



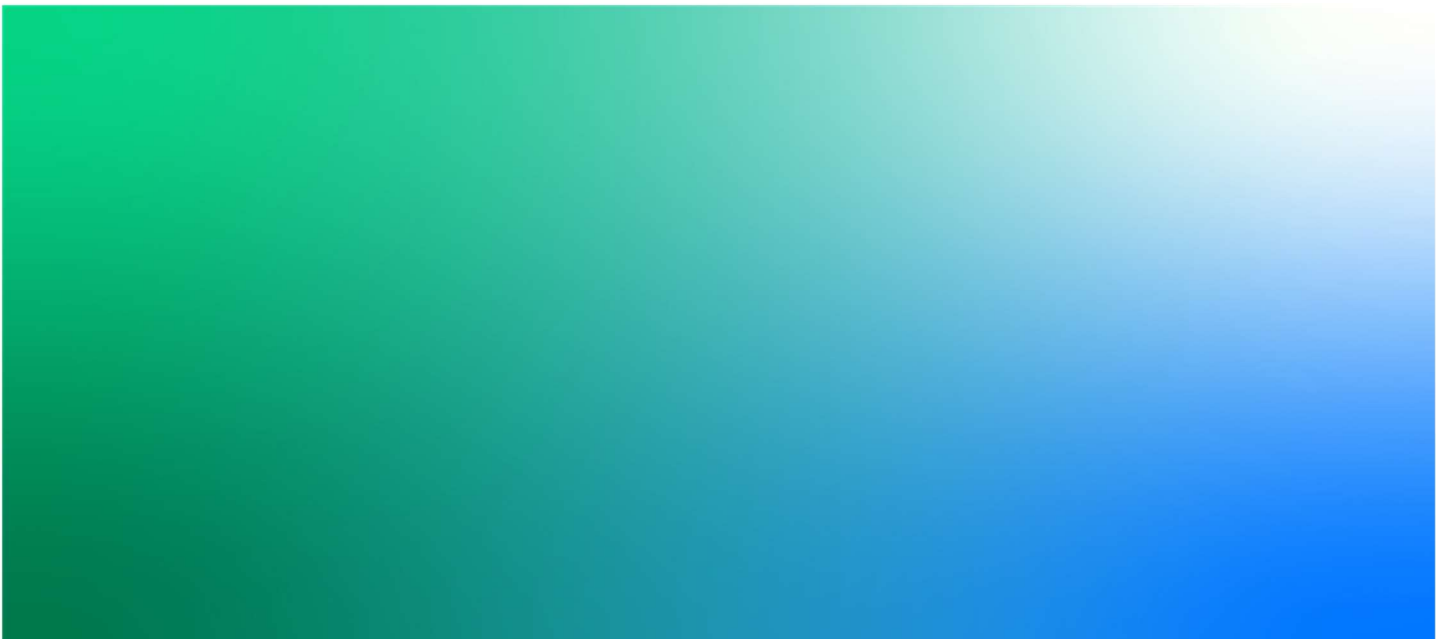
# **Haweswater Aqueduct Resilience Programme (HARP): Proposed Marl Hill and Newton-in-Bowland Compound Accesses**

**United Utilities**

Marl Hill and Newton-in-Bowland Road Safety Audit Stage 1 - Addendum

B27070EP - Marl Hill and Newton-in-Bowland compound access-RSA1 | P01

07/02/23



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**Document history and status**

Revision	Date	Description	By	Review	Approved
P01	07/02/2023	For Client Comment	JK	PF	PB

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## **1. Introduction**

### **1.1 Commissioning and Scope**

Jacobs were commissioned by United Utilities (UU) to undertake a Stage 1 Road Safety Audit (RSA) on the proposed highway modifications as part of the proposed access strategy to the Marl Hill and Newton-in-Bowland compounds. This RSA relates to drawings provided on the 2<sup>nd</sup> of February 2023, which show proposals for highway modifications.

The RSA team visited the site together on 31<sup>st</sup> January 2023. For a part of the route, RSA team were able to stop in a safe location, observe the site and were able to take some photos. However, due to most of the route being generally rural and with varying speed limits up to 60mph video recording was taken for the rest of the route in both directions. Note that, the route has been observed based on the information and drawings provided to the RSA team.

