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Whinnah, A5086 Lamplugh Distribution Centre and Agricultural Storage

Road Safety Assessment of Junction Access Options

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1	08/05/23	Draft - issued to Tetra Tech	
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CONTENTS

1. INTRODUCTION AND BACKGROUND

1.1. This report results from a road safety assessment of two options for an access junction off the A5086 Whinnah, Lamplugh, to serve an existing facility comprising a food distribution centre, a milk distribution facility and agricultural storage units.

1.2. Previously, over a period in excess of 40 years, the site was used for a cattle dealing business and included more substantial buildings than at present, and regular deliveries and distribution of livestock by large and long vehicles.

1.3. Currently, journeys to and from the facility are made by private cars and vans (about 4 trips per day) and by large rigid and articulated vehicles, averaging a single trip per day in total. Refuse collection vehicles visit the site once a fortnight. The location of the facility is shown in Figure 1 below.

Figure 1: Location Plan

1.4. Retrospective planning permission is being sought for the facility (as it is a change from its previous agricultural use), and this independent assessment is intended to inform the planning process in terms of the potential road safety implications of the following two access options;

Option 1

Retain the existing access junction, which is located on the east side of the A5086 directly opposite Asby Road;

Option 2

Provide a new junction and access road on the east side of the A5086 approximately 140m to the south of the existing junction.

The existing and proposed access roads and their junctions with the A5086 are shown in Figure 2 below (extracted from the submitted Transport Form).

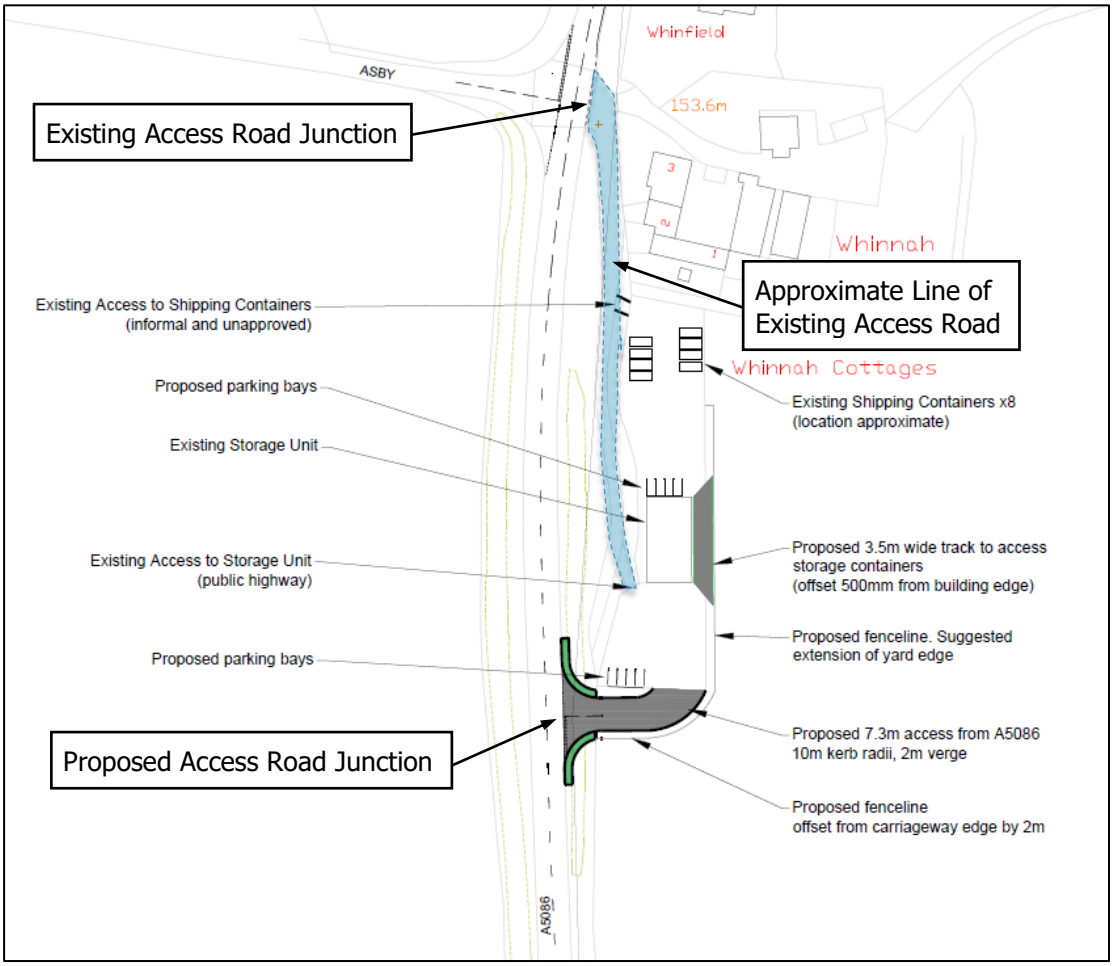

Figure 2: The Existing and Proposed Junctions and Access Roads

1.5. The assessment comprises the following elements: -

- a site visit to record the highway features such as carriageway width and alignment, traffic management (signs and markings), roadside features and drainage;
- an operational assessment, including vehicle composition and speeds, turning movements (including an evaluation of videos showing turning HGV's) and measurements of mutual visibility;
- an evaluation of the collision history;
- descriptions of any existing or potential road safety issues and
- comparison of the two junction options, including positive and negative elements of each from a road safety perspective;
- conclusions and recommendations, including an assessment of future risk.

