Haweswater Aqueduct Resilience Programme

Construction Traffic Management Plan

Proposed Marl Hill and Bowland Sections

Access to Bonstone, Braddup and Newton-in-Bowland compounds

Project No: 80061155

Projectwise Ref: 80061155-01-UU-TR4-XX-RP-C-00024

Planning Ref: RVBC-BO-APP-007_03

Version	Purpose / summary of changes	Date	Written By	Checked By	Approved By
P01	For planning submission update	25/01/2022	WB	TR	ON
P02	Updated to address LCC comments	08/12/22	ON	WB	TR
P03	Updated to address LCC comments	19/01/22	ON	WB	TR

Contents

1. Introduction

1.1 Background

1.1.1 The Haweswater Aqueduct

The existing Haweswater Aqueduct is a feat of engineering. The pipeline, built between 1933 and 1955, has successfully served people in Cumbria, Lancashire and Greater Manchester for over sixty years.

In order to maintain the integrity of the network, United Utilities are proposing to replace all six tunnel sections along the length of the aqueduct from Cumbria to Greater Manchester. This programme of work is the Haweswater Aqueduct Resilience Programme (HARP).

1.1.2 The Bowland Section

The third of the six proposed tunnel sections, known as the proposed Bowland Section, extends from Lower Houses near Wray in the north, below the Bowland fells, to Newton-in-Bowland in the south. The proposed Bowland Section would replace an existing 16.7 km section of aqueduct between Wray and Newton-in-Bowland. It would be constructed by a Tunnel Boring Machine (TBM) below ground level with short open-cut surface trenching sections at each end making connections back to the existing aqueduct. The new tunnel would be bored in a northerly direction from a portal at the southern end of the tunnel. The Bowland tunnel would have a launch compound approximately 460 m to the west of Newton-In-Bowland (hereafter referred to as "the Newton Compound" - see Figure A-1-01 in Appendix A1).

1.1.3 The Marl Hill Section

The fourth of the six tunnel sections, known as the proposed Marl Hill Section, extends from Bonstone south of the River Hodder near Newton-in-Bowland, to Bashall Eaves north of Waddington.

The proposed Marl Hill Section would replace an existing 4.3 km section of aqueduct between Newton-in-Bowland and Waddington. It would be constructed by a TBM below ground level with short open-cut surface trenching sections at each end making connections back to the existing aqueduct. The new tunnel would be bored in a northerly direction from a shaft at the south end of the tunnel. The proposed Marl Hill Section would have a launch compound at Bashall Eaves (hereafter referred to as "the proposed Braddup Compound" – see Figure A-1-01 in Appendix A1) approximately 4.5 km to the northwest of Clitheroe with a reception shaft approximately 1.5 km south of Newton-in-Bowland (hereafter referred to as "the proposed Bonstone Compound" – see Figure A-1-01 in Appendix A1).

1.1.4 Shared access

The proposed Marl Hill compounds and the proposed Newton-in-Bowland compound are all in close proximity to the B6478 to the north of Clitheroe. The timing of the majority of the proposed construction activities would coincide, consequently it is anticipated that a significant proportion of Marl Hill and Newton Access routes (hereafter referred to as "MNA" routes) would be shared.

1.2 Purpose of the Document

This document comprises the Construction Traffic Management Plan (CTMP) for the proposed MNA. It outlines mitigation embedded in the design of the proposed Newton-in-Bowland and Bonstone/Braddup planning applications and details additional mitigation measures prescribed in the Environmental Statements for the Proposed Bowland and Marl Hill Sections.

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Commented [BW2R1]: Tom and Anna removed 'outline' from the earlier versions prior to initial submission

Commented [RT3R1]: Yes, LCC don't like the term 'Outline'

Commented [NO4R1]: Fair enough!

The core objective of the CTMP is to ensure that construction of the proposed Bowland and Marl Hill Sections does not give rise to undue adverse impacts on the local highway. To that end it shall:

- Ensure that movements of people, plant and materials are achieved in a safe, efficient and timely manner
- Establish a sustainable and proportionate approach to help ensure that the character and distinctiveness of the AONB is retained as far as is reasonably practicable
- Ensure construction traffic levels do not exceed an acceptable level during network peak periods
- Reduce and control construction vehicle trips where practical
- Ensure strategies and mitigation measures are implemented and adhered to through continued monitoring, review and improvement of the CTMP
- Limit the effects of construction traffic on the Local Road Network.

The CTMP will be further developed by the appointed Contractor for submission to, and approval of, the Local Planning Authority and Local Highway Authority prior to the commencement of works.

This document supersedes the following documents previously submitted:

Title	Projectwise Ref:	Planning Ref:
Option 1 - Use of the Existing Ribble Crossings	80061155-01-UU-TR4-XX-RP-C-00012	RVBC-BO-APP-007_01
Option 2 - Use of a Temporary Ribble Crossing	80061155-01-UU-TR4-XX-RP-C-00013	RVBC-BO-APP-007_02

Table 1: CTMPs superseded by this document

2. Sequencing of proposed works and anticipated access requirements

2.1 Sequencing of proposed works

The proposed works phases during construction, in addition to activities in each phase, are set out in Table 2 below[1].

Works Phase	Activities
Phase 1 **Newton-in-Bowland Site Establishment**	Newton-in-Bowland Highway improvements Establishing construction access (including Ribble and Hodder crossings) Vegetation clearance Public Rights of Way diversions Earthworks Establishing compound working areas Marl Hill Sites No activity
Phase 2 **Bowland Tunnel Drive and Marl Hill Tunnel Site Establishment**	Newton-in-Bowland Portal construction Management of material/ waste arisings Tunnel construction Open-cut pipework construction Marl Hill Sites Establishing construction access Vegetation clearance Public Rights of Way diversions Earthworks Establishing compound working areas
Phase 3 **Bowland Tunnel Drive and Marl Hill Tunnel Drive**	Newton-in-Bowland Management of material/ waste arisings Tunnel construction Open-cut pipework construction Marl Hill Sites Shaft construction Management of material/ waste arisings Tunnel construction Open-cut pipework construction

Commented [NO5]: It should be noted that these are outline durations and phases and they will be subject to confirmation by the Contractor (?)

Commented [BW6R5]: Included a footnote – "It should be noted that the sequencing of works, specific activities completed during each phase and the duration of the activities should be considered provisional, to be updated on appointment of contractors when a final CTMP is produced."

[1] It should be noted that the sequencing of works, specific activities completed during each phase and the duration of the activities should be considered provisional, to be updated on appointment of contractors when a final CTMP is produced.

Works Phase	Activities
Phase 4 **Bowland Tunnel Drive and Marl Hill Tunnel Reinstatement**	Newton-in-Bowland Management of material/ waste arisings Tunnel construction Open-cut pipework construction Marl Hill Sites Land reinstatement
Phase 5 **Newton-in Bowland Site Reinstatement**	Newton-in-Bowland Land reinstatement Marl Hill Sites No activity

Table 2 Proposed Phases of Work (Construction and Commissioning)

2.2 Anticipated site access requirements

Costain were engaged by United Utilities to provide Early Contractor Involvement, as part of this work Costain have provided construction traffic estimates based on typical anticipated resource requirements. The estimates indicate that circa 280,000 vehicle movements in total[2] across the five construction phases and the three proposed compounds will be necessary for the completion of the proposed works.

This initial assessment suggests traffic supporting construction activities will be predominantly composed of the vehicles listed below. The list includes an indication of vehicle type, use and the approximate percentage of the total two way vehicle movements that will be completed by each vehicle type.

It should be noted that the list of vehicles is indicative and is not exhaustive. The precise number, type and composition of the fleet of construction vehicles used will be determined by the appointed contractor(s).

HGV - 4 axle rigid max GVW 32 Tonne (rigid/tipper)

Circa 73% of all movements

Typically used to transport the following:

- tunnel arisings from the tunnel launch sites (circa 78% of such vehicle movements will be used for this purpose, i.e. approximately 57% of all two way movements)
- other bulk materials (examples include aggregates and asphalt)
- pre cast concrete tunnel segmental rings
- connecting pipework

[Appendix A3 Figure A-3-01 provides an indication of typical vehicle dimensions]

[2] This figure is representative of single direction movements, for example, a journey to site is one movement and the journey from site is a second movement. The peak figure of c.280,000 movements is c.140,000 movements to site and c.140,000 away from site.

LGV - 2 axle max GVW 3.5 Tonne (crew bus / car)

Circa 17% of all movements

Used to transport site personnel and visitors between compounds and a proposed park and ride site (this proposed mitigation measure is discussed in subsequent sections).

HGV – 5/6 axle articulated tanker up to GVW 44 Tonne

Circa 3.6% of all movements

Typically used for bulk movement of fluid materials consumed/generated during the works, examples include:

- Cement
- Bentonite
- Grout additives
- Gasoil
- Waste water

[Appendix A3 Figure A-3-02 provides an indication of typical vehicle dimensions]

LGV - 2 axle max GVW 3.5 Tonne (transit type pick up / 4x4)

Circa 2.5% of all movements

Typically used for general deliveries (consumables and site equipment)

HGV - 3 axle rigid body skip wagon up to GVW 26 Tonne

Circa 1.3% of all movements

Used for the removal of waste materials generated by the works

HGV - tractor unit, low loader step trailer (typical width 2.9m) up to GVW 44 Tonne

Circa 1.0% of all movements

Typically used for delivery of large plant and equipment to site, examples include:

- Excavators
- Dump Trucks
- Compaction plant
- Piling rigs
- Tracked cranes

[Appendix A3 Figure A-3-03 provides an indication of typical vehicle dimensions]

HGV – 5/6 axle articulated flatbed up to GVW 44 Tonne

Circa 0.9% of all movements

Typically used for delivery of large self-contained and/or prefabricated equipment to site, examples include:

- Temporary accommodation
- Temporary works equipment
- Wheel wash

- HV equipment
- Emergency generator
- Powder Silos and batching plant
- Cooling water tank and pumps
- Ventilation container and duct
- Muck bay equipment

[Appendix A3 Figure A-3-04 provides an indication of typical vehicle dimensions]

HGV - 3 axle articulated flatbed GVW 26 Tonne

Circa 0.4% of all movements

Used to deliver larger components or equipment examples include:

- Replacement tunnel boring machine components
- Security fencing, lighting, barriers

HGV - 4 axle rigid max GVW 32 Tonne (concrete mixer)

Circa 0.3% of all movements

Used to deliver mixed concrete to site

Abnormal Indivisible Load Movements

The Proposed Development will require the movement of Abnormal Indivisible Loads (AILs). AILs are defined as vehicles which fall outside the provisions contained within The Road Vehicles (Construction and Use) Regulations 1986 and The Road Vehicles (Authorised Weight) Regulations 1998. Two types of AIL are anticipated:

- Delivery of the Tunnel Boring Machines (TBM) to the tunnel launch sites (Braddup and Newton) and to remove the Marl Hill TBM upon completion of the Marl Hill tunnel from the Bonstone compound. The TBM will be composed of multiple AILs. These will be transported by tractor unit and multi axle low bed step trailer. Circa 20 movements are anticipated in total (i.e. less than 0.01% of all movements). [Appendix A3 Figure A-3-06 provides an indication of typical vehicle dimensions]
- Mobile cranes will be required (typically 3m wide and up to 22m long). Circa 400 movements are anticipated in total (i.e. approximately 0.15% of all movements). [Appendix A3 Figure A-3-05 provides an indication of typical vehicle dimensions]

Initial assessments of potential routes, including horizontal swept path analysis and a separate logistics review, have been completed considering TBM shield haulage (the anticipated largest indivisible load a 4.3m square, 120 tonne TBM component). The findings of the initial assessments are summarised in Appendix B3.

The specification of the TBMs and vehicle / trailer configurations will be determined by the appointed contractor(s). The appointed contractor(s) will be responsible for developing a detailed plan that will be subject to approval by all relevant authorities. In developing the plan prior to the movement of such loads, full consultation will be undertaken by the appointed contractor(s) with the highway authorities and Police to ensure delivery is scheduled to minimise delay on the highway network.

3. Proposed Vehicle Routing

3.1 MNA Proposal Overview

Figure A-1-01 in Appendix A1 shows the proposed route.

It is proposed that each of the three compounds is accessed via its own dedicated temporary haul road linking the compound to the B6478.

- The temporary haul roads for the Newton-in-Bowland and Braddup Compound will require the creation of temporary new junctions with the B6478.
- The Newton-in-Bowland Compound will also require new temporary junctions with Newton Road (to the west of Newton) which construction traffic will use to cross the road.
- The temporary haul road for the Newton-in-Bowland Compound will also include the creation of a temporary crossing of the River Hodder.
- The temporary haul road facilitating access to the Bonstone compound will utilise an existing junction that will have to be modified to accommodate the anticipated construction vehicles.