This RSA report is considered as an addendum to the previous Road Safety Report (Document Reference: B2309510- Marl Hill and Newton-in-Bowland compound access-RSA1 | P03).

### **1.2 Scheme Description and Objective**

- This addendum is an update to the previous stage 1 RSA and takes into account the proposals for the village of Waddington and associated routes as shown in Figure 1. This design change is to address concerns raised by Lancashire County Council Highways regarding inter-visibility between narrow sections of road and how measures would be implemented to effectively control vehicle speeds. As a consequence, the following solutions were proposed and highlighted at figure 2: Village gateways marked with lining and signage and a 20mph restriction.
- A village square scheme at the junction between Slaidburn road and West Bradford road (adjacent to the Higher Buck pub). This will incorporate raised cushions on the approaches with distinctive coloured surfacing / aggregate to the road surface in-between.
- Appropriate signage for passing places on West Bradford Road
- Replacement of the posts in the verge adjacent to the hospital cottages on West Bradford Road to ensure the road edge is clearly defined and visible.

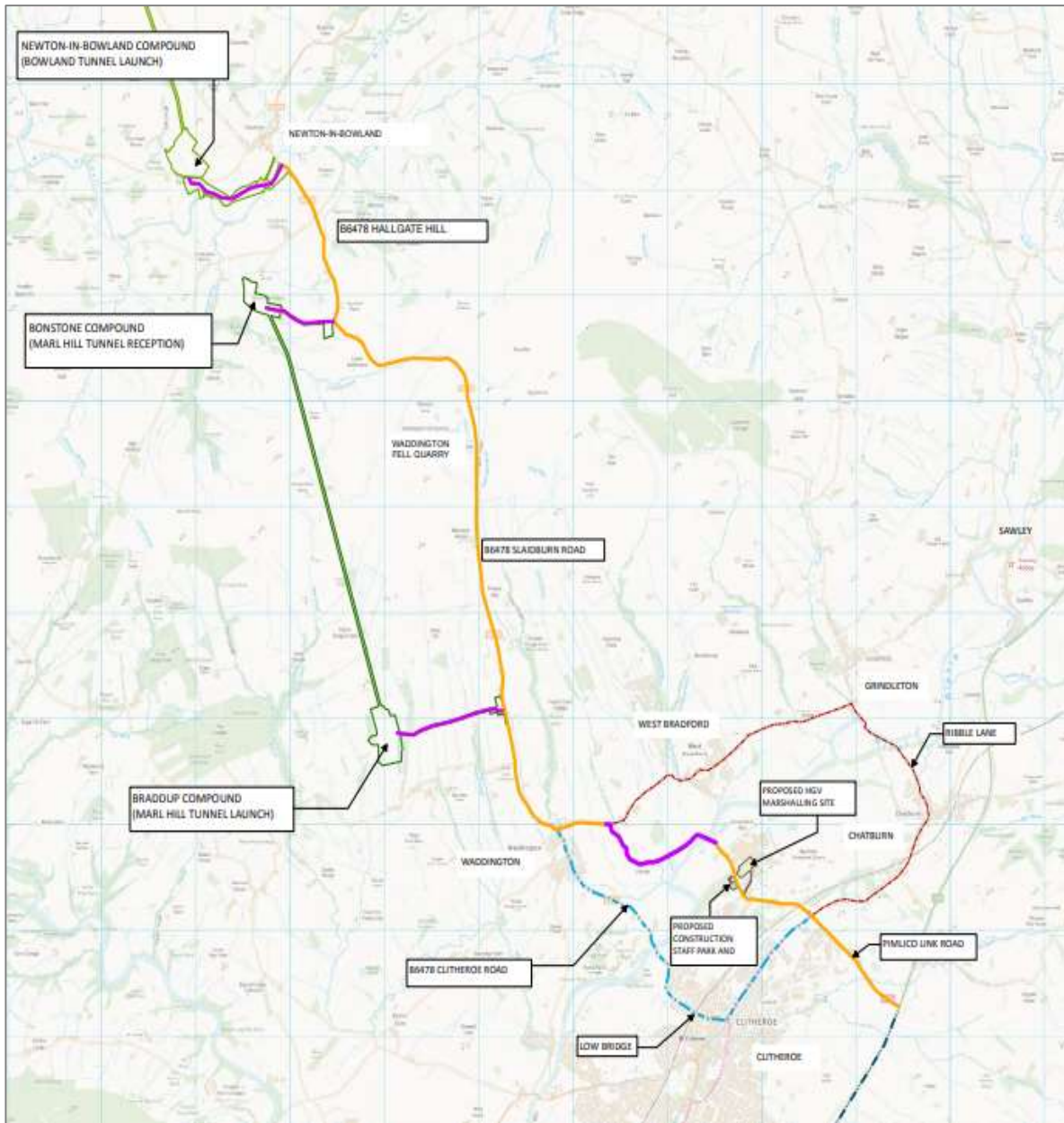


Figure 1 – Proposed access routes, extract from figure A-1-01, see section 1.4 drawings.

