facility, resulting in no cumulative visual effects. Similarly, there are unlikely to be cumulative effects on local landscape, amenity and arboricultural resources. Therefore, it is unlikely that there would be significant cumulative effects on landscape, visual and arboricultural resources.	Screened out – no likely significant effects
	Water Environment	The Bankfield Quarry Environmental Statement[5] advises that there would be no further impact in terms of hydrogeology or hydrology as a result of continuation of operations. Similarly, it is reported that there would be no alteration to the requirements of existing hydrological and hydrogeological monitoring schemes. Therefore, significant cumulative effects on the water environment are unlikely, noting especially that there are no groundwater impacts associated with the Alternative Facility.	Screened out – no likely significant effects
	Ecology	There are no reported significant effects on habitats and protected species at the Alternative Facility due to the embedded and good practice mitigation measures proposed. In turn, there would be no significant cumulative effects on habitats or protected species. Cumulative effects on designated habitats would not occur because the Alternative Facility does not affect any designated habitats.	Screened out – no likely significant effects
	Cultural Heritage	Bankfield Quarry is located outside the 1 km zone of influence for cultural heritage. Additionally, there are no likely significant effects within or adjacent to the Alternative Facility's planning application boundary. There is no potential for cumulative effects with the Alternative Facility.	Screened out – no likely significant effects
	Soils, Geology and Land Use	The adverse effects on soils, geology and land use reported for the Alternative Facility are not significant and do not extend beyond the planning application boundary. Bankfield Quarry is located outside the zone of influence for the soils, geology and land use assessment. Therefore, there is no potential for cumulative effects.	Screened out – no likely significant effects
	Noise and Vibration	A noise assessment was completed for the application which states that *'the outcome of the assessment demonstrates that the continued operation of the site is not considered to result in significant or unacceptable adverse impacts. A range of recommendations have been made to minimise potential noise emissions from the site.'* Using the Clitheroe Community Hospital as an example of a shared receptor: the highest predicted noise level at the hospital is 49 dB LAeq,1hr free-field (daytime), equivalent to 52 dB at the façade. Based on this maximum predicted noise level and the predicted construction/decommissioning noise level at the hospital due to the Alternative Facility (48 dB LAeq,T facade), a	Screened out – no likely significant effects

[5] Tarmac (2018). Environmental Statement – Bankfield Quarry, Lancashire. Planning Application for an extension of time. [Online] Available at: https://planningregister.lancashire.gov.uk/Planning/Display/LCC/2018/0060#undefined [Accessed: February 2025].

Development Details	Topic	Screening Assessment	Results of Screening Assessment
		combined noise level of 53 dB LAeq,T is predicted at the façade of the hospital, resulting in an increase above existing ambient noise level of 4 dB (which would represent a potentially significant noise effect). The worst affected facades for the other development and the Alternative Facility are likely to differ, so combined impacts would likely be lower than those presented above. As such, the likelihood of significant cumulative noise effects is considered to be low, and the contribution from the Alternative Facility for the worst-case assessment set out above is +1dB.	
Application Reference: LCC/2023/0021 Location: Ribblesdale Works, West Bradford Road, Clitheroe Description: Installation of a solid recovered fuel facility including two trailer docking stations, two buildings, bag filter structure, dosing unit building, conveyors and pipeline linking the dosing unit to the main burner. Distance from Alternative Facility: 1.1 km	Landscape, Visual and Arboriculture	There is likely to be limited to no inter-visibility between the Ribblesdale fuel facility and the Alternative Facility, and it would not change the existing landscape context or land uses at the cement works. No material cumulative effects on arboricultural resources are envisaged. Therefore, it is unlikely that there would be significant cumulative effects on landscape, visual amenity or arboricultural assets.	Screened out – no likely significant effects
	Water Environment	The applicant's Supporting Statement[6] states that surface water run-off would be captured and retained on-site and subsequently used in the cement making process. Impacts on the water environment are not assessed in the planning application supporting statement for this application. It is considered unlikely that there would be significant cumulative effects on the water environment.	Screened out – no likely significant effects
	Ecology	There is limited potential for significant effects on habitats and protected species due to the embedded and good practice mitigation measures proposed at the Alternative Facility. Cumulative effects on designated habitats would not occur because the Alternative Facility does not affect any designated habitats. Therefore, it is considered unlikely that there would be significant cumulative effects on habitats or protected species.	Screened out – no likely significant effects
	Cultural Heritage	The Ribblesdale Cement Works is located outside of the zone of influence for the cultural heritage assessment, and no cumulative effects are anticipated.	Screened out – no likely significant effects
	Soils, Geology and Land Use	The adverse effects on soils, geology and land use reported for the Alternative Facility are not significant and do not extend beyond the planning application boundary. The Ribblesdale Cement Works is located outside the zone of influence for the soils, geology and land use assessment. Therefore, there is no potential for cumulative effects.	Screened out – no likely significant effects
	Noise and Vibration	Noise impacts are not assessed or discussed in the planning application supporting statement for the Ribblesdale Cement Works application. It is unlikely that there would be significant cumulative effects on noise and vibration.	Screened out – no likely significant effects