Access to and from the proposed Newton-in-Bowland, Bonstone and Braddup compounds will be gained via Junction 31 of the M6, A59, A671 Pimlico Link Road, West Bradford Road. The proposal then uses a proposed temporary haul road crossing the River Ribble adjacent to the existing West Bradford Bridge to access the B6478 north of Waddington. The temporary haul road for the Ribble crossing will require the creation of new temporary junctions with West Bradford Road (Clitheroe, south of the River Ribble) and West Bradford Road (Waddington, north of the River Ribble). The route then continues on the West Bradford Road (Waddington) and along the B6478 Slaidburn Road/Hallgate Hill (hereafter referred to as "Route 3").

3.1.1 Ribble and Hodder crossing construction

The construction of the Ribble crossing is anticipated to take approximately 9 months in total and would also be required for access to the proposed Newton-in-Bowland compound in connection with the Proposed Bowland Section (3/2021/0660). It is envisaged that access to the northern extent of the Ribble Crossing, off West Bradford Road between Waddington and West Bradford, would be required to construct the temporary haul route. For this reason, and to enable simultaneous construction of the Hodder Crossing proposed as part of planning application 3/2021/0660, United Utilities is seeking flexibility to use parts of the existing highways network through Clitheroe and adjacent villages, as outlined below:

ROUTE 1: ENABLING PHASE 1a ACCESS ROUTE (Hodder and Ribble Crossing construction only)

A59, A671 Pimlico Link Road, A671 Chatburn Road and through Waddington (hereafter referred to as "Route 1").

ROUTE 2: EXCEPTIONAL ACCESS ROUTE (Hodder and Ribble Crossing Construction only)

A59, Pimlico Link Road, and then via Chatburn Road, Clitheroe Road, Crow Trees Brow, Ribble Lane, East View, Grindleton Road, West Bradford Road (Grindleton), Waddington Road, West Bradford Road (Waddington) (hereafter referred to as "Route 2").

During construction of the Ribble Crossing it will be necessary to complete concurrent activities on both sides of the river, access will therefore be required to the north of the River. It is proposed that the contractor shall be constrained to the use of Route 1 during this period to access sites to the north of the River Ribble. This constraint will necessitate the use of only light vehicles and HGVs under 3.5 m in height.

It is anticipated however that there will be some activities that necessitate the use of larger vehicles (for example piling rigs or other indivisible loads). In such instances Route 2 would be used only with prior agreement of the Local Highway Authority and movements would be infrequent (see Section 4.1.1 below). Where the use of Route 2 is required the contractor would be constrained to using vehicles that can physically use the route as it is (i.e. no road modifications are proposed).

It is proposed that the construction of the temporary haul road for the Newton-in-Bowland compound ("the Hodder Crossing") would be constructed concurrently with the Ribble Crossing to minimise the overall construction duration of the Proposed Bowland Section.

During the initial stages of construction of the Hodder crossing it is also anticipated that there will be a need for some Light Vehicle and HGV movements through Newton-in-Bowland village. In such instances HGV movements through the village would only take place with prior agreement of the Local Highway Authority and movements would be infrequent (see Section 4.1.1 below). As with the use of Route 2, when movements through the village are required the contractor would be constrained to using vehicles that can physically use the route as it is (i.e. no road modifications are proposed).

3.1.2 Surplus Material Arising from Tunnel Construction

Surplus arisings derived from the construction of the proposed Bowland and Marl Hill Sections will be transported to Waddington Fell Quarry for use in the restoration of the quarry. Arisings will be brought to surface at the proposed Newton-in-Bowland and Braddup compounds and transported along the B6478 to the quarry. This results in a significant proportion of anticipated two way movements avoiding the road network south of the proposed Braddup haul road junction with the B6478. The figure below illustrates the anticipated percentage split between Route 3 and the surplus arising movements.

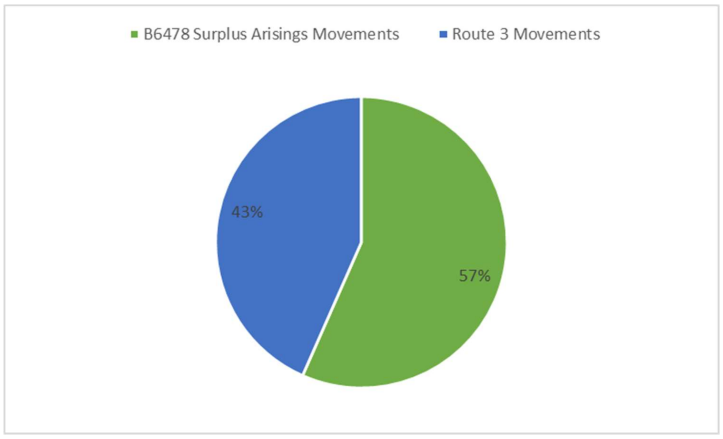

Figure 1 – Anticipated traffic split between Route 3 and the surplus arising movements

3.2 Local Highway Constraints and Considerations

There are a number of constraints and considerations that have informed the traffic route proposal. The table below provides a summary of these. The table also includes an overview of how these issues have been mitigated at the route planning stage and further opportunities for mitigation during the construction stage. Further detail on the proposed mitigation measures is included in subsequent sections.

Constraint/ consideration	Key Issues	Overview of mitigation
Road Safety	Potential conflict/increased risk of accidents between construction vehicles and other road users including non-motorised users	Proposed construction traffic routes avoid higher accident frequency links where possible and appropriate. Appropriate temporary access design. Suitable traffic management, signage and communications. Driver Training Continuous improvement: monitoring, review and improvement led by a multiparty HARP Highways Stakeholder Group. Detailed design to include appropriate safety audits.
Urban areas and built environment indicators (villages, towns, schools)	Potential conflict/increased risk of accidents between construction vehicles and residents of local villages, towns and particularly around schools.	Proposed construction traffic routes minimise the number of sensitive areas affected so far as reasonably practicable. Proposed construction traffic routes minimise the impact to the center of Clitheroe so far as reasonably practicable. Restrictions on construction traffic movements during school drop off periods proposed. Community Engagement Group and free phone community number to allow direct communication between local residents and the Contractor.
Existing link capacity and traffic composition	Congestion/road capacity	Proposal attempts to minimise the number of movements through Clitheroe and surrounding villages so far as reasonably practicable. Proposal to reuse tunnel arisings at Waddington Fell Quarry avoids the need for circa 57% of anticipated traffic to travel through more populated sections of the B6478 (i.e. south of the proposed Braddup compound entrance). Park and Ride facility (see Figure A-1-01 in Appendix A1) along with restrictions on available car parking at the compounds are proposed to minimise the number of light vehicle movements.

Constraint/ consideration	Key Issues	Overview of mitigation
Narrow local roads (including those used for on street parking), junction constraints and low bridges	Size of construction vehicles and narrow local roads. Increase in HGVs on narrow roads leading to deterioration of road haunches and possible structural failure of the highway.	Optimise the number of vehicles that can utilise the higher class road (the B6478) from Clitheroe to Waddington avoiding narrower roads in surrounding villages. Avoid unsuitable local road network where practical by providing temporary access points and temporary haul roads where reasonably practicable. Physical improvement works to the local road network where practical for the duration of the construction works. All works to be completed to relevant appropriate standards and to ensure no unintended secondary impacts to the highway (appropriate drainage, etc.). Appropriate proactive maintenance regime to be agreed (to include particular emphasis on areas of concern, e.g. road haunches along narrow road sections). Suitable traffic management to be implemented at locations where physical works are impractical. Temporary parking restrictions where necessary and alternative parking provision where reasonably practicable. Appropriate speed restrictions to ensure safe stopping distances to allow wider vehicles to slow and pass. Provision of HGV marshalling area (see Figure A-1-01 in Appendix A1) to allow control of traffic leaving the A59 prior to trafficking the narrower local road network. This will also allow the use of escorted convoys and directional control of vehicles greater than circa 2.55m wide.
Existing highway conditions and potential construction traffic impact	Deterioration of the highway due to increased use by construction vehicles and the resulting safety implications.	Appropriate inspection and condition survey regime to be agreed. Appropriate proactive maintenance regime to be agreed (to include particular emphasis on areas of concern, e.g. road haunches along narrow road sections).

Constraint/ consideration	Key Issues	Overview of mitigation
Visibility at temporary access points	HGV visibility and potential for conflict when accessing and egressing the compound	Visibility based on CD 109 (Tables 2.5 and 2.10). Appropriate vegetation clearance, traffic management and speed reduction measures to be implemented to achieve safe access.
Impacts on other road users	As for road safety consideration above. Environmental impacts, amenity impacts and business impacts.	Proposed construction traffic routes maximise use of higher classes of roads. Appropriate traffic management, signage and communications. Proactive maintenance of refuge locations where PRoWs meet the B6478 to north of Waddington for NMUs. Provision of additional refuge/footway in Waddington Village.

Table 3 Summary of constraints and considerations informing traffic route

4. Proposed Operation

4.1 Anticipated vehicle movements

Anticipated vehicle movements along the proposed construction access routes vary significantly depending upon construction phase and location on the road network.

Figures A-2-01 to A-2-05 in Appendix A2 provide an overview of the average and maximum total movements per day along each section of the proposed construction access routes during each construction phase. The figures are the sum of all anticipated movements (HGV, AIL and Light Vehicles).

Figures A-2-07 to A-2-11 in Appendix A2 itemise the anticipated split of vehicle type presenting anticipated average and maximum total movements for each vehicle type per day. The figures provide an indication of the movements along each section of the proposed construction access routes, at each compound and the quarry during each construction phase.

Figures A-2-12 to A-2-16 in Appendix A2 present the anticipated compound and quarry HGV movements during each construction phase. The figures show the anticipated total number of HGVs (maximum and average) per day and hourly arrivals/departures (maximum and average). Appendix B4 provides the rationale for the maximum hourly arrivals/departures.

The maximum movements relate to which activities are being completed at each site at a particular time.

It should be noted that maximum movements during construction phases 2 to 4 include short duration peaks. Such peaks will be the result of an intense period of exceptionally high tunnelling productivity. It is anticipated that these peaks may occur during a 2-3 day period once every 3-4 weeks when tunnel progress is such that movements to the quarry will have to significantly increase to prevent on-site arisings storage facilities being overwhelmed.

All these figures should be considered provisional, to be updated following contractor appointment.

4.1.1 Ribble Crossing & Hodder Crossing

Figure A-2-01 includes the proposal to use the existing Ribble and Hodder crossings during the initial part of construction phase 1. It is anticipated that Route 1 would be subject to traffic volumes comparable to construction phases 2 to 4 during this period.

~~When requesting~~The use of Route 2 for ~~and~~ HGV movements including through Chatburn, West Bradford and Route 1E through Newton-in-Bowland during this period would be by exception and would be subject to the acceptance of the highway authority. Furthermore it is proposed that:

- Movements would ~~only~~ be restricted ~~occur~~ during the following periods~~hours of 9.15am and 3pm~~
  08:00 to 09:00 (Monday to Friday)
  14:00 to 15:00 (Wednesday)
  15:15 to 16:15 (Monday to Friday, excluding Wednesday)

  These times will be reviewed with the highway authority prior to the works commencing to ensure they represent the appropriate restriction periods for the circumstances at the time.

- Consultation with the Highways Stakeholder Group (see section 7) would be undertaken prior to movements occurring. Particular consideration will be given to identifying local events, road conditions, emergency service needs and other HGV movements such as milk tanker collections, buses, forestry vehicles etc that may result in conflict.

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- HGV/AIL would be escorted using convoy vehicles. They shall maintain a low speed at all times
- Movements would be restricted to one convoy per day of up to two HGV/AIL into site and one convoy per day of up to two HGV/AIL from site
- Movements would also be restricted to no more than for a total of 4 days in any week.
- On road parking would be reviewed and liaison would be undertaken with local communicates in advance of movements to ensure free passage is possible. The roads will be checked prior to HGV movements to ensure the roads are clear. In the unlikely event that the roads prove to be impassable the escort crew will liaise with residents to move parked cars and to safely direct the HGV(s) to a safe waiting location and manage the movements of other road users.
- Rolling road blocks will be considered for pinch points ~~such i~~including, but not limited to the bridge over the river Ribble at Grindleton, near to the three Millstones Inn at West Bradford and through Newton-in-Bowland.

4.2 Timing of construction traffic movements

General construction activities will be limited to Monday to Friday between the hours of 07:00 and 19:00 and Saturdays 07:00 to 13:00.

At this stage it is not possible to fully predict the detailed arrival and departure for HGVs at each site however as part of the Environmental Statement and associated Transport Assessment it has been assumed that traffic will be spread across the working day as follows:

- 06:45 to 08:00 and 18:45 to 20:00 (two shifts) – light movements and commuters
- 09:00 to 14:45 and 16:00 to 18:45 Monday to Friday and on Saturday between 08:00 to 13:00 – HGVs and abnormal load movements. Traffic will be restricted between 08:00 to 09:00 and 14:45 to 16:00 Monday to Friday to avoid traffic impact during school drop-off periods.