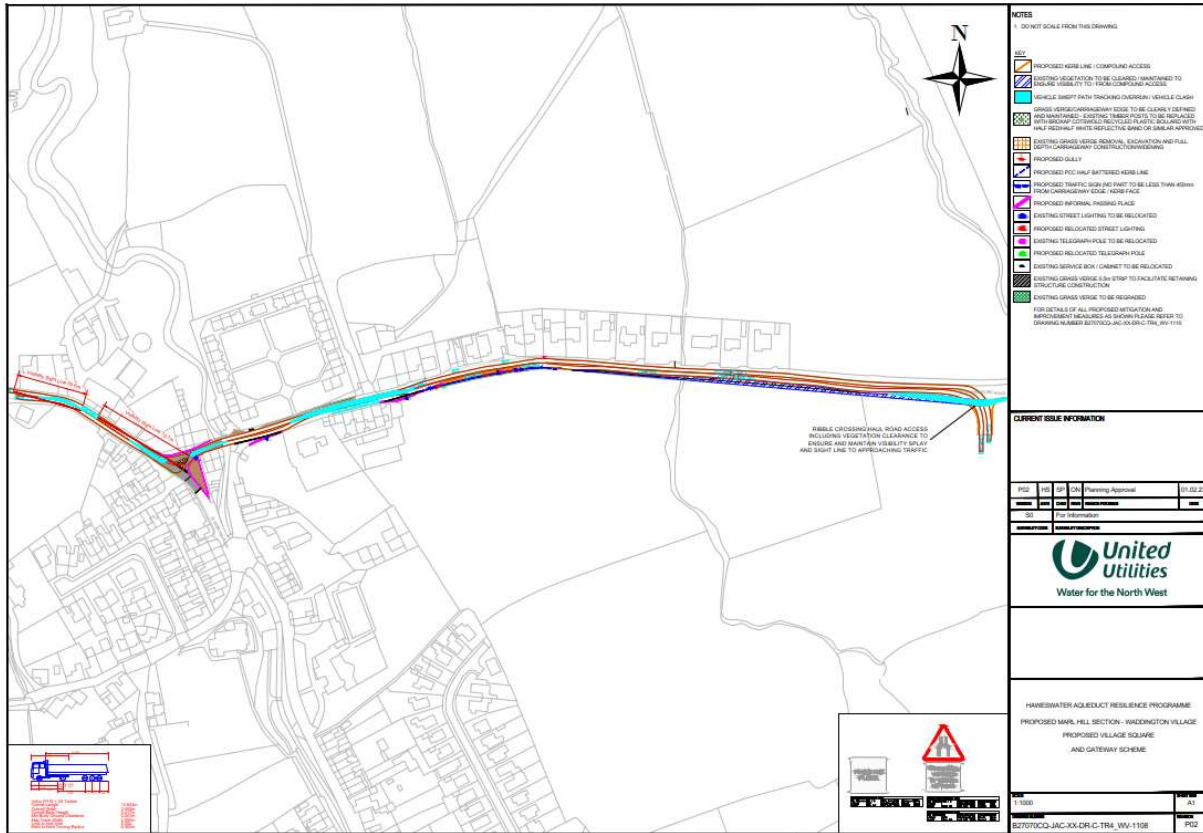


Figure 2: Location overview plan of this Audit

<b>1.3 Audit Team and Programme</b>					
<b>The Audit Team</b>	<p><b>Paul Fenton</b> Associate Director, Jacobs, Manchester</p> <p><b>Jwan Kamla</b> Senior Engineer, Jacobs, Birmingham</p>				
<b>The Audit Brief</b>	<p>Audit requested by: United Utilities</p> <p>Audit Team approved by: United Utilities</p>				
<b>Documents Used</b>	See Appendix A				
<b>Desktop Evaluation</b>	<table border="1"> <tr> <td>Home Office and MS Teams</td> <td>Date: 30 January 2023</td> </tr> </table>	Home Office and MS Teams	Date: 30 January 2023		
Home Office and MS Teams	Date: 30 January 2023				
<b>Daylight Site Visit</b>	<table border="1"> <tr> <td> <p>The RSA team visited the site together.</p> <p>Traffic Conditions: low motorised, cycle, and pedestrian flows.</p> </td> <td rowspan="3"> <p>Date: 31<sup>st</sup> January 2023</p> <p>Time: 10:30 to 14:30</p> </td> </tr> <tr> <td>Weather: Fine and sunny</td> </tr> <tr> <td>Road Surface: Dry</td> </tr> </table>	<p>The RSA team visited the site together.</p> <p>Traffic Conditions: low motorised, cycle, and pedestrian flows.</p>	<p>Date: 31<sup>st</sup> January 2023</p> <p>Time: 10:30 to 14:30</p>	Weather: Fine and sunny	Road Surface: Dry
<p>The RSA team visited the site together.</p> <p>Traffic Conditions: low motorised, cycle, and pedestrian flows.</p>	<p>Date: 31<sup>st</sup> January 2023</p> <p>Time: 10:30 to 14:30</p>				
Weather: Fine and sunny					
Road Surface: Dry					

### **1.4 Terms of Reference**

The terms of reference of this Road Safety Audit are in accordance with the principles of GG 119 Road Safety Audit.

### **1.5 Extent of this Audit**

The Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria. Where recommendations are made these do not comprise design decisions, and it remains the responsibility of the Design Team to incorporate any changes into the scheme and consider any interactions between design elements.