[6] Hanson Cement (2023). Planning application to install a Solid Recovered Fuel Facility at Ribblesdale Cement Works, Clitheroe, Lancashire – Supporting Statement. [Online] Available at: https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7923&planId=75516&imageId=7&isPlan=False&fileName=Planning%20Application%20to%20install%20a%20Solid%20Recovered%20Fuel%20Facility%20at%20Ribblesdale%20Cement%20Works.%20Supporting%20Statement.pdf [Accessed: February 2025].

Development Details	Topic	Screening Assessment	Results of Screening Assessment
Application Reference: LCC/2023/0017 Location: Ribblesdale Cement Works, West Bradford Road, Clitheroe Description: Installation of replacement main filter and by-pass filter to the kiln. Distance from Alternative Facility: 1.1 km	Landscape, Visual and Arboriculture	There is likely to be limited to no inter-visibility between the Ribblesdale Cement Works development and the Alternative Facility, and the Ribblesdale Cement Works would not change the existing baseline. No material arboricultural effects anticipated. Therefore, it is unlikely that there would be significant cumulative effects on landscape, visual and arboricultural assets.	Screened out – no likely significant effects
	Water Environment	Lancashire County Council's screening opinion[7] for the installation of a replacement main filter does not identify any potential for impacts on the water environment. Therefore, it is unlikely there is potential for significant cumulative effects on the water environment.	Screened out – no likely significant effects
	Ecology	There is limited potential for significant effects on habitats and protected species due to the embedded and good practice mitigation measures proposed at the Alternative Facility. Cumulative effects on designated habitats would not occur because the Alternative Facility does not affect any designated habitats. Therefore, it is considered unlikely that there would be significant cumulative effects on habitats or protected species.	Screened out – no likely significant effects
	Cultural Heritage	The replacement main filter development is located outside the 1 km zone of influence for the cultural heritage assessment. Therefore, there is no potential for cumulative effects.	Screened out – no likely significant effects
	Soils, Geology and Land Use	The adverse effects on soils, geology and land use reported for the Alternative Facility are not significant and do not extend beyond the planning application boundary. The replacement main filter development is located outside of the planning application boundary zone of influence for the soils, geology and land use assessment. Therefore, there is no potential for cumulative effects.	Screened out – no likely significant effects
	Noise and Vibration	Noise impacts are not assessed or discussed in the planning application supporting statement for this application. It is considered unlikely that there would be significant cumulative effects on noise and vibration.	Screened out – no likely significant effects

[7] Lancashire County Council (2023). Screening opinion relating to proposed dust filter plant replacement, Ribblesdale Cement Works, Clitheroe. [Online] Available at: https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7902&planId=77476&imageId=23&isPlan=False&fileName=LCC.2023.0017%20Ribblesdale%20screening%20report.pdf [Accessed: February 2025].