These times will be reviewed with the local schools and agreed with the relevant local highways authority near the commencement of construction activities to consider the most up-to-date school schedules.

As far as practicable an even distribution of deliveries is proposed throughout the day to avoid excessive hourly demand. The contractor will be responsible for managing the daily demand for deliveries and exports for their own fleet and that of their supply chain partners to ensure they comply with agreed daily traffic profiles (refer the delivery management system Section 6)

The contractor will be assisted in managing the daily profile of import /export by the provision of stockpile areas at the proposed compounds. These will facilitate advanced planning of deliveries and export, and enable as smooth an import/export profile as possible to be maintained.

There may be a need for abnormal load movements outside of the hours stated above in order to limit the potential for conflict with oncoming traffic. There may also be a need for HGV movements outside of the hours stated above during particularly critical construction activities[3]. Such movements will be agreed in advance with Lancashire County Council (LCC) Highways.

Commented [NO7]: I suggest we also add HGV movements for short duration but critical works such as the connections or concrete pours.

Commented [BW8R7]: Have added a line on HGVs and included footnote with examples

[3] Critical activities that may require support from construction movements outside of the proposed hours would include:

- TBM recovery - ground around the tunnel can become unstable during this process so 24 hour working is required to ensure the activity can be completed safely.
- Connection to the existing aqueduct - 24 hour working needed to minimise impact to the water distribution network since United Utilities will need to temporarily isolate parts of the existing Haweswater Aqueduct.
- Time sensitive concrete pours

Twelve hour construction shifts are anticipated during the tunnel drives at the launch sites (Newton, Construction Phases 2 – 4, and Braddup, Construction Phase 3) and at all sites during connection activities. Shift changeovers are likely to represent the daily am and pm peaks in light vehicle movements. It is proposed that shift changeover patterns will be staggered to regulate traffic intensity during this potentially busy period.

4.3 Route 3 Operation

Appendix B4 presents the results of daily operational models for HGV movements. The results illustrate anticipated operation during the peak activity periods. Also included in Appendix B4 are illustrative site layouts to show how HGV capacity on each site relates to anticipated peak operation.

The following sub-sections describe the key operational measures intended to mitigate the highways impact of the works during construction.

4.3.1 Park & Ride

To minimise the number of light vehicle movements on the local road network a park and ride facility containing 225 spaces will be established within an area opposite the Hanson Cement Ribblesdale Works, West Bradford Road (see Figure A-1-01 in Appendix A1). The area is an existing overspill carpark owned by Hanson Cement. This carpark is currently used during shutdowns of the Ribblesdale Works, discussions with Hanson have established that the area can be used by the project for the duration of works.

Construction personnel will arrive at the park and ride before leaving their personal vehicle and travelling to site on a minibus along route 3.

It is anticipated that the worst case requirement would be during shift change over when all three compounds are operational. At this point parking would be needed for both staff arriving to start a shift and the cars parked by the staff whose shift is ending. A peak of circa 250 personnel is anticipated (c.150 on the day shift and c.100 on the night shift). The available parking provision allows for a worst case of car occupancy of c.1.1 people (i.e. capacity is 90% of that required for one person per car), it is however anticipated that average car occupancy will be significantly higher (car sharing shall be encouraged and is proposed as a metric for contractor performance, see section 7.3.1).

4.3.2 Traffic flows

A proposed delivery booking system (detailed in section 6.1) and shift change over patterns will control the number of vehicles using route 3 at any particular time (also see sections 6.3 and 6.6).

4.3.3 Haul road usage

Control measures will be in place to restrict use of the temporary Ribble Crossing haul road to agreed users (Construction Traffic and land owners/tenants directly affected by the proposed temporary haul road). Lockable gates will be used to prevent use outside of proposed operational hours. Any control measures used will be appropriately located such that it should not result in construction traffic backing up on the existing highway to access the road.

4.3.4 Wide vehicles

The width of the existing roads to the north of the River Ribble is such that in places it will not accommodate two vehicles over 2.55m wide meeting in opposing directions without significant verge overrun. It is proposed to manage such movements to reduce the likelihood of this occurring.

A marshalling area for HGVs is proposed within Hanson Cement Ribblesdale Works, West Bradford Road (see Figure A-1-01 in Appendix A1). This is primarily intended for the control of route 3 traffic that is wider than 2.55m (AILs and tractor units with low loader step trailer [typical width 2.9m]). All such vehicles will assemble here prior to accessing the proposed compounds.

Appendix B4 includes an indication of the HGV capacity available at the proposed HGV marshalling area.

The use of escorted convoys of up to two HGVs is proposed for such vehicles. Communications between the construction compounds and the HGV marshalling area will ensure that no convoys will be dispatched that have the potential to be travelling in opposing directions along the narrower sections of the local road network.

- Analysis of the estimated vehicle movements suggests the need for such convoys will occur during circa 79 weeks of the programme.
- Over these 79 weeks the anticipated average daily total movements of such vehicles will be 7.5. This equates to two convoys to site and two convoys from site.
- A peak total of 29.5 movements per day of such vehicles is anticipated. This equates to 8 convoys to site and 8 convoys from site.

Appendix B4 presents the results of daily operational models for HGV movements. The models take into account journey times and proposed movement restrictions. The figure below is reproduced from appendix B4. It can be seen that the amber bars that represent wide HGV convoys travelling to site never overlap with the yellow bars that represent wide HGV convoys travelling from site.

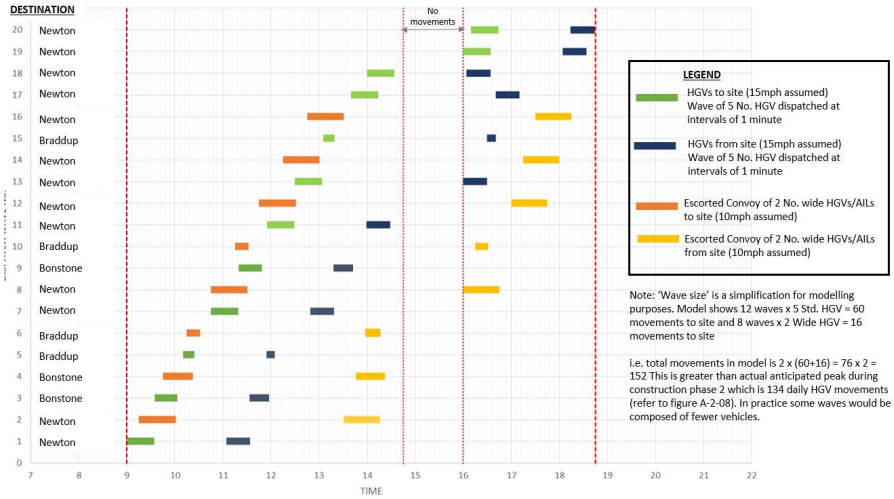

Figure 2: Standard and Wide HGV movements throughout the day during peak period

4.3.5 Road issues and proposed mitigation

Figures B-1-01 to B-1-08 in Appendix B1 provide an overview of swept path analysis. Appendix B1 includes discussion around the limitations of the figures presented and the rationale behind the proposals shown. The route is characterised by stretches of on street parking, and narrow sections of road at present through Waddington and along the B6478. Along many of the sections the straight alignment enables a safe informal contraflow to operate at such constrictions at present. A large proportion of the route is currently used safely by quarry HGV traffic. The approach taken has been to enhance existing operation so that it can continue to operate safely with the increase in HGV movements.

The following general measures are proposed:

- Proposed local road widening (RW08 – RW28) and reinforcement of existing passing places/parking areas (PP01 – PP02)

- Appropriate speed restrictions to ensure safe stopping distances to allow wider vehicles to slow and pass (see Figure B-2-16 in Appendix B2). Construction traffic shall adhere to all existing and proposed speed limits shown (including advisory limits).
- Extensive driver training and public education (see section 6).
- A proactive maintenance regime would be put in place to intervene before any road formation issues escalate as a consequence of any overrun.
- Vegetation clearance/maintenance
- Consistent messaging about the nature of construction HGV movements warning other road users that vehicles may slow or stop to allow oncoming vehicles to pass. This will include signage on vehicles, road signage and a wide range of communications with residents and any appropriate special interest groups
- Convoy system to minimise potential for wider construction vehicle to meet in opposing directions

The section of Route 3 along the existing highway to the north of the River Ribble through the north end of Waddington along West Bradford Road to the B6478 presents a number of challenges:

- There is limited existing pedestrian footway provision in this section
- There are a number of properties with frontages directly onto the highway
- The junction at the Higher Buck between West Bradford Road and the B6478 has limited space as well as visibility constraints

Options to avoid this stretch of road have been considered through further provision of temporary haul roads. The presence of an AONB, ancient woodland and the nature of the topography have meant that such options have been considered unfeasible.

Figures B-2-25 and B-2-26 in appendix B2 outlines proposed measures to enhance the existing way in which traffic operates in this area. The informal contraflows would be formalised though give way markings and priority signage. Give way areas would be secured as necessary through parking restrictions[4]. Routes for pedestrians would be demarcated as far as practicable to provide formal refuge from traffic for non-motorised users (NMUs).

Commented [NO9]: ...in areas where on street parking is not routinely present(?)

Commented [BW10R9]: Included a footnote to explain approach used

The proposed timing restrictions on construction traffic movements will also serve to reduce the risk associated with the increase in HGV traffic anticipated along this section of existing highway.

Section 6.6 outlines the HGV driver training proposals. This will include tool box talks which will identify the key hotspot areas, particular attention will be paid to this section of Route 3 through Waddington. A clear protocol will be established that ensures that construction traffic takes the utmost care. Construction traffic shall adhere to a 15mph speed limit through Waddington and give way to all NMUs.

For vehicles up to 13m in length it is proposed that construction traffic would be self-policing (c.94% of anticipated construction traffic using this part of the route). Larger vehicles, including the wide vehicle convoys described in section 4.3.4 above, would be assisted by a traffic marshal team. The traffic marshal team would:

- Provide assistance to NMUs – providing a visible presence that would communicate to both HGV drivers and NMUs helping vulnerable NMUs as necessary. They would advise NMUs that larger vehicles are approaching and direct them to appropriate refuge
- Control traffic through the use of stop/go signage at the Higher Buck junction.
    - For northbound construction traffic journeys south bound B6478 traffic would be held at a point to the north of the junction where larger vehicles can pass. Northbound B6478 traffic would be held in the proximity of the Higher Buck at a

[4] The approach has been to formalise existing arrangements. No parking displacement is anticipated - the give way areas are proposed in locations where it appears there is no routine on street parking at present.

location that ensures the larger northbound vehicles can safely negotiate the junction.

- For south bound construction traffic journeys northbound B6478 traffic would be held in the proximity of the Higher Buck at a location that ensures the larger northbound vehicles can safely negotiate the junction. A manned stop/go presence would be placed at each of the proposed give way areas to hold traffic to allow the larger vehicle to pass

Given the constraints in the area and the historic nature of the village the current proposals are considered proportionate. They will be subject to detailed design including appropriate further independent safety audits.

4.3.6 Enabling works temporary Traffic management

To enable construction of the local road widening and reinforcement of existing passing places/parking areas there may be a requirement for traffic management. The detail of what is required, when these will be required and their duration will be confirmed by the construction contractor following appointment.

4.4 Material exported to Waddington Fell Quarry

It is proposed that the loading of the HGVs will be monitored at the launch compounds and at the quarry to ensure that HGVs exporting surplus arisings are at full capacity. This will optimise the number of HGV trips generated for surplus arisings removal and ensure that overloaded trucks are prevented from accessing the public highway network (refer also to subsequent sections included under general mitigation).

To minimise the number of vehicle movements to the south of the Braddup compound entrance a closed loop system of HGVs for tunnel arisings movements is proposed (Appendix B4 illustrates the anticipated vehicle numbers and overnight parking proposals).

The quarry's current permitted vehicle movements are:

- Averaged over one year, no more than 60 HGVs shall leave the site in any one working day.
- No more than 85 HGVs shall leave the site on any one day.

The quarry has submitted a separate planning application for the reuse of material arising from the Bowland (TR3) and Marl Hill (TR4) Tunnels. This application proposes to, temporarily, increase HGVs leaving the site to a maximum of 175 in any one day with an average daily limit of 105. These uplifted figures are only anticipated to be necessary during construction phase 3 after which the limits would reduce to 100 and 65 respectively for construction phases 2 and 4. These movements are included in the figures presented in appendix A2.

4.5 Proposed Haul Road Junctions

The proposed construction compounds are all in excess of 500m from the proposed haul road junctions with the existing highways. Figure A-1-01 in Appendix A1 illustrates this. Control of access to site will be such that it should not result in construction traffic backing up on the existing highway to access site.

Appendix B2 includes draft details of the proposed junctions including swept path analysis and visibility splays. Where possible a conservative approach to visibility splays has been adopted allowing for higher design speeds than the proposed restrictions detailed in Figure B-2-16.

The current proposals are considered proportionate and will be subject to detailed design including appropriate further independent safety audits.