### **1.6 Collision Record**

Collision data has been provided by the Design Team.

For the entire scheme (Proposed Marl Hill and Bowland Sections) collision data has been analysed for the last complete 6 years (2016-2021). It shows there are 13 serious and 33 slight collisions along the proposed route. A map showing collision details and the location of the collisions is in Appendix C.

Further analysis of the section, relevant to this RSA addendum, shows that 2 serious collisions, resulting in 2 casualties, have been reported. One is shown to have occurred on the B6478 within the village centre and the second located in Waddington Road west of the junction with Clitheroe Road.

## **2. Items Raised at Previous Road Safety Audit**

No previous RSAs have been carried out on this part of the Scheme. This RSA report is considered as an addendum to the previous Road Safety Report (Document Reference: B2309510- Marl Hill and Newton-in-Bowland compound access-RSA1 | P03).



### 3. Items Raised at this Road Safety Audit

This section details the items raised by this addendum Stage 1 Road Safety Audit.

#### 3.1 Problem 3.1

**Location:** Approaches to the priority junction at the Higher Buck between West Bradford Road and the B6478.

**Summary:** Profile of traffic control measure (speed cushions) may not be suitable for HGV turning and could possibly up settle and loose the load into the carriageway and footway in direct conflict with other road users.

As per drawing no. B27070CQ-JAC-XX-DR-C-TR4\_WV-1110 elongated flat top speed cushions are proposed on the approaches to the priority junction at the Higher Buck between West Bradford Road and the B6478. It is proposed that the cushions will have a standard ramp up and shallow off gradient and 8m plateau length to accommodate 2 HGV axles. Based on the traffic management plan (Document Reference: 80061155-01-UU-TR4-XX-RP-C-00024 Jan 23) provided to the RSA team, the following HGV types will be in operation within the scheme extent:

- HGV - 4 axle rigid max GVW 32 Tonne (rigid/tipper)
- LGV - 2 axle max GVW 3.5 Tonne (crew bus / car)
- HGV – 5/6 axle articulated tanker up to GVW 44 Tonne
- LGV - 2 axle max GVW 3.5 Tonne (transit type pick up / 4x4)
- HGV - 3 axle rigid body skip wagon up to GVW 26 Tonne
- HGV - tractor unit, low loader step trailer (typical width 2.9m) up to GVW 44 Tonne
- HGV – 5/6 axle articulated flatbed up to GVW 44 Tonne
- HGV - 3 axle articulated flatbed GVW 26 Tonne
- HGV - 4 axle rigid max GVW 32 Tonne (concrete mixer)

In addition to above, there will be abnormal load movements. As such the proposed speed cushions might not accommodate all sizes of vehicles within the scheme extents. Speed cushions that have inappropriate profiles may cause HGV instability resulting in the load shifting with the risk of the load or part of the load falling from the vehicle into the road or footway and injuring other road users.

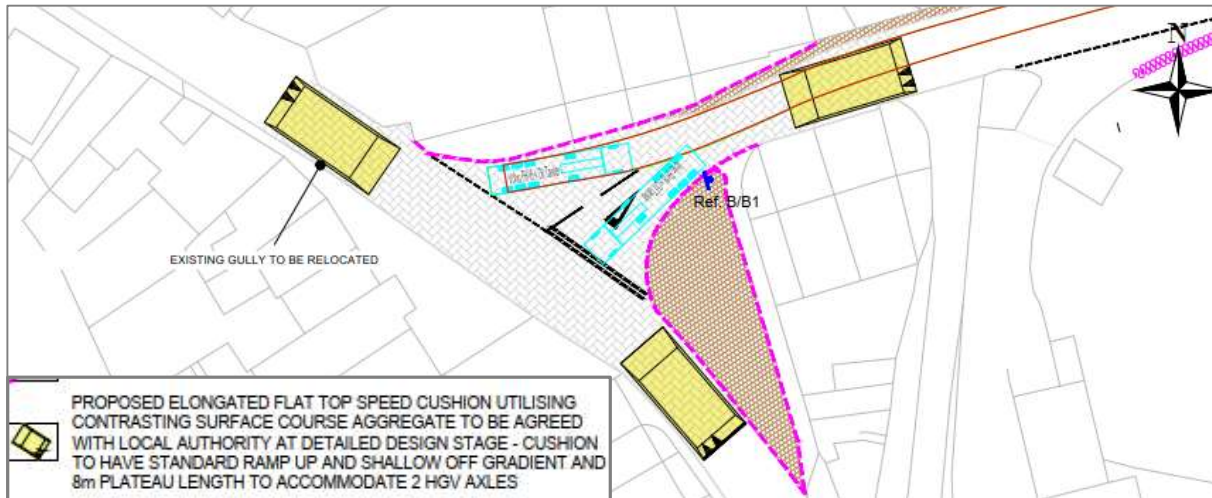


Figure 3 Proposed locations of speed cushion

#### Recommendation

Ensure that all speed cushions have an appropriate profile that can accommodate all sizes of vehicles.

### 3.2 Problem 3.2

**Location:** Approaches to the priority junction at the Higher Buck between West Bradford Road and the B6478

**Summary:** Proximity of the Higher Buck sitting area to the carriageway

RSA team has observed that the Higher Buck outside sitting area is very close to the carriageway. There is risk that vehicles travelling southeast to east (West Bradford Road) unintentionally overrun the sitting area, potentially resulting in vehicle to pedestrian conflicts and causing serious injuries to pedestrians. The risk is exacerbated by the sharp turn at this location.



Figure 4 Location of sitting area runs beside the carriageway

#### Recommendation

It is recommended to build out this seating area to maximise the distance between main carriageway and the sitting area.

### Observations

#### 3.3 Observation 3.1

Vegetation is present across the scheme extents and around the proposed formal and informal passing places. This will impact on forward visibility as well as resulting in drivers shying away from the edge of carriageway thereby resulting in reduced carriageway width for opposing vehicles. It is recommended that the vegetation is cut back and maintained.



Figure 5 Example location of existing vegetation

### 3.4 Observation 3.2

During the site visit, parked vehicles were observed at Slaidburn Road northwest within the bend where forward visibility is restricted. Parked vehicles at this location reduces the effective width of carriageway, this could result in conflict between vehicles travelling northwest and the oncoming vehicles potentially resulting in head on collisions, or sudden braking resulting in shunt collisions. Review the location of parked vehicles and enforce accordingly.