Development Details	Topic	Screening Assessment	Results of Screening Assessment
Application Reference: LCC/2016/0027 Location: Bankfield Quarry, Pimlico Link Road, Clitheroe Description: Importation and processing of construction and demolition waste including road plannings and reclaimed asphalt pavement (RAP) including the regularisation of the RAP hopper Distance from Alternative Facility: 1.2 km	Landscape, Visual and Arboriculture	There is likely to be limited to no inter-visibility between this Bankfield Quarry development and the Alternative Facility, and the other development would not change the existing land use of the quarry. No material cumulative effects on arboriculture. Therefore, it is unlikely that there would be significant cumulative effects on landscape, visual and arboricultural resources.	Screened out – no likely significant effects
	Water Environment	Impacts on the water environment are not assessed or discussed in the applicant's Supporting Statement[8]. It is unlikely that there would be significant cumulative effects on the water environment.	Screened out – no likely significant effects
	Ecology	There is limited potential for significant effects on habitats and protected species due to the embedded and good practice mitigation measures proposed at the Alternative Facility. Cumulative effects on designated habitats would not occur because the Alternative Facility does not affect any designated habitats. Therefore, it is unlikely that there would be significant cumulative effects on habitats or protected species.	Screened out – no likely significant effects
	Cultural Heritage	This Bankfield Quarry development is located outside the 1 km zone of influence for the cultural heritage assessment. Therefore, there is no potential for cumulative effects.	Screened out – no likely significant effects
	Soils, Geology and Land Use	The adverse effects on soils, geology and land use reported for the Alternative Facility are not significant and do not extend beyond the planning application boundary. The other development is located outside of the planning application boundary zone of influence for the soils, geology and land use assessment. Therefore, there is no potential for cumulative effects.	Screened out – no likely significant effects

[8] Heaton Planning (2016). Bankfield Quarry. Planning Application for the importation and processing of Construction and Demolition waste including Road Planings and Reclaimed Asphalt Pavement at Bankfield Quarry, Clitheroe for TARMAC a CRH company. [Online] Available at: https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=6917&planId=40868&imageId=3&isPlan=False&fileName=Supporting%20Statement%20-%20Bankfield.pdf [Accessed: February 2025].

Development Details	Topic	Screening Assessment	Results of Screening Assessment
	Noise and Vibration	A noise assessment for the application was completed and states that '*Following the implementation of this mitigation measure, along with consideration of the context and any potential effects of uncertainty, the overall outcome of the assessment indicates that noise from the proposed scheme is not likely to be significant.*'[9] Using the Clitheroe Community Hospital as an example of a shared receptor: The highest predicted noise level at the hospital 43 dB LAeq,1hr free-field, equivalent to 46 dB at the façade. Based on this maximum predicted level and the predicted maximum construction noise level at the hospital due to the Alternative Facility (48 dB LAeq,T facade), a combined noise level of 50 dB LAeq,T is predicted at the façade of the hospital, resulting in an increase above existing ambient daytime noise level of 3 dB (which would represent a potentially significant noise effect). The worst-affected facades for the Bankfield Quarry development and the Alternative Facility are likely to differ, so combined impacts would likely be lower than those presented above. As such, the likelihood of significant cumulative noise effects is considered to be low.	Screened out – no likely significant effects

[9] Vibrock (2016). Noise Assessment: Proposed Importation and Processing of Construction and Demolition Waste including Road Planings and Reclaimed Asphalt Pavement at Bankfield Quarry, Clitheroe. Tarmac Services Limited, Report No. R16.8982/1/JS, 11 March 2016. [Online] Available at: https://planningregister.lancashire.gov.uk/Planning/Display/LCC/2016/0027#undefined [Accessed: February 2025].