5. Existing Road Users

Proposed construction traffic routes maximise the use of higher classes of roads in order to minimise the impact to existing road users. The transport planning assessment (see section 5.1 below) suggests this approach will be appropriate.

Specific mitigation not addressed elsewhere in this document will include:

- Maintenance as necessary of potential NMU refuge areas as identified in appendix C2.
- Appropriate signage extended to all highway users such as pedestrians, cyclists and equestrian activities. Signage could include warnings for HGV drivers of the presence of non-motorised users within key areas and also signage for non-motorised users to warn them of the increased presence of HGVs in heavily used areas. The signage for these highway users will be agreed with LCC Highways
- Additional traffic management measures to be implemented as necessary should detailed design identify particular issues in relation to non-motorised road users
- As outlined in Section 6.6 HGV driver training will include tool box talks which will identify the key hotspot areas for non-motorised users, for HGV drivers to ensure their safety.

Sections 5.2 and 5.3 details specific users that may be affected and for whom the above mitigation will be applicable.

5.1 Transport Planning Environmental Statements

The Environmental Statements submitted as part of the planning process for the Proposed Bowland and Marl Hill Sections include Transport Planning Environmental Statement chapters (Chapter 16 in both documents). These chapters present an assessment of the potential for likely significant effects of the Proposed Bowland and Marl Hill Sections on traffic and transport. The assessments conclude that the proposed mitigation measures should ensure that effects upon local receptors are limited.

5.1.1 Representative vehicle movements versus anticipated vehicle movements

The assessments consider a credible worst case for concurrent activities on the road network (a period during construction phase 2). The assessments consider particular periods at the start and end of the day and a representative 12 hour period. For the representative 12 hour period it can be seen that the numbers of daily two way movements considered are higher than the average daily two way movements identified in Appendix A2 in all cases with one exception. The exception is along the B6478 between Newton and the Bonstone Haul Road Junction during construction phases 2 to 4. Figure A-2-06 is included in Appendix A2 for reference. It is considered that the nature of this existing link and the magnitude of variation will not affect the conclusions made in the assessment.

As set out in section 4.1 the maximum daily two way movements identified in Appendix A2 relate to which activities are being completed at each site at a particular time. As can be seen in Appendix A2 there are occasions where it is anticipated that these will exceed the representative 12 hour movements in the assessment. These typically relate to the short duration peaks in arisings movements anticipated along the B6478. It is considered that the nature of these existing links and the magnitude of variation will not affect the conclusions made in the assessment.

5.2 Public Transport

There is a potential impact on driver delay on identified bus services as a result of the increase in traffic movements along the proposed routes. 15 bus services have been identified which may be impacted upon.

These bus services tend to route between Blackburn and Preston, Skipton and Preston, Clitheroe and Blackburn and Clitheroe and Nelson. Across the 15 bus services, during weekdays, 70 bus

movements travelling along the route in an inbound direction (eastbound) and 75 bus movements travelling along the route in an outbound direction (westbound) have been identified. During Saturdays, 59 inbound and 59 outbound bus movements have been identified. The frequency is further reduced during Sundays, where it has been identified that 19 inbound and 20 outbound bus movements occur.

Error! Reference source not found.~~Appendix~~ C1 provides a summary of the identified services which may be affected along the proposed traffic routes. Figures C-1-02 and B-2-26 identify affected bus stops and proposed mitigation to any impacts.

Commented [NO11]: Missing

The proposed movement restriction period will serve to minimise the number of services that could potentially be affected.

Typically published timetables suggest existing services take c.15 minute to travel the 5 miles between Newton-in-Bowland and Waddington (i.e. average speed c. 20mph). The potential impact to driver delay on bus services is considered most likely to be as a consequence of the proposed escorted convoys (the modelling exercise results presented in Appendix B4 assumed a conservative average speed of 10mph for such convoys). Preventing convoys from travelling in opposing directions on the road network will reduce the potential for bus service impact.

Following detailed design the Construction Contractor will liaise with the relevant bus companies prior to start on site.

5.3 Walkers, Cyclists and Horse riders

Appendix C2 presents detailed discussion of the potential route interactions with walkers, cyclists and horse riders.

HGVs will have to ensure the safety of pedestrians, cyclists and equestrians in all places along the routes however a number of key hotspot areas have been identified in Appendix C2 that will need particular attention. This list is not exhaustive and other key hotspot areas may be identified during detailed design where they will be incorporated into the proposed mitigation as outlined in section 5 above. Section 6.6 outlines the HGV driver training proposals. This will include tool box talks which will identify the key hotspot areas. A clear protocol will be established that ensures that construction traffic takes the utmost care.

There are a number of Public Rights of Way (PRoW) which are intersected by the construction traffic routes to the Newton, Bonstone and Braddup compounds. Whilst it is acknowledged that users may encounter additional traffic when crossing these routes, it is not anticipated that there will be any restrictions or limitations on the use of these PRoWs. Figure C-2-01 provides an overview of where PRoWs are encountered along the route as well as a summary existing highway prow junction impact mitigation.

6. Management and Control: Processes and Measures

6.1 Delivery Management System

The contractor will be responsible for managing the daily demand for deliveries and exports for their own fleet and that of their supply chain partners to ensure they comply with agreed daily traffic profiles. They will facilitate this through the use of a delivery management system. This will include a booking system for deliveries. The booking system will require the contractor and supply chain partners to pre-book slots for deliveries in advance, with only a small number of slots reserved for late changes and unplanned deliveries thereby enabling a daily profile to be maintained within assessed levels.

As part of the measures to ensure compliance the contractor will consider any delivery arriving that has not been planned within the delivery management system a non-conformance and subject to refusal of entry to the site at the contractor's sole and absolute discretion.

6.1.1 Driver Communication

As part of the delivery management system the contractor will implement a logistics communication system for construction vehicle movements. This will also assist in enabling a daily profile to be maintained within assessed levels and allows for contingency if circumstances change and delivery arrangements need to be amended or cancelled at short notice.

The delivery management system will outline the requirements for adherence to delivery time windows throughout a given day and the delivery driver will be provided this information. Forward communication will be made by the haulier or vehicle driver to the specific site to ensure the vehicle will arrive at the correct time.

Best practice methods of providing the correct route information to HGV drivers are considered to utilise satellite navigation based routing apps that are preloaded into vehicle navigation systems and will be implemented as far as reasonably practicable.

6.2 Parking Restraint

Restricted employee parking will be permitted at the proposed construction compounds during the construction period. A minimal number of spaces will be reserved for senior staff and visitors, buses/mini-buses and registered disabled employees.

All parking bays located at the proposed construction compounds will be clearly marked to facilitate the monitoring of use and of 'double' parking. To prevent overspill parking onto adjacent highway, personnel will not be permitted to enter the site on foot unless by prior arrangement (for instance for genuine walking trips).

6.2.1 Non-motorised Access to Site

Personnel that can access the site by walking or cycling will not be discouraged. For cyclists, adequate parking (to be determined once employee demographics are established) and facilities will be provided. Walkers will be permitted direct access to site providing they can demonstrate they are within a reasonable access distance (i.e. they are not transferring from a car parked in a non-designated area off-site).

6.3 Route Compliance

To ensure that HGVs use the designated routes the following measures are proposed:

- Direction signing for the identified delivery routes will be implemented. Signage will be installed as per the requirements of ''The Traffic Signs Regulations and General Directions 2016''. The proposed temporary signage arrangements will remain in place until the

completion of the project element that requires the construction vehicle routes and the return to normal road conditions
- The delivery routes will be communicated by the contractors to all individuals and companies involved in the transport of materials and plant to and from site
- An information pack will be distributed to all individuals involved in the transport of materials. The pack will be a convenient size so it can be stored in a truck cab. The pack will include key information on delivery routes, procedures for dealing with emergencies, and disciplinary measures for non-compliance
- All suppliers and drivers will be required to provide details (registration numbers/markings) of their fleet to the contractor. This will allow for checking and enforcement of any reported breaches of the agreed delivery routes.

6.4 Managing Highway Condition

To ensure that the impact of HGV traffic will not have a long term negative impact upon the structure of the highway network a precondition survey will be undertaken of all sections of routes to be used by HGV traffic that are considered particularly vulnerable to the proposed increase in traffic. Specifically this will include:

- West Bradford Road, Waddington from the proposed junction with Ribble crossing temporary haul road to The Square, Waddington
- the B6478 from Waddington to the Hodder Crossing, Hallgate Hill
- Newton Road at the proposed crossing point at the Newton Compound

The following will be implemented:

- A pre-condition survey of the carriageway surface, edges and verges and associated infrastructure on the nominated haulage and access routes will be completed and its findings recorded and shared and agreed with LCC prior to start on site. The survey will utilise cores of the existing highway asset to assess the existing road condition and necessity for any 'preventative maintenance' identified. In addition to undertaking cores a visual inspection and photographic record will also be undertaken
- The inspected sections will be also be subject to a visual inspection and photographic records of the carriageway haunch, recognising the limitations on space available for HGVs to pass along some sections of the routes
- Periodic highway condition inspections will be conducted over an agreed life cycle of the project by the contractor at a frequency and in a format agreed with LCC and the findings promptly shared with LCC
- Any works that are deemed required to maintain the highway standards for all road users will be at the agreement of the contractor and LCC
- A wheel washing facility will be provided at all construction compounds. The use of road sweepers will be deployed as required to keep the carriageway surface clean although this is only anticipated in the locality of the construction site access points and along the B6478 between the Hallgate Hill junction and Braddup Compound entrance. Additionally all temporary haul road surfaces will include hard surfacing and as appropriate loads will be covered.

6.4.1 Gritting

For the existing highway network that is used by the proposed routes all roads at the time of writing are priority roads for salting and snow clearing by LCC. Given the increase in traffic frequency and to minimise the potential for adverse weather to impact construction, additional provision (either via funding or provision of other appropriate resources) shall be agreed with LCC prior to start on site.

6.5 Traffic Management

Traffic management on all highways and roads will comply with the UK Government's Code of Practice 'Safety at Streetworks and Roadworks' (DfT, 2013) and any other relevant legislation and guidance as appropriate at the time of implementation. Traffic management will be agreed with LCC prior to the commencement of works.

Traffic management signage will be in accordance with the Traffic Signs Regulations and General Directions (TSRGD) 2016 and Traffic Signs Manual Chapter 8.

6.6 Driver Training

The Contractor will establish and maintain a HGV Driver Training Programme. The programme will have documented procedures. The Contractor's procedures for driver training will provide drivers with clear and concise guidance and assistance relating to the core aspects of a driver's responsibilities, tasks and risks. This process will be monitored periodically for compliance.

Professional HGV and PCV drivers are required, by law, to obtain a Certificate of Professional Competence and must complete 35 hours of periodic training every five years to retain the certificate. Upon meeting this criterion drivers are issued with a Driver Qualification Card (DQC) and are required to carry it at all times while driving professionally.

The training programme will offer appropriate training to drivers to help them to maintain their Certificate of Professional Competence, this training could be tailored to address some of the challenges of driving along the proposed routes, such as driving during adverse weather. All drivers of HGVs and PCVs will be required to present a valid DQC to security when delivering to any site.

The Contractor's methods for undertaking HGV driver training will also include the following:

- All HGV and PCV drivers will have to complete the contractor's HGV Driver Induction that will include explicit guidance upon the safe use of the proposed routes
- The proposed information pack (Section 6.3 above) will include a personal guidance document (a "HGV Driver's Handbook") the induction procedure will include clear guidance upon what is included in the pack
- The information pack shall include an explicit NMU protocol which will be reinforced during driver induction and subsequent tool box talks
- All HGV drivers will have to attend a mandatory prestart briefing such as a Tool Box Talk. The purpose of which will be to communicate a sense of responsibility, encouraging higher driving standards by explaining the importance of compliance. The Tool Box Talk will also provide drivers with information about key hotspot areas for non-motorised users along the routes
- At the end of each Tool Box Talk, a declaration will have to be signed by each driver in attendance and retained by the Contractor
- Frequent HGV drivers working on the project will have to participate in a mandatory toolbox talk as a minimum once per calendar month
- Any HGV driver on the project failing to satisfy these requirements will be refused entry to all construction sites until they have complied with the minimum requirements
- The Contractor will be responsible for the routine audit of its Haulage Contractors, and of their sub-contractors, to ensure these requirements are being met
- Any driver of any vehicle in contravention of the project rules established for control of use of local haulage and access routes will be subject to project disciplinary procedures. This process will be made clear to all at project induction.

6.7 Network Resilience

It is possible daily HGV traffic demand could impact on the highway network resilience during unplanned events such as flooding, accidents etc. These concerns equally apply to significant local planned events such as the Hodder Valley Show and Newton Duck Race. There is also the possibility that should completion of the proposed Ribble Crossing be delayed the implications for the HARP could pose an unacceptable risk to the security of the water network. The table below provides a summary of these concerns, and details measures proposed to mitigate these impacts.