Figure 6 Location of Existing on street parking

### 3.5 Observation 3.3

During the site visit, the RSA team has observed that the proposed informal passing place on the West Bradford Road, located 45m east of priority junction with B6478, is a minor road (Branch Road) approach. Vehicles using Branch Road may be frustrated by the stopped vehicles at this informal passing place. It is recommended that during the operation of the scheme Branch Road is closed. Closing this minor road will create a formal passing place at this location.



Figure 7 Location of Branch Road approach and Passing place

### 3.6 Observation 3.4

During the site visit, the RSA team observed a damaged bollard northeast of the junction at the Higher Buck between West Bradford Road and the B6478. It is recommended that those responsible for the maintenance of this asset be informed in order it be replaced.



Figure 8 Damaged Bollard

## **4. Audit Team Statement**

We certify that this Road Safety Audit has been carried out in accordance with GG 119 Road Safety Audits.

### **Road Safety Audit Team Leader**

Paul Fenton

Associate Director, MITAI, FIHE, FCIHT, FSoRSA, CMILT

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Cottons Centre, 2<sup>nd</sup> Floor, Cotton Lane  
London SE1 2QG

**Signed:**



**Date:** 07/02/2023

### **Road Safety Audit Team Member**

Jwan Kamla

Senior Engineer, PhD, MSc, BSc, CEng, FCIHT, MSoRSA

Jacobs, Birmingham  
2 Colmore Square  
Birmingham B4 6BN

**Signed:**



**Date:** 06/02/23

## Appendix A. Documents and Drawings Used

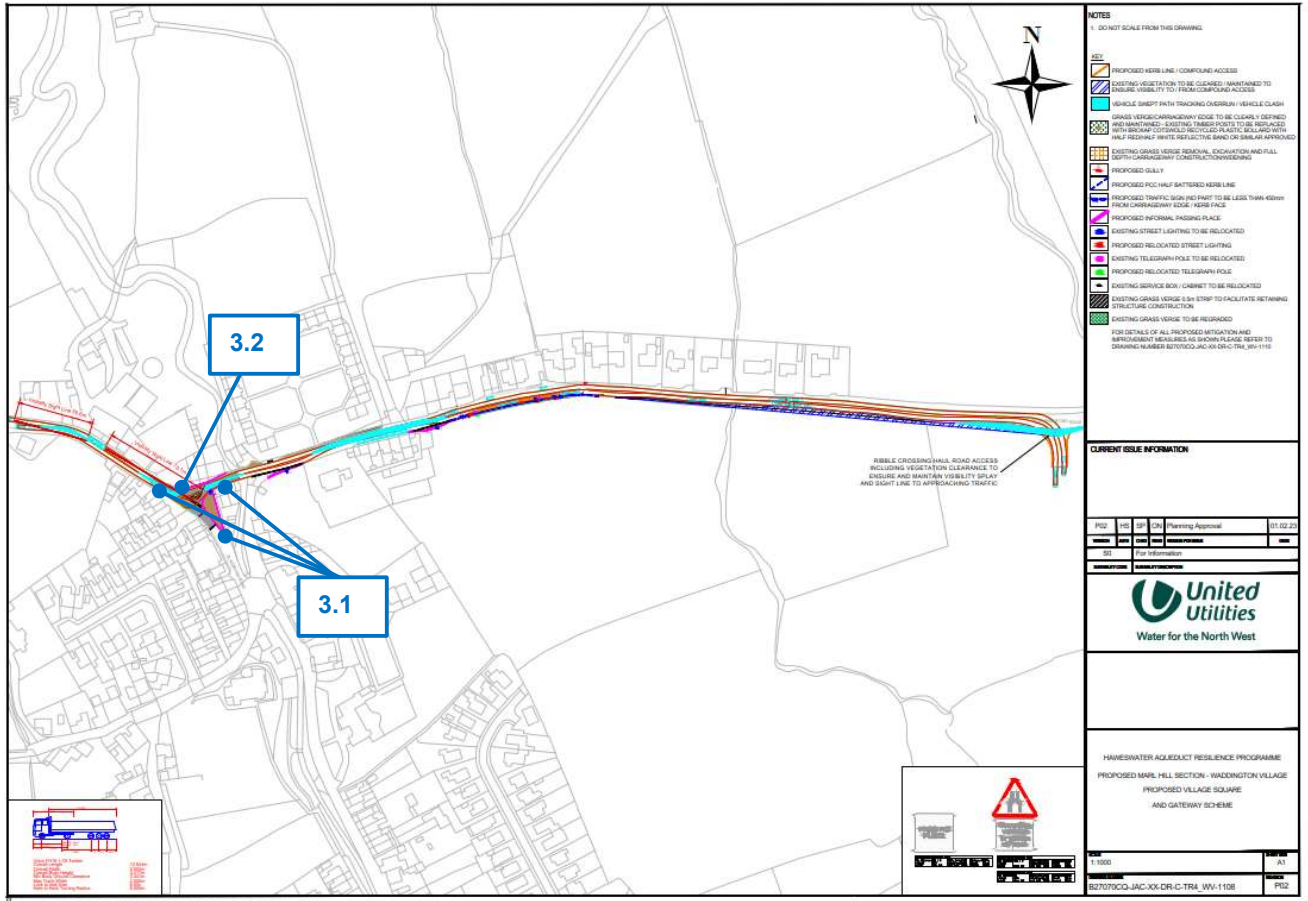
### Audit Drawings:

Drawings
80061155-01-UU-TR4-97-DR-C-20017 – Road widening Existing cross sections
80061155-01-UU-TR4-97-DR-C-20018 - Road widening proposed cross sections
B27070CQ-JAC-XX-DR-C-TR4_WV-1108 –HAWESWATER AQUEDUCT RESILIENCE PROGRAMME PROPOSED MARL HILL SECTION - WADDINGTON VILLAGE PROPOSED VILLAGE SQUARE AND GATEWAY SCHEME
B27070CQ-JAC-XX-DR-C-TR4_WV-1110
B27070CQ-JAC-XX-DR-C-TR4_WV-1111
B27070CQ-JAC-XX-DR-C-TR4_WV-1112
MNA_A-1-01 (19thJan23) – Proposed Access Route
80061155-01-UU-TR3-XX-IE-C-00029 – Plots of Collisions

**Audit Documents:**

Documents no.	Title
80061155-01-UU-TR4-XX-RP-C-00024, Rev P03	Construction Traffic Management plan, Jan 23
Marl Hill and Newton-in-Bowland Compound Accesses - RevP03, Jan 23	Brief
	HARP update for WPC - 24Jan23 ex ref slides (provided for information)
	Collision records: drawing and spreadsheet
B2309510- Marl Hill and Newton-in-Bowland compound access-RSA1   P03	Previous RSA response reports and evidence of agreed actions
<a href="https://webportal.ribblevalley.gov.uk/planx_downloads/21_0660_EIA_Vol2_Ch16_Transport_Planning.pdf">https://webportal.ribblevalley.gov.uk/planx_downloads/21_0660_EIA_Vol2_Ch16_Transport_Planning.pdf</a>  <a href="https://webportal.ribblevalley.gov.uk/planx_downloads/21_0660_Feb_SEIAppendix_B8i_to_B9.pdf">https://webportal.ribblevalley.gov.uk/planx_downloads/21_0660_Feb_SEIAppendix_B8i_to_B9.pdf</a>	Traffic counts
	Speed surveys
80061155-01-UU-TR4-XX-RP-C-00024	Construction Traffic Management Plan