12.7 Stage 4: Consideration of the Consented Schemes

16) As stated previously, the relative scale of the Alternative Facility when compared with the consented schemes, its temporary and reversible nature, its distance from residential property and community infrastructure, coupled with effective mitigation measures, would result in a development with very few likely significant residual effects. Furthermore, taking into account that one of the key elements of its operational phase – namely HGV movements north of the Ribblesdale Cement Works to serve the HARP construction compounds – has been addressed through the planning applications for the consented schemes, this leaves no local cumulative effects to consider over and above those addressed in Section 12.8.

12.8 Stage 5: Evaluation of All Sections of the HARP Programme of Works

17) The remaining HARP Programme of Works, beyond the consented schemes in the Ribble Valley area, are some considerable distance from the site of the Alternative Facility. The notable separation distances from the Docker, Swarther and Haslingden and Walmersley Sections (in some cases tens of kilometres) therefore present very limited scope for certain types of impact to extend beyond their local respective zones of influence.

18) However, to enable a complete and robust consideration of cumulative effects and recognising that some adverse effects should be evaluated beyond the local level, a wider regional context has been applied to all five sections of the programme of works. 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, carbon emissions and tree loss.

19) Table 12.4 summarises the predicted cumulative effects of the overall HARP programme of works with the addition of the Alternative Facility. The cumulative effects of the overall HARP programme of works, in the interests of consistency, are taken from the Environmental Statements for the consented Programme of Works. The Cumulative Effects Assessment column of the table provides the inter-project cumulative effects assessment for the overall HARP programme of works. The Alternative Facility column of the table considers the potential for the Alternative Facility to generate additional or new cumulative effects when considered in combination with the overall programme of works.

20) As set out in Table 12.4, it is considered that the Alternative Facility would not give rise to any material additional or new significant cumulative effects in combination with the Proposed Programme of Works, over and above those reported in the Environmental Statements for the Proposed Programme of Works.

Table 12.4: Inter-Project Cumulative Effects, United Utilities Developments

Proposed Development	Topic Area	Cumulative Effects Assessment for the Consented Programme of Works[10]	Alternative Facility – Potential for Additional or New Cumulative Effects	Conclusion
Proposed Programme of Works: ▪ Proposed Docker Section ▪ Proposed Swarther Section ▪ Proposed Bowland Section ▪ Proposed Marl Hill Section ▪ Proposed Haslingden and Walmersley Section	Ecology	The combined potential habitat loss across the Proposed Programme of Works is expected to be over 150 hectares, including: ▪ 17.3 ha of semi-improved neutral grassland ▪ 5.5 ha of marsh/marshy grassland ▪ 4.8 ha of young broad-leaved plantation woodland ▪ 2.8 ha of semi-improved acid grassland ▪ 2.3 ha of fen. 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.	The temporary and reversible habitat loss associated with the Alternative Facility is 3.01 ha of semi-improved neutral grassland (categorised under UKhab as 'Other Neutral Grassland'), and 0.09 ha of rural trees. This is not a significant effect and when further considered against the combined habitat losses associated with the programme of works, it does not represent a new or additional significant cumulative effect.	No additional or new significant cumulative effects over and above those reported in the Environmental Statements for the Proposed Programme of Works
	Surplus Materials and Waste	Combined surplus excavated materials across the Proposed Programme of Works are (bulked tonnes): ▪ Inert: 2,898,033 ▪ Hazardous: 30,506 ▪ Non-Hazardous: 122,023 ▪ Total: 3,050,562. Individual surplus excavated materials are considered for each development, with assessments undertaken illustrating how the surplus materials could affect capacity in the region. No additional effects from the combined Proposed Programme of Works have been identified.	Quantities of materials required for, and waste generated by, the Alternative Facility are provided in Table 3.1 of Chapter 3: Description of the Alternative Facility. Small quantities of waste would be produced throughout the life of the Alternative Facility. These would consist mainly of non-hazardous material, packaging and solid and liquid waste. There would be no surplus materials from earthworks taken off site, and stripped soil would be sustainably stored on site and reinstated during the decommissioning phase.	No additional or new significant cumulative effects over and above those reported in the Environmental Statements for the Proposed Programme of Works

[10] The data presented in this column, and the conclusions drawn from it, have been taken from the cumulative assessment undertaken for the consented Programme of Works as presented in Volume 2 of the 2021 Environmental Statements prepared in support of the planning applications for the consented schemes.