Event	Mitigation
Managing traffic demand during bank holidays and planned events.	Stockpiling will enable advanced planning to ensure there are limited HGV movements during bank holidays and planned major events.
Managing traffic demand during major incidents such as accidents on the highway.	The contractor will liaise with local Police to establish a line of communication with regard to road traffic incidents. Should the contractor be notified of an incident then they will liaise direct with suppliers to suspend HGV deliveries along affected routes. Those deliveries en route from the sites /suppliers that cannot be recalled will then be accommodated onsite or at the HGV marshalling area until the incident is cleared.
Incidents involving HARP HGV traffic blocking the highway, such as, breakdowns, accidents, etc.	Contractors/suppliers will be expected to only utilise hauliers that have existing arrangements with recovery services.
Roads that are closed/unpassable e.g. heavy snow, flooding, etc.	During periods where roads may be closed or become unpassable by HGV traffic, the strategy of maintaining a stockpile of imported material and material for export will allow hauliers to suspend deliveries until such point as the roads are cleared. The approach may not negate the potential for adverse impact upon the construction programme depending upon the severity of the event but contractual arrangements will be in place to manage this.

Table 3 Planned and unplanned event mitigation

6.8 Managing Road Safety

Managing road safety underpins all the mitigation outlined in this document. United Utilities believe nothing we do is worth getting hurt for. To bolster this it is proposed that a strategy to mitigate potential emerging road safety issues is embedded within the CTMP.

This will place a requirement on the contractor to record all accidents and near misses and regularly report to transport stakeholders (see Section 7). These reports will be supported by police data on accidents and, if emerging issues were identified, proposals will be progressed and if approved (refer

to section 7), funding will be made available to implement targeted mitigation under an agreement with the contractor.

It is anticipated intervention will attempt to minimise 'hard' highway engineering solutions. This is in line with an aspiration to establish a sustainable and proportionate approach to help ensure that the character and distinctiveness of the AONB is retained as far as is reasonable practicable. Instead the focus will be applied to education, training and publicity. The types of mitigation that could be employed include:

- Additional police enforcement (e.g. mobile cameras on the B6478)
- Public awareness of the dangers of overtaking
- Training – e.g. funding some Pass Plus driving course aimed at appropriate demographics.

7. Monitoring, Review and Improvement

7.1 Monitoring Strategy

The HGV and construction worker movements associated with the proposal will be continuously monitored through one of or any combination of the following:

- the use of a permanent classified Automatic Traffic Counter (ATC) positioned at the proposed compound and HGV marshalling area accesses
- Automatic Number Plate Recognition (ANPR) cameras positioned at the proposed compound and HGV marshalling area accesses
- physical records being taken by site entrance gate staff

Technological means of monitoring haul route compliance will be investigated including:

- The potential to install ANPR cameras at key locations on the highway network. If feasible/desirable digital ANPR data could be shared in real-time with LCC highways for compliance monitoring purposes
- The use of digital systems such as GPS tracking being stipulated as mandatory for use within the contractors and hauliers vehicles.

If more advanced technological means do not prove to be a feasible option a simple ATC loop in appropriate locations will be used to detect an increase in HGV trends.

It is proposed that for the duration of the five construction phases, monthly traffic count data will be collated by the contractor. Undertaking this monitoring on a monthly basis will ensure that any issues are identified at an early stage and dealt with promptly; in addition discrete data can be extracted to address any stakeholder complaints.

Contractors will be responsible for maintaining detailed delivery schedules and these will serve to augment the traffic counts to give a complete evidence base.

Contractors will be responsible for ensuring that details of any accidents or near misses on the public highway are reported and collated.

The monitoring of personnel movements will take the form of instigated spot surveys to determine car park occupancy and collation of staff feedback and stakeholder complaints.

Appointed construction contractors will adopt a robust monitoring system to ensure all proposed speed limits are adhered to. This will be undertaken by recording physical measurements of vehicles on the highway at random intervals.

It is proposed that construction workers, contractors and suppliers will be provided with appropriate communications channels (for example a dedicated email address) to allow for feedback or ideas and recommendations to address any gaps or constraints in the CTMP.

7.2 CTMP Management Structure

A management structure will be developed to oversee the implementation of the CTMP, monitoring and enforcement of construction traffic movements.

7.2.1 HARP Highways Stakeholder Group

A Highways Stakeholder Group (HSG) will be convened throughout the construction of the development between the construction contractor(s) and appropriate representatives from a range of departments/disciplines from the following organisations on a bi-monthly basis or as agreed by the group, dependent on the progress of work:

- Contractor
- United Utilities
- Lancashire County Council
- Specialist ad-hoc attendees, such as Highways England, transport providers and other elements of the supply chain, local community representatives, emergency services and other developers progressing major schemes within the area.

The group's principal responsibility will be to review monitoring reports and direct action as necessary.

This Stakeholder Group will facilitate the successful operation of both the local and strategic highway networks during the construction period, particularly in regard to the following:

- Understanding the coincidence of other construction programmes
- Understanding the potential for coincidence of construction works in the highway associated with the Proposed Bowland and Marl Hill Sections and other construction projects e.g. any requirements for closure
- Understanding the planned maintenance programmes of LCC Highways, Highways England and other undertakers that may have a bearing on the Proposed Bowland and Marl Hill Sections construction programmes.

7.2.2 Local Community Input

Local community groups (e.g. Parish Councils, special interest groups) will be made aware of the HSG as a vehicle for collating and investigating enquires from the public.

The contractor will engage local community groups in a communication and dialogue process. The following will be implemented by the contractor or acceptable variants thereof:

- Establish a community engagement group, which will meet at regular intervals throughout the duration of the project. Representatives of local community groups will have direct engagement and dialogue with the contractor to express views and work collaboratively along with the HSG to resolve any issues
- The contractor's community engagement group will provide project updates and status and inform the community on upcoming events on the project that may have an impact and develop the best mitigating solutions
- The contractor's community engagement group will provide regular communication using digital media, social media, letter drops, newsletters, etc.
- A free phone community contact number will be available 24 hours a day 7 days a week for the duration of the works along with other appropriate communications channels (e-mail, social media platforms, etc.). These communication channels will be made available prior to the commencement of the project. The contractor's community engagement group will keep records of any communications and ensure they are made available to the HSG.

7.2.3 Travel Plan Co-ordinator

A Travel Plan Co-ordination team led by Travel Plan Co-ordinator (TPC) will be appointed by Contractor and contact details will be submitted prior to the commencement of works. Their responsibilities will include:

- managing the implementation of the CTMP
- report the monitoring of the CTMP to the HSG
- to act as a point of contact for the local community (both in leading the community engagement group and handling direct communications) and report feedback to the HSG
- to act as a point of contact for construction workers, sub-contractors and the general public
- Engage in direct and regular dialogue with Lancashire Police and other relevant emergency service stakeholders to implement and comply with the CTMP. They will be in regular

communication with the police to manage abnormal load and STGO regulation vehicle movements

In addition, the TPC will establish an open and collaborative dialogue with LCC that could be conducted at any time via email, phone and other means of communication as appropriate.

7.2.4 Communication

The Travel Plan Co-ordinator will act as a key link between all parties involved with the CTMP. They will report on the monitoring survey data of the CTMP to the HSG, as well as reporting feedback from the local community, contractors, construction workers and staff groups. They will also then be responsible for communicating any corrective action taken by the HSG.

7.3 Review of the Strategy

The objective of the review will be to assess the success of the CTMP and to identify the potential for further initiatives. The TPC will be responsible for undertaking the review and for producing a quarter year monitoring report. Successive reports will form appendices to the CTMP document available to stakeholders on request.

Data recorded from the monitoring process will be drawn together to produce a quarterly monitoring report, thereby allowing the TPC to identify effective / ineffective measures and the requirement for any remedial action to be undertaken to achieve the agreed targets. The results will then be reported to the HSG so that it may be reviewed and any corrective action can be agreed.

The review process will also allow the appropriateness of the monitoring programme to be assessed and amendments to be proposed where necessary.

7.3.1 Quarterly Monitoring Report

The quarterly monitoring report will be structured using the following headlines:

- Introduction and Background – this should provide detail with regards to the number of construction workers at each site (total and per shift) and number of parking spaces provided, etc.
- Results of Surveys and Monitoring – the TPC should detail the results of the surveys and monitoring that have been undertaken. Where appropriate, the results of the surveys undertaken will be compared to indicators defined in the CTMP, including current travel situation and target levels. Data obtained from the surveys should be included as an appendix
- Achievements – this should include the work undertaken over the previous three month period with evidence and examples
- Specific Measures – this should detail how all measures from the CTMP have been implemented in terms of infrastructure, policy and promotion for each specific travel mode and strategy (walking, cycling, Park and Ride, car sharing plus general measures and working practices). Evidence of how each measure has been implemented will be required
- Summary – the TPC should detail whether the CTMP is on track to meet its targets and if not, why not
- Future Plan – this should detail the CTMP for the next three month period to include any specific outcomes or desired results with any additional measures that are to be included to remediate action.

8. Enforcement

8.1 Introduction

This section provides a summary of the mechanisms that will ensure that the CTMP is effectively enforced.

8.2 Potential Breaches

To ensure that the aims of the CTMP can be effectively enforced it is important to define what will constitute a breach. The CTMP therefore considers that the following will constitute a breach of the CTMP whereby corrective measures will be required:

- Construction workers overspill parking on the public highway, rather than parking in marked bays at the HARP sites
- HARP construction traffic exceeding agreed thresholds
- HARP construction traffic operating outside of agreed hours
- HARP construction HGVs and buses not adhering to the agreed access routes
- HARP construction traffic being driven inappropriately, e.g. speeding (including not following advisory limits)
- HARP construction traffic and buses not displaying an agreed unique identifier.
- Unauthorised waiting on public highway

8.3 Corrective Process

On receipt of a report of a potential breach the TPC will investigate the circumstance and compile a report for the HSG. The report will outline the outcome of the investigation and what corrective action had been implemented. A three stage correction process is proposed:

- Stage one – This will be a formal contractor warning at this stage
- Stage two – If a further material breach is identified the contractor will be given a further warning and required to produce an action plan to outline how the issue will be rectified and any additional mitigation measures proposed
- Stage three – Should further breaches still occur the contractor will be required to remove the offender from site and the contractor/supplier will receive a formal warning. Any continued breaches by individuals of the supplier/contractor will be dealt with by the formal dispute procedures of the contract, which shall be fit for purpose.

Individual employee breaches will be addressed through UK employment law whereby the three stage process outlined will form the basis for disciplinary proceedings.

Stage one and two of the corrective process may require any offending individual to attend a driver improvement course during their own time. They may not be able to resume work on the HARP until a relevant course has been attended. This will apply to drivers of HGVs and PCVs.

8.4 Contract Intervention

Provisions of the CTMP will form part of the contractual agreement between United Utilities and its contractors. Each will therefore need to comply with required aspects of the CTMP, individually and together, examples of which are set out as follows:

- agreed HGV thresholds
- the haul routes
- the booking system
- the monitoring regime
- parking management
- the AIL management
- the corrective measures

Appendix A1 – Proposed Routes

Figure A-1-01: Proposed Access Routes (MNA_A-1-01)

Appendix A2 – Daily Two Way Vehicle Movements

Appendix A3 – Anticipated Vehicle Types

Appendix B1 – Swept path results and highway modifications

Figure B-1-01: Swept paths for proposed routes - B6478 Hallgate Hill Junction to Chapel Croft (MNA_B-1-01)

Figure B-1-02: Swept paths for proposed routes - B6478 Hallgate Hill (Chapel Croft - Bonstone Access Junction) - Slaidburn Road (MNA_B-1-02)

Figure B-1-03: Swept paths for proposed routes - B6478 Slaidburn Road (Smelt Mills Clough/Bonstone Brook) (MNA_B-1-03)

Figure B-1-04: Swept paths for proposed routes - B6478 Slaidburn Road (Waddington Fell Quarry/ Titrington Brow) (MNA_B-1-04)

Figure B-1-05: Swept paths for proposed routes - B6478 Slaidburn Road / Fell Road (MNA_B-1-05)

Figure B-1-06: Swept paths for proposed routes - B6478 Slaidburn Road (Braddup Access Junction) (MNA_B-1-06)

Figure B-1-07: Swept paths for proposed routes - B6478 Slaidburn Road (North Waddington) (MNA_B-1-07)

Figure B-1-08: Swept paths for proposed routes - East of Waddington West Bradford Road (MNA_B-1-08)

Note relating to Appendix B1

The swept figures listed above are at 1:2500 scale. The image resolution limits the level of detail that can be seen.

At a number of locations the swept path analysis results along the B6478 north of Waddington appear to suggest HGVs may not be able to use the route, implying a need to widen the entirety of the stretches where the initial swept path analysis suggests there is an issue, however:

- This could create a new highway safety issue - widening the road may lead to an increase in traffic speeds and result in an increase in accident frequency and/or severity
- There would be significant environmental impact within the AONB

The existing usage by quarry HGV traffic suggest the issues may not be as extensive as the figures suggest (traffic count data suggests c.200 HGVs use it per day).