**Appendix B. Problem Location Plans**



**Figure B-1 General Arrangement Drawing- Problem Location**



Appendix C. Collision Information

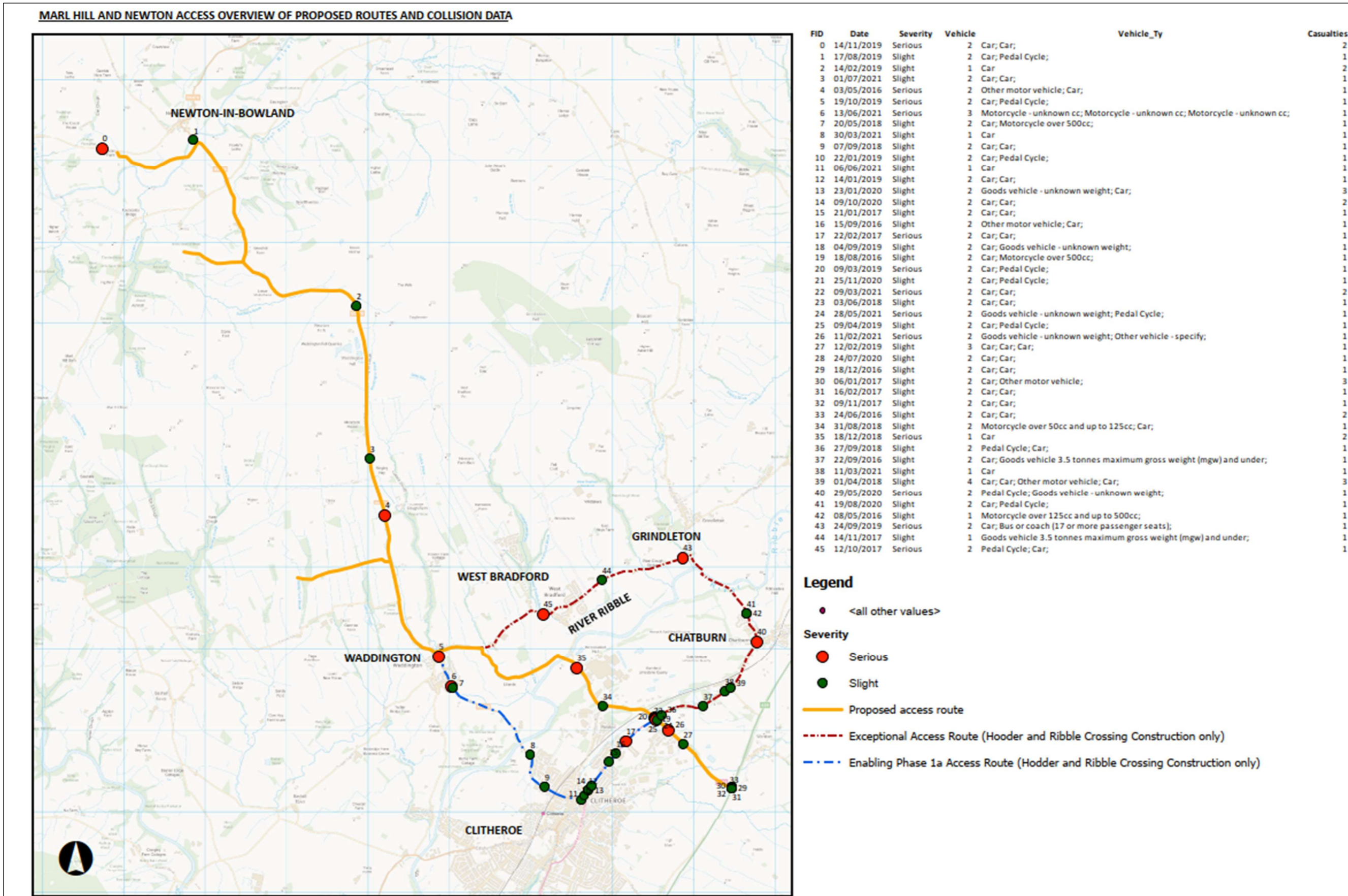


Figure C-1 Plot of Collisions

## Appendix D. Road Safety Audit Feedback Form

Road Safety Audit Feedback Form

Scheme: Marl Hill and Newton in Bowland

Audit Stage: Stage 1 Road Safety Audit

Date Audit Completed: 08<sup>th</sup> February 2023

Paragraph No. in Report	To Be Completed by the Design Team			To Be Completed by the Audit Team
	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative Measures accepted by Auditors (yes/no)
3.1	Yes	Yes	N/A	N/A
3.2	Yes	Yes	N/A	N/A

Signed: Spencer Pritchard.....Designer Date: 10/02/23.....

Signed: ..... Audit Team Leader Date: .....

Signed: Owen Newton..... Client Date: 10/02/23.....