Proposed Development	Topic Area	Cumulative Effects Assessment for the Consented Programme of Works[10]	Alternative Facility – Potential for Additional or New Cumulative Effects	Conclusion
	Construction Vehicle Movements	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 the M6 motorway would be used for all sections within the Proposed Programme of Works. Given the regional scale of the combined developments, and the infrequent use of the same highway sections across different developments, this combined effect is not considered to constitute an additional potentially significant effect.	As reported in Chapter 10 Traffic and Movement, with the incorporation of good practice and mitigation measures, the Alternative Facility would have a negligible impact on the highway network during construction, and decommissioning. The operational effects of the facility on local traffic flows have already been accounted for within the consented schemes. The Alternative Facility would not create significant new or additional traffic and movement effects over and above those associated with the consented schemes.	No additional or new significant cumulative effects over and above that reported in the Environmental Statements for the Proposed Programme of Works
	Arboricultural Resources	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. For each section the necessary mitigation has been identified. 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.	The Alternative Facility would require the removal of one B category tree, two C category trees, three U category trees and the pruning and partial removal of three C category groups and one B category group. The Arboricultural Impact Assessment concludes that there would be a negligible impact on arboriculture.	No additional or new significant cumulative effects over and above that reported in the Environmental Statements for the Proposed Programme of Works
	Climate	The estimated greenhouse gas (GHG) emissions in tonnes carbon dioxide equivalent (tCO_2e) for each section of the Programme of Works is as follows: ▪ Proposed Docker Section: 23,053 tCO_2e ▪ Proposed Swarther Section: 28,097 tCO_2e ▪ Proposed Bowland Section: 76,415 tCO_2e ▪ Proposed Marl Hill Section: 19,259 tCO_2e ▪ Proposed Haslingden and Walmersley Section: 168,817 tCO_2e The total estimated GHG emissions for the Programme of Works is 315,641 tCO_2e. The construction of the Programme of Works is assumed to span the UK's fourth (2023 to 2027) and fifth (2028 to 2032) Carbon Budgets. These budgets provide a legal limit for the total volume	The total estimated GHG emissions associated with the construction, operation and decommissioning of the Alternative Facility are estimated to be 933 tCO_2e. This is considered to be negligible, and the equivalent of approximately 0.003% of the total estimated GHG emissions for the Programme of Works. The Alternative Facility is therefore considered unlikely to have a material impact on the ability of the UK Government to meet its carbon reduction targets, when considered cumulatively with the Programme of Works. Therefore, cumulative GHG emissions are considered not significant.	No material additional or new significant cumulative effects when considering the additional carbon emissions arising from the Alternative Facility, over and above those reported in the Environmental Statements for the five sections of the HARP Programme of Works

Proposed Development	Topic Area	Cumulative Effects Assessment for the Consented Programme of Works[10]	Alternative Facility – Potential for Additional or New Cumulative Effects	Conclusion
		of GHG emissions the UK can emit. The fourth Carbon Budget is 1,950 million tCO_2e ($MtCO_2e$) and the fifth Carbon Budget is 1,725 $MtCO_2e$. The total estimated GHG emissions associated with the Programme of Works are the equivalent of approximately 0.02% of the Fourth Carbon Budget, and approximately 0.02% of the Fifth Carbon Budget. Therefore, it is considered that the total GHG emissions associated with the Programme of Works is negligible in comparison with relevant UK carbon budgets. On this basis, GHG emissions associated with the Programme of Works are considered unlikely to have a material impact on the ability of the UK Government to meet its carbon reduction targets. Therefore, cumulative GHG emissions are considered not significant.		