In relation to road safety

- Crashmap[5] data indicates 3 slight and 1 serious incidents occurred over the 5 year period inclusive of 2016 to 2020
- MARIO[6] data indicates (summary table shown): 4 slight and 1 serious collisions have occurred from 2017 to 2021.
- Existing speeds: data suggests c.30 to 55 mph depending on visibility/width of road.

Anticipated construction HGV numbers during the busiest phases will average at c.170 with peaks up to c.300.

[5] https://www.crashmap.co.uk/ [ACCESSED 10.12.2021]

[6] http://mario.lancashire.gov.uk/agsmario/default.aspx [ACCESSED 10.12.2021]

Date	Severity	Vehicle Involved	Vehicle Types	Casualties
17/08/2019 11:10	Slight	2	Car; Pedal Cycle;	1
14/02/2019 14:40	Slight	1	Car;	2
01/07/2021 20:30	Slight	2	Car; Car;	1
03/05/2016 17:20	Slight	2	Other motor vehicle; Car;	1
31/03/2017 04:15	Serious	1	Car;	1

Table 4 Summary of Mario collision data

Given the above the approach taken has been to consider the existing mode of operation: the road broadly operates safely now, enhancement may allow it to continue to operate safely with the increase in HGVs.

The swept path will not take into account the following:

- road may be wider in places than OS mapping suggests
- in places the verges are clear of obstructions to wing mirrors
- verge overrun occurs in places
- visibility is such in places that safe informal contraflows operate at constrictions or vehicles slow so they can pass either overrunning the verge or maximising use of available hard standing)

The approach taken is that localised road widening would reduce the likelihood of verge overrun and/or facilitate further locations where informal contraflows/slow passing can occur. Additionally the following is proposed to mitigate the impact of the proposed additional HGV movements:

- Speed reductions proposed along with regular road widenings.
- Extensive driver training and public education is proposed.
- A proactive maintenance regime would be put in place to intervene before any road formation issues escalate as a consequence of any overrun.

The engineering assessment has used the initial swept paths to identify locations where such localised road widening may be appropriate.

These locations have then been reviewed: informed by site visits, google street view and further interrogation of the swept paths. Engineering judgement has then been used to identify which locations will provide a proportionate improvement to existing operation.

Each location has considered:

- Signs of existing over run – in most cases if present then widening to be put in place
- Proximity of potential points where HGVs can pass (if present then road modification may not be required):

- Are there physical obstructions either to wing mirrors, or that would impact wider vehicles?
- Is swept path pessimistic?
- If considering the above it is likely vehicles can pass but the margin of safety is limited are there signs of overrun?

- Sight lines and topography – forward visibility of 90m has been used as basis of assessment (design speed 60kph, 37 mph CD 109 Table 2.10) with consideration to 1 step relaxation to 70m if considered necessary and appropriate
- Other road activities/ existing road markings or signage – e.g. would farm activities prevent use of available space? Are there overtaking restrictions or move left arrows (consider impact of less frequent c.3m wide low loaders)? Are there points where traffic is likely to build up (e.g. cattle grids)?
- Is there an existing hardstanding that could be enhanced/strengthened?
- Potential significance of other impacts – Environmental impact (e.g. rare habitats, high quality trees), Land Owner Impact (e.g. buildings, walls, significant objections)

Appendix B2 – Proposed Haul Road Junctions and Other Highways Measures

Figure B-2-01: Proposed Junction Swept Path - Braddup Junction (MNA_B-2-01)

Figure B-2-02: Proposed Marl Hill Section – Braddup Compound Access Design - B27070CQ-JAC-XX-DR-C-TR4_VS-1008 (MNA_B-2-02_ B27070CQ-JAC-XX-DR-C-TR4_VS-1008)

Figure B-2-03: Proposed Braddup Junction Daily HGV Movements (MNA_B-2-03)

Figure B-2-05: Proposed Marl Hill Section – Bonstone Compound Access Junction with B6478 Access Design - B27070CQ-JAC-XX-DR-C-TR4_VS-1007 (MNA_B-2-05_ B27070CQ-JAC-XX-DR-C-TR4_VS-1007)

Figure B-2-06: Proposed Bonstone Junction Daily HGV Movements (MNA_B-2-06)

Figure B-2-07: Proposed Bowland Section – Temporary Haul Road Hallgate Hill Junction – Vehicle Tracking – Three Axle Loader (FH16 Assumption) - B27070CQ-JAC-XX-DR-C-TR3_VT-1124 (MNA_B-2-07_ B27070CQ-JAC-XX-DR-C-TR3_VT-1124)

Figure B-2-08: Proposed Bowland Section – Temporary Haul Road – Hallgate Hill Access Design - B27070CQ-JAC-XX-DR-C-TR3_VS-1006 (MNA_B-2-08_ B27070CQ-JAC-XX-DR-C-TR3_VS-1006)

Figure B-2-09: Proposed Junction Access Design - Hallgate Hill Junction - Proximity to Tree (MNA_B-2-09)

Figure B-2-10: Proposed Hallgate Hill Junction Daily HGV Movements (MNA_B-2-10)

Figure B-2-11: Proposed Bowland Section – Newton-in-Bowland Compound – Vehicle across Junction (staggered) – Standard Vehicle Tracking - B27070CQ-JAC-XX-DR-C-TR3_VT-1108 (MNA_B-2-11_ B27070CQ-JAC-XX-DR-C-TR3_VT-1108)

Figure B-2-12: Proposed Bowland Section – Newton-Bowland Compound – Access Design - B27070CQ-JAC-XX-DR-C-TR3_VS-1002 (MNA_B-2-12_ B27070CQ-JAC-XX-DR-C-TR3_VS-1002)

Figure B-2-13: Proposed Bowland Section – Newton-in-Bowland Compound South – Access Design - B27070CQ-JAC-XX-DR-C-TR3_VS-1003 (MNA_B-2-13_ B27070CQ-JAC-XX-DR-C-TR3_VS-1003)

Figure B-2-14: Proposed Newton Road Junction Daily HGV Movements (MNA_B-2-14)

Figure B-2-16: Proposed Speed Limits (MNA_B-2-16)

Figure B-2-17: River Ribble Haul Road – Access Design – Before River Ribble (A59, Pimlico Link Rd, West Bradford Rd) – Vehicle Tracking – Three axle low loader B27070CQ-JAC-XX-DR-C-TR4_VT-1130 (MNA_B-2-17_ B27070CQ-JAC-XX-DR-C-TR4_VT-1130)

Figure B-2-18: River Ribble Haul Rd – Access Design – After River Ribble (West Bradford Rd, Waddington Village, Slaidburn Rd) – Vehicle Tracking – Three axle low loader B27070CQ-JAC-XX-DR-C-TR4_VT-1132 (MNA_B-2-18_ B27070CQ-JAC-XX-DR-C-TR4_VT-1132)

Figure B-2-19: River Ribble Haul Rd – Access Design – Before River Ribble A59, Pimlico Link Road, West Bradford B27070CQ-JAC-XX-DR-C-TR4_VS-1010 (MNA_B-2-19_ B27070CQ-JAC-XX-DR-C-TR4_VS-1010)

Figure B-2-20: River Ribble Haul Road – Access Design – After River Ribble West Bradford Rd, Waddington Village, Slaidburn Rd B27070CQ-JAC-XX-DR-C-TR4_VS-1011 (MNA_B-2-20_ B27070CQ-JAC-XX-DR-C-TR4_VS-1011)

Figure B-2-21: River Ribble Haul Road – West Bradford Rd before River Ribble – General Arrangement B27070CQ-JAC-XX-DR-C-TR4_GA-1212 (MNA_B-2-21_ B27070CQ-JAC-XX-DR-C-TR4_GA-1212)

Figure B-2-22: River Ribble Haul Road – West Bradford Rd Going towards Waddington – General Arrangement B27070CQ-JAC-XX-DR-C-TR4_GA-1213 (MNA_B-2-22_ B27070CQ-JAC-XX-DR-C-TR4_GA-1213)

Figure B-2-23: B27070CQ-JAC-XX-DR-C-TR3_GA-1202 Proposed Junction - Newton Road Signage & gateway markings

Figure B-2-24: B27070CQ-JAC-XX-DR-C-TR3_GA-1203 Proposed Junction - Newton Road Signage & gateway markings

Figure B-2-25: Proposed Bowland Section Braddup, Bonstone and Newton Compounds – Mitigation Measures – Waddington - West Bradford Rd to Slaidburn Rd - B27070CQ-JAC-XX-DR-C-TR4_WV-1106 (MNA_B-2-25_B27070CQ-JAC-XX-DR-C-TR4_WV-1106)

Figure B-2-26: Proposed Bowland Section Braddup, Bonstone and Newton Compounds – Mitigation Measures – Waddington - West Bradford Rd to Slaidburn Rd - B27070CQ-JAC-XX-DR-C-TR4_WV-1104 (MNA-B-2-26_B27070CQ-JAC-XX-DR-C-TR4_WV-1104)

Figure B-2-27: Proposed Speed Restrictions - Slaidburn Rd to Hallgate Hill Section 1 & 2 - B27070CQ-JAC-XX-DR-C-TR4_GA-1214 (MNA_B-2-27_B27070CQ-JAC-XX-DR-C-TR4_GA-1214)

Figure B-2-28: Proposed Speed Restrictions - Slaidburn Rd to Hallgate Hill Section 3 & 4 - B27070CQ-JAC-XX-DR-C-TR4_GA-1215 (MNA_B-2-29_B27070CQ-JAC-XX-DR-C-TR4_GA-1215)

Figure B-2-29: Proposed Speed Restrictions - Slaidburn Rd to Hallgate Hill Section 5 & 6 - B27070CQ-JAC-XX-DR-C-TR4_GA-1216 (MNA_B-2-29_B27070CQ-JAC-XX-DR-C-TR4_GA-1216)

Figure B-2-30: Proposed Speed Restrictions - Slaidburn Rd to Hallgate Hill Section 7 & 8 - B-2-30_B27070CQ-JAC-XX-DR-C-TR4_GA-1217 (MNA_B-2-30_B27070CQ-JAC-XX-DR-C-TR4_GA-1217)

Figure B-2-31: Proposed Speed Restrictions - Slaidburn Rd to Hallgate Hill Section 9 & 10 - B-2-30_B27070CQ-JAC-XX-DR-C-TR4_GA-1218 (MNA_B-2-30_B27070CQ-JAC-XX-DR-C-TR4_GA-1218)

Figure B-2-32: Proposed Speed Restrictions - Slaidburn Rd to Hallgate Hill Section 11 - B-2-30_B27070CQ-JAC-XX-DR-C-TR4_GA-1219 (MNA_B-2-30_B27070CQ-JAC-XX-DR-C-TR4_GA-1219)

Appendix B3 – Abnormal Indivisible Load Review

Abnormal Indivisible Load Movements

Introduction

Route 3 will be used for all AIL movements. The following sets out the rationale for this approach and some additional considerations that the Contractor will address as the CTMP is developed.

Abnormal Loads Services' Findings and Adopted Route

Abnormal Loads Services (ALS) were engaged on United Utilities behalf by Costain (Costain providing United Utilities with Early Contractor Involvement for the HARP). ALS's remit in relation to the MNA was the provision of route survey investigations to identify feasible access routes for the anticipated AILs focusing on the anticipated largest indivisible load (TBM Shield haulage). The review was completed in order to obtain advice on which route or routes are most suitable.

ALS provided a report (Route Survey Report, September 2020) that included a section that addresses the MNA (Section 3.2). The report also covers elements of HARP that relate to separate planning applications that are not applicable to the MNA so the report is not included in full here. The key findings relevant to the MNA are summarised below.

Figure B-3-01 in Appendix B3 shows the range of routes considered. ALS considered that the majority were not suitable. In particular the nature of many of the existing River Ribble crossings and the extent of road modification needed ruled these options out. The route ALS identified in their report as the most practical has been discounted. This was via Sawley (Option 3-E).

Along this discounted route ALS identified the following as being applicable to the whole route:

- It is advised that extensive tree surgery will be required on all roads on the route (this may attract objections from local residents)
- There are a number of structures along the route (culverts and bridges) for which the capacity is unknown. In the event there are structural limits it is anticipated that these structures can be "Overbridged" utilising temporary works (see Figure B-3-02)
- Temporary parking restrictions when AIL movements are proposed will be necessary to permit the sweep of the vehicle in a number of locations.

These considerations are also applicable to Route 3.

For Option 3-E the crossing of the River Ribble is the first area that is discussed in detail by ALS. They anticipate that the conventional TBM configuration considered will not be able to navigate the bridge without localised widening works (Figure B-3-02 illustrates this). They suggest that a suitable transhipment location should be sourced prior to the bridge and the TBM Section transferred to a shorter vehicle configuration. [Note: this may result in increasing the overall height of the vehicle to approx. 5.50m. At this increased height any overhead wires telecoms / electrical will have to be lifted or isolated. Swept path analysis will still be required to confirm this.]

Along Option 3-E, Sawley Road passes closely to the River Ribble wall. If Option 3-E is used ALS recommend the road should be assessed to check that it can withstand the pressure of the vehicle.

ALS concluded that Option 3-E (the route via Sawley) provides the best route to support the current vehicle configuration which is road going and legal, without the need for any bridge modifications. They highlight that this route does however include various pinch points between Sawley and Waddington which will need to be addressed. An alternative route via Chatburn (Option 3A) was discounted by ALS because of the limitations of Grindleton Bridge (East View).

There are two possible ways in which the Grindleton Bride limitation might be overcome:

- One will be to widen the approaches to Grindleton Bridge
- ALS suggest that another will be similar to that proposed for the Sawley crossing. It will be to tranship the TBM section onto a configuration that could navigate the crossing. In this

instance it will necessitate the use of a configuration using a self-powered remote power pack unit which attaches to the rear of the trailer, this will permit the removal of the tractor unit but still powers the trailer configuration to travel legally on a public road (the example system cited is produced by Enerpac). By removing the tractor unit and reconfiguring the trailer, the weight and length of the means of navigation could be reduced and the existing bridge crossed. Once the bridge has been crossed the tractor unit could be re-attached and the load could progress onwards to Waddington.

Independently of the ALS exercise, Jacobs were engaged by United Utilities to complete swept path analysis and as necessary develop appropriate indicative mitigation.

Figure B-3-02 shows the swept path for the TBM along the discounted Option 3-E route at the Sawley Ribble crossing and shows, as highlighted in the ALS report, that the proposed TBM configuration cannot cross the bridge.

Figure B-3-03 shows the swept path for Option 3A at the Grindleton Bridge Ribble crossing and the need for widening.

The Jacobs swept path analysis also identified a need for significant road widening at the junction between East View and Grindleton Road (see Figure B-3-04).

The proposed Route 3 whilst necessitating significant works across the Ribble valley avoids the need for these modifications and minimises the impact to the residential areas in Clitheroe, Sawley, Grindleton and Waddington.

Travelling towards the proposed construction compounds along Route 3 West Bradford Road in Waddington and turning right onto Slaidburn Rd / The Square / B6478, ALS suggested that the removal of bollards is required outside the Higher Buck Inn. The initial swept path analysis completed by Jacobs suggests this may not be required (see Figure B-3-05). (Note: As stated elsewhere the specification of the TBMs and vehicle / trailer configurations will be determined by the appointed contractor(s) and a specific more detailed assessment will be completed in due course).

The swept path assessments indicate that some of the wider AILs will require temporary traffic management, the timing of movements will be agreed to minimise disturbance/disruption.

Haweswater Aqueduct Resilience Programme

Appendix B4 – Operational Overview

MNA_B-4.pdf

Appendix C1 – Affected Bus Routes

Figure C-1-01: Affected Bus Stop Overview and Impact Mitigation (MNA-C-1-02)

Identified bus services which may be affected as a result of the Proposed Bowland and Marl Hill Sections

Bus Service Number	Bus Operator
25	Pilkington Bus
25A	Pilkington Bus
59	Stagecoach
66	Boomerang Travel Ltd
67	Pilkington Bus
109	The Burnley Bus Company
280	Stagecoach
462	P&S Nelson
616	Longridge Coaches
617	Longridge Coaches
622	Hodsons Coaches
623	Pilkington Bus
643	Hodsons Coaches
852	The Burnley Bus Company
903	P&S Nelson

Appendix C2 – Affected Public Rights of Way

Figure C-2-01: PRoW Overview and Existing Highway Prow Junction Impact Mitigation (MNA_C-2-01)

Affected Public Rights of Way

There are a number of Public Rights of Way (PRoW) which are intersected by the construction traffic routes to the Newton, Bonstone and Braddup compounds. Whilst it is acknowledged that users may encounter additional traffic when crossing these routes, it is not anticipated that there will be any restrictions or limitations on the use of these PRoWs.

Regional Route 90 Lancashire Cycleway (Northern loop):[7] is a 130 mile (290 km) loop which takes in the Forest of Bowland Area of Outstanding Natural Beauty (AONB), Arnside and Silverdale AONB, the Ribble Valley and Blackpool Pleasure Beach. The route crosses the construction traffic route twice on the A59 near Billington and Whalley and follows West Bradford Road (Waddington) and crosses the B6478 on the outskirts of Waddington.

Regional Route 91 Lancashire Cycleway (Southern loop) is approximately a 130 mile loop which goes through Blackburn, Clitheroe, Burnley and Ormskirk.[8] The route crosses the construction traffic routes along the A59 twice near Pendle Road and just before Pimlico Link Road.

There are two recreational cycle routes which intersect with the construction traffic routes for the Proposed Bowland and Marl Hill Sections these are:

- The Ribble Valley Villages:[9] cycle route is a 29 mile (47 km) route which takes in both contrasting sides of the Ribble Valley. The route follows minor roads and B roads, starting and finishing at Waddington car park. The route takes in a number of places of interest including Downham, Ribchester Roman Museum and Stonyhurst College. The route crosses the construction traffic routes three times on the A59 at Billington, near Pendle Road and just before Pimlico Link Road. The route follows the construction traffic route along West Bradford Road (Waddington) before crossing the B6478
- The Clitheroe to Downham:[94] cycle route is a 13 mile (21.5 km) route commencing from Clitheroe Rail Station. The route takes in the villages of Worston, Downham, West Bradford and Waddington before returning to Clitheroe via the Edisford Bridge. The route crosses the construction traffic routes once on the A59 just before Pimlico Link Road. The route follows the construction traffic route along West Bradford Road (Waddington) before crossing the B6478.

The Tour of Lancashire cycle event[10] is a 162 km route starting from Preston College. The event consists of a long, medium and short route:

- The short route is a 67.7 km route which passes through the rolling Lancashire countryside towards Clitheroe through Sabden, Whalley and back to Preston. The route crosses the construction traffic routes twice on the A59 on Mitton Road and Pendle Road/Clitheroe Road
- The medium route is a 112.3 km route starting at Preston College, skirting the edge of the Forest of Bowland, passing through Inglewhite, Calder Vale and Okenclough, returning through the Trough of Bowland, Clitheroe, Sabden, Whalley and back to Preston. The route crosses the construction traffic routes twice on the A59 on Mitton Road and Pendle Road/Clitheroe Road

[7] https://www.openroadopenskies.co.uk/self-guided-cycling-holidays/route-90-north-lancashire-loop [Online] [Accessed: March 2021].

[8] https://www.visitlancashire.com/dbimgs/Lancashire%20Cycleway%20Southern%20Loop.pdf [Online] [Accessed June 2021]

[9] https://www.visitlancashire.com/dbimgs/Ribble-Valley-Cycle-Map.pdf [Online] [Accessed June 2021]

[10] https://velo29events.com/sportives/tour-of-lancashire-sportive/tour-of-lancashire-long/ [Online] [Accessed March 2021]

- The long route starts from Preston College, skirts the edge of the Forest of Bowland passing through Inglewhite, Calder Vale and Okenclough. The route returns through the Forest of Bowland, Slaidburn, Dunsop Bridge, Clitheroe, Sabden, Whalley and back to Preston. The route crosses the construction traffic routes twice on the A59 on Mitton Road and Pendle Road/Clitheroe Road. The route also goes along Newton Road crossing the access into the Newton-in-Bowland Compound.

The Pendle Witch trail[11] is a 45 mile (72 km) self-guided car, minibus or bike trail. The route starts from the Pendle Heritage Centre in Barrowford passing through Chatburn, Clitheroe, Waddington and Newton before heading towards Dunsop Bridge and Lancaster via the Trough of Bowland. The route crosses the construction traffic route on the A671 and follows the route along the B6478 and along Newton Road across the access to the Newton-in-Bowland Compound.

There are 20 long-distance footpaths located on the traffic routes to the Newton, Bonstone and Braddup Compounds; these are:

- Lancashire Way - Central Loop:[12] the Central Loop is the second part of the Lancashire Way. The 100 mile (161 km) route begins and ends in Preston taking in the Ribble Valley to Pendle Hill, the Hodder Valley and the southern half of the Bowland Fells. The route follows the B6478 Hallgate Hill from the River Hodder through Newton close to the temporary haul road across the River Hodder to the Newton-in-Bowland Compound
- Clitheroe 60K:[13] this 37 mile (60 km) route starts from the Ribble Valley, taking in Longridge Fell, the Hodder Valley, Newton, skirting Grindelton Fell to Sawley and Downham, finally traversing Pendle Hill. This route links with the Pendle Way and Ribble Way. The route crosses the construction traffic routes on the A59 near Clitheroe and crosses the temporary haul road to the Newton-in-Bowland Compound
- Hodder Way:[14] this is a 27 mile (43 km) route from the source of the River Hodder on access land near the Cross of Greet to Hodder Foot where it joins the River Ribble. The route passes through the villages of Slaidburn, Newton, Dunsop Bridge, Whitewell, Bashall Eaves and Great Mitton. The route crosses the temporary haul road to the Newton-in-Bowland Compound alongside the River Hodder
- Pendle Witches Way:[15] this is a 46 mile (74 km) route from Sabden in Lancashire through the Ribble Valley and the Forest of Bowland to Lancaster. The route crosses the construction traffic routes on the A59 near Clitheroe
- Pendle and Ribble Round:[16] this is a 20.5 mile (33 km) route crossing Pendle Hill and visiting Downham before returning by riverside and farm paths. The route crosses the construction traffic routes near Whalley on the A59 close to the River Calder and crosses the temporary haul road for the Ribble crossing south of the River Ribble
- Ribble Way:[17] this is a 70 mile (113 km) route which follows the valley of the River Ribble from the mouth to the source near to the Pennine Way National Trail on Gayle Moor. The route crosses the temporary haul road for the Ribble crossing south of the River Ribble

[11] https://www.visitlancashire.com/things-to-do/pendle-witch-trail-lancaster-to-pendle-p51630 [Online] [Accessed June 2021]

[12] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Lancashire+Way+-+Central+Loop [Online] [Accessed June 2021]

[13] https://ldwa.org.uk/ldp/members/show_path.php?path_name=Clitheroe+60K [Online] [Accessed June 2021]

[14] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Hodder+Way [Online] [Accessed June 2021]

[15] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Pendle+Witches+Way [Online] [Accessed June 2021]

[16] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Pendle+and+Ribble+Round [Online] [Accessed June 2021]

[17] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Ribble+Way [Online] [Accessed June 2021]

- Lancashire Witches Walk:[18] this is a sustainable 51 mile long distance walk in 2013 commemorating the 400th Anniversary of hanging of the Lancashire Witches. The route starts in Barrowford and finishes at Lancaster Castle where the witches were tried. The route crosses the construction traffic route on the A59 near Pendleton and crosses the temporary haul road for the Ribble crossing north of the River Ribble
- Trevine Trail:[19] this is a 54 mile (87 km) walk through the countryside of the lower Ribble Valley, based on Whalley heading to Hurst Green to Clitheroe and returning over Pendle Hill and via Sabden. The route crosses the construction traffic route on the A59 near Mellor Brook, Copster Green, Whalley and near Clitheroe
- Palatine Plod:[20] this is a 380 mile (612 km) long distance walk that aims to reflect the County of Lancashire, prior to 1974 when boundary changes were made. Starting from Liverpool South Parkway Station, it links the most distant towns of Mossley and Barrow-in-Furness, and visits what was Lancashire's highest point – The Old Man of Coniston – before finishing on Walney Island. The walk has been broken down into 26 stages. The route crosses the construction traffic route on the A59 near Copster Green, just before Pimlico Link Road and follows West Bradford Road (Clitheroe) past Ribblesdale Cement Works
- Wainwrights Way:[21] this is a 123 mile (198 km) walk through Alfred Wainwright's life from Lancashire to the Lakes. The walk links the place where he was born – a Victorian terraced house in Audley Range, Blackburn – with his final resting place on Haystacks, his heavenly corner of Lakeland. The route crosses the construction traffic route on the A59 near Whalley south of the River Calder
- Two Roses Way:[22] this is a 96 mile (154 km) six-day hill walk through Lancashire and the Yorkshire Dales, via the towns of Whalley, Gisburn, Skipton, Malham, Slaidburn and Chipping. The route crosses the construction traffic route on the A59 near Whalley south of the River Calder
- Whalley / Waddington / Wiswell Wander:[23] this is a 24 mile (39 km) route in the countryside west of Pendle Hill visiting Clitheroe, Whalley, Waddington, Wiswell, Pendleton and Great Mitton. The route crosses the construction traffic routes on the A59 twice near Whalley north of the River Calder and near Clitheroe just before Pimlico Link Road. The route crosses the temporary haul road for the Ribble crossing three times and follows the route along West Bradford Road (Waddington) between the temporary haul road and Waddington Almshouses. The route also crosses the B6478 Slaidburn Road near Daisy Hill
- Historical Walks through Lancashire and Yorkshire:[24] this is a 146 mile (235 km) route through Lancashire and Yorkshire, linking Lancaster and York. Including visits to the sites of seven castles and three abbeys. The route crosses the A59 twice near Whalley on both sides of the River Calder and the A671 Pimlico Link Road
- Villages of the Ribble Valley:[25] this is a 29 mile (47 km) route through the central sections of the Ribble Valley encircling Clitheroe visiting 12 valley villages including Waddington, West

[18] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Lancashire+Witches+Walk [Online] [Accessed June 2021]

[19] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Trevine+Trail [Online] [Accessed June 2021]

[20] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Palatine+Plod [Online] [Accessed June 2021]

[21] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Wainwrights+Way [Online] [Accessed June 2021]

[22] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Two+Roses+Way [Online] [Accessed June 2021]

[23] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Whalley+%2F+Waddington+%2F+Wiswell+Wander [Online] [Accessed June 2021]

[24] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Historical+Walks+through+Lancashire+and+Yorkshire [Online] [Accessed June 2021]

[25] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Villages+of+the+Ribble+Valley [Online] [Accessed June 2021]

Bradford, Grindleton, Chatburn and the outskirts of Clitheroe. The route crosses the construction traffic route on the A59 near Whalley north of the River Calder, it also crosses the temporary haul road for the Ribble crossing twice and follows the route along West Bradford Road (Waddington) to the junction with the B6478

- Trans Pennine Way:[26] this is a 102 mile (164 km) route linking the Forest of Bowland and Nidderdale AONB's taking a line through Pendle Country, Haworth, IIkley Moor, Washburn Valley, Pateley Bridge and the area of Brimham Rocks. The route crosses the construction traffic route on the A59 near Pendleton
- Blackpool to Bridlington (Aerospace Way):[27] this is a 148 mile (238 km) low-level coast to coast route connecting the Lifeboat stations at Blackpool and Bridlington. The route crosses the construction traffic route on the A59 near Clitheroe just before the turn to Pimlico Link Road
- North West Way:[28] this is a 191 mile (307 km) route which starts in Preston following the Ribble Way through Ribchester and Hurst Green to Gisburn before picking up the Pennine Way at Malham then connecting to the South Tyne Trail and Hadrian's Wall National Trail before finishing in Carlisle. The route crosses the temporary haul road for the Ribble crossing south of the River Ribble
- Forest of Bowland Walk:[29] this is a 68 mile (109 km) circular walk around the Forest of Bowland AONB in Lancashire from Caton. It visits Slaidburn, Clitheroe and Garstang before returning to Caton. The route crosses the temporary haul road for the Ribble crossing south of the River Ribble
- Red Rose Trail:[30] this is a 112 mile (180 km) route around the North of Lancashire starting and finishing by Lancaster Castle via Garstang, Kirby Lonsdeale, Chipping, Whitewell, Waddington, Slaidburn, Wray and Silverdale. The route crosses the temporary haul road for the Ribble crossing twice north of the River Ribble and follows the construction traffic route along West Bradford Road (Waddington) to the junction with the B6478
- Lancashire Monastic Way Upholland to Sawley Abbey:[31] this is a 69 mile (111 km) two section walk linking many of the medieval monastic sites of Lancashire and South Cumbria, beginning in south Lancashire at Upholland and making its way up to Furness Abbey in Cumbria. The first section finishes at Sawley Abbey. The route crosses the construction traffic route twice on the A59 near Whalley on either side of the River Calder. The route crosses the temporary haul road for the Ribble crossing south of the River Ribble

There are a number of recreational trails on the construction traffic routes to the Proposed Bowland and Marl Hill Sections; these include:

- River Ribble via Old Park Wood and Mercyfield Wood Loop:[32] this is a 11.6 km loop near Clayton Le Dale. The trail is primarily used for hiking, walking and running. The route follows the construction traffic routes along the A59 between Osbaldeston and Clayton Le Dale

[26] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Trans+Pennine+Way [Online] [Accessed June 2021]

[27] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Blackpool+to+Bridlington+%28Aerospace+Way%29 [Online] [Accessed June 2021]

[28] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=North+West+Way [Online] [Accessed June 2021]

[29] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Forest+of+Bowland+Walk [Online] [Accessed June 2021]

[30] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Red+Rose+Trail [Online] [Accessed June 2021]

[31] https://ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=Lancashire+Monastic+Way+Upholland+to+Sawley+Abbey [Online] [Accessed June 2021]

[32] https://www.alltrails.com/explore/trail/england/lancashire/river-ribble-via-old-park-wood-and-mercyfield-wood-loop [Online] [Accessed June 2021]

- Ribble, Dinckley and Copster Green:[33] this is a 7.1 km loop near Little Mitton. The trail is primarily used for hiking, walking and running. The route follows the construction traffic route for a very short section along the A59 near Copster Green
- Ribble Circular:[34] this route is a 27.5 km loop near Blackburn. A route that can be used by walkers, cyclists and horse riders. The route crosses the construction traffic route along the A59 at four points near Northcote, Billington, Nethertown and Barrow
- Whalley and Wiswell:[35] this is a 6.6 km loop located near Clitheroe. The trail is primarily used for hiking and running. The route crosses the construction traffic route along the A59 at two points near Whalley and Wiswell
- Whalley and Garstang:[36] this is a 72.9 km loop near Clitheroe. The trail is primarily used for road biking. The route crosses the construction traffic route on the A59 twice close to Nethertown and Billington
- Wiswell and Clitheroe:[37] this is a 10.3 km loop near Clitheroe. The trail is primarily used for hiking, walking and running. The route crosses the construction traffic route on the A59 twice close to Barrow/Wiswell
- Ribble Way Section 3: Clitheroe to Gisburn:[38] this is a 19.3 km point to point trail near Clitheroe primarily used for hiking and walking. The route crosses the temporary haul road for the Ribble crossing south of the River Ribble
- Clitheroe Circular:[39] this is a 10.8 km loop near Clitheroe the trail is primarily used for walking and running and is accessible year-round. The route crosses the construction traffic routes twice on the A59 near Pendle Road and Pimlico Link Road. The route also follows Pimlico Link Road up to Worston Brook
- Grindleton and Harrop Fold:[40] this is a 14.5 km loop located near Clitheroe. The trail is primarily used for hiking, walking, nature trips and bird watching. The route follows alongside a short section of the B6478 Slaidburn Road close to Waddington Fell
- Dunsop Bridge to Slaidburn:[41] this route is a 9.3 km point-to-point trail near Clitheroe. This trail is primarily used for hiking, walking and nature trips. The route crosses the temporary haul road to the Newton-in-Bowland Compound
- Dunsop Bridge and Newton Circular:[42] this route is a 11.4 km heavily trafficked loop trail located near Slaidburn. The trail offers a number of activity options and is best used from March until October. Dogs are also able to use this trail. The route crosses the temporary haul road to the Newton-in-Bowland Compound twice
- Slaidburn Circular Walk:[43] this is a 10.1 km-loop trail near Slaidburn. This trail is primarily used for hiking, walking and bird watching. The route follows the B6478 Hallgate Hill for a short section across the River Hodder close to the temporary haul road to the Newton-in-Bowland Compound

[33] https://www.alltrails.com/explore/trail/england/lancashire/ribble-dinckley-and-copster-green [Online] [Accessed June 2021]
[34] https://www.alltrails.com/explore/trail/england/lancashire/ribble-circular [Online] [Accessed June 2021]
[35] https://www.alltrails.com/explore/trail/england/lancashire/whalley-and-wiswell [Online] [Accessed June 2021]
[36] https://www.alltrails.com/explore/trail/england/lancashire/whalley-and-garstang [Online] [Accessed June 2021]
[37] https://www.alltrails.com/explore/trail/england/lancashire/wiswell-and-clitheroe [Online] [Accessed June 2021]
[38] https://www.alltrails.com/explore/trail/england/lancashire/ribble-way-section-3-cllitheroe-to-gisburn [Online] [Accessed June 2021]
[39] https://www.alltrails.com/explore/trail/england/lancashire/clitheroe-circular [Online] [Accessed June 2021]
[40] https://www.alltrails.com/explore/trail/england/lancashire/grindleton-and-harrop-fold [Online] [Accessed June 2021]
[41] https://www.alltrails.com/explore/trail/england/lancashire/dunsop-bridge-to-slaidburn [Online] [Accessed March 2021]
[42] https://www.alltrails.com/explore/trail/england/lancashire/dunsop-bridge-and-newton-circular [Online] [Accessed June 2021]
[43] https://www.alltrails.com/explore/trail/england/lancashire/slaidburn-circular-walk [Online] [Accessed March 2021]

- AA walks - Clitheroes River and Castle:[44] is a 6.1 km route which starts and finishes on Milton Avenue, Clitheroe and follows a section of the River Ribble. The route crosses the temporary haul road for the Ribble crossing four times both north and south of the River Ribble
- Trail Magazine – Forest of Bowland:[45] is a 22 km loop from Dunsop Bridge via Whin Fell and Whitendale. The trail is used for mountain biking. The route crosses the southern extent of the Newton-in-Bowland Compound.

The British Horse Society Equestrian Access Mapping DOBBIN[46] records no formal routes near the construction traffic routes to the Newton, Bonstone and Braddup compounds however it does identify a couple of potential unrecorded ways that intersect the construction traffic routes:

- Project2026 is a national web based project with the aim of identifying routes which are potentially unrecorded public rights of way with a view to submit Definitive Map Modification Order Applications that will otherwise be extinguished under the CROW Act 2000 in 2026. These are not formal routes but have been submitted by members of the public which identifies potential usage in the area, however this may not be by horse riders. The key areas that intersect with the construction traffic routes are on the B6478 Slaidburn Road near Grindleton Fell and on the B6478 Hallgate Hill near the River Hodder.

There are also stables located close to the construction traffic routes on the A59 near Langho (Longsight Stables) and near Northcote Road (Northcote Stud).

Although there are numerous formal PRoWs, cycleways, trails and footpaths within the area many non-motorised users will use the local road network to walk, cycle or for horse riding rather than following a formal path. Therefore consideration has been given to the local attractions in the area that may encourage general non-motorised user activity and potential desire lines that interact with the construction traffic routes.

The Proposed Bowland and Marl Hill Sections and the construction traffic routes north of Waddington are located within the Forest of Bowland AONB. There are areas of access land (under the Countryside and Rights of Way Act 2000) located between the Bonstone and Braddup compounds.

There are a number of recreational areas, tourist facilities, food establishments, schools and places of worship directly along the construction traffic routes which may act as an attraction for non-motorised users including:

- Along the A59 – St Mary's and St John Southworths RC Church, Huntleys farm store and outlet village, Samlesbury Sports and Social Canberra Club and Fitness Centre, Bay Horse Inn, St Mary's Roman Catholic Primary School, Osbaldeston, St Mary's Catholic Church, Mrs Dowsons Farm Park, Tiggis Ribble Valley Bar and Restaurant, Shajan Indian Restaurant and YU Copster Green Restaurant and Bar
- B6478 – Waddington post office

There are also a number of hotels, holiday lets, B&B accommodation and a Caravan Park directly along the construction traffic routes which may increase the number of non-motorised users, these include:

- Along the A59 – Samlesbury Hotel, Bluebird Inn, Northwood Caravan and Holiday Park, Rose Cottage B&B and Fenwick Arms
- B6478 – Higher Buck and Sunnybrook Cottage, Waddington

[44] https://osmaps.ordnancesurvey.co.uk/route/514961/AA-Walks-Clitheroes-River-and-Castle [Online] [Accessed June 2021]

[45] https://osmaps.ordnancesurvey.co.uk/route/515839/Trail-Magazine-Forest-of-Bowland [Online] [Accessed June 2021]

[46] https://www.bhsaccess.org.uk/dobbin/ [Online] [Accessed June 2021]

Annual events in the area include the Newton-in-Bowland Duck Race, an annual event held around the start of May each year at Newton Bridge/Newton Village Hall. Further consideration has been given to planned events in Section 6.7 below which provides bespoke mitigation.

The main areas of pedestrian movements is likely to be along the A59 particularly near Mellor Brook, Copster Green, Whalley, Wiswell, Pendleton, Billington, Northcote, Nethertown, Barrow and Clitheroe. Pedestrian movement is also likely within Clitheroe, West Bradford and Waddington where there are a number of likely origins and destinations for pedestrian movements. There are a number of PRoWs which terminate onto West Bradford Road but do not cross it.

There are routes that follow Pimlico Link Road, West Bradford Road (Clitheroe), West Bradford Road (Waddington) and small sections of the B6478. There are also a number of routes near the River Hodder close to the temporary haul road to the Newton-in-Bowland Compound and River Ribble close to the temporary haul road for the Ribble crossing.

The main area of cyclist movement is likely to be crossing the A59 around Billington, Whalley, Mitton Road, Pendle Road and just before Pimlico Link Road.