While this assessment is not a formal Road Safety Audit, it has been carried out broadly in line with the principles of Audit, in that it identifies and evaluates potential road safety issues for each option and makes recommendations or suggestions for mitigation measures.

2. SITE DESCRIPTION AND OPERATIONAL ASSESSMENT

Site Description

2.1 The application site lies to the east of the A5086, a single carriageway 2 lane road, approximately 7.3m in width, running between Cockermouth and Egremont. The length of the A5086 under consideration is subject to the national speed limit of 60mph, reducing to 40mph close to the junction to Lamplugh Green to the south.

2.2 Centre line markings are present (3m mark and 6m gap) in the vicinity of the proposed access, with warning lines (6m mark and 3m gap) at the existing junction, together with edge of carriageway markings along the full length of the assessment site, all of which are in good condition. 'The Countryman' public house and restaurant lies on the west side of the road. The length of the A5086 under consideration is shown below.

Figure 3: A5086 Looking North

2.3 A site visit was carried out by the Assessment Team during the afternoon of Wednesday 26 April 2023 during which the weather was bright and warm, and the road surfaces were dry. Traffic was light and free flowing, and two cyclists (but no pedestrians) were observed.

Operational Assessment

2.4 The Assessment Team were provided with traffic count data giving volumes, vehicle classifications and speeds, taken over a 7-day period from 4th-10th August 2018 outside 'The Countryman'. The results for the combined 2-way movements are summarised in Table 1.

Table 1: Automatic Traffic Count Data

A5086 Classified 2-way Vehicle Flows and Speeds – August 2018								
Day	Car/Light Van	Rigid HGV	Artic HGV	Bus/ Coach	Other	Total	Average Speed (mph)	85 %ile Speed (mph)
Sat 4th	3033	219	10	11	118	3391	50.5	57.6
Sun 5th	2731	163	19	6	140	3059	50.7	57.5
Mon 6th	3706	413	23	28	73	4243	50.4	57.4
Tue 7th	3832	431	20	24	86	4393	50.2	57.0
Wed 8th	3908	400	20	19	90	4437	49.3	56.4
Thu 9th	3946	467	28	15	130	4586	50.4	57.5
Fri 10th	3740	447	30	23	84	4324	49.5	56.7
Total	24896	2540	150	126	721	28433	-	-
Weekday Average	3826	432	24	22	93	4397	50.0	57.0
7-Day Average	3557	363	21	18	103	4062	50.1	57.2
% of Flow	87.6	8.9	0.5	0.4	2.6	100.0	-	-

2.5 The majority of vehicles were cars and light vans, representing 87.6% of the overall vehicle flow, with around 450 rigid and articulated goods vehicles recorded during an average weekday (9.4% of the flow). The 'other' vehicles recorded are not specified but make up only 2.6% of the flow.

2.6 The average and 85%ile speeds are both lower than the posted speed limit of 60mph. Although not shown in the table, an average of 93 vehicles exceeded the speed limit each day (about 0.3% of the total flow).

2.7 Visibility for drivers turning out of the existing access opposite the Asby Road junction is adequate, despite it being on the inside of a slow bend. The access road runs approximately

parallel to the A5086 and is part of its previous alignment. However, this alignment, when combined with its proximity to the A5086, means that drivers of long vehicles (in particular rigid HGV's) cannot complete the right-turn in and left-turn out of the access junction without encroaching within the Asby Road junction opposite. This is supported by videos submitted to the Assessment Team showing (a) an articulated HGV turning into and out of the access junction, and (b) a large rigid vehicle turning in. The videos showed both vehicles encroaching slightly into the Asby junction while turning.

2.8 The full length of the assessment site is an overtaking section, with varying lengths of centreline and warning lines. While the warning lines should, in theory, encourage fewer overtaking manoeuvres, overtaking could occur in the vicinity of both the existing and proposed junctions.

Collision History

2.9 An investigation of the Crashmap database has revealed a number of collisions occurring on the A5086 in the vicinity of the existing and proposed access junctions. The database displays collisions that have occurred between 1999 and 2021. The collision locations are shown in Figure 4, and the details summarised in Table 2 below.

Figure 4: Collision Locations

Table 2: Collision Details

Collision Number	Day & Date	Approximate Location	Number of Vehicles	Number of Casualties	Severity
1	Monday 29.05.2000	Outside 'The Countryman'	1	1	Slight
2	Sunday 02.03.2003	Outside 'The Countryman'	3	1	Slight
3	Monday 04.05.2009	Asby Road Junction	2	1	Slight
4	Tuesday 29.01.2013	75m north of the Asby Road Junction	1	1	Slight

2.10 The four collisions generated a single casualty each, all sustaining slight personal injuries. As the database spans 23 years (1999 to 2021 inclusive), this represents a collision frequency of just under 0.2 collisions per year.

2.11 The single collision that occurred at the Asby Road junction involved two cars, both travelling in a southbound direction. The first vehicle was in the process of turning right from the A5086 towards Asby when it was struck on the offside by a following vehicle attempting to overtake.

2.12 The most recent collision recorded in the vicinity of the existing and proposed access junctions occurred in 2013. As there have been no collisions recorded in the last 10 years, the potential for future collisions can only be qualitatively assessed for the existing and proposed junctions, as described in the following sections.

3. EVALUATION OF POTENTIAL ROAD SAFETY ISSUES

3.1 The favourable collision history on the A5086 suggests that motorists' behaviour, including the complex turns for long vehicles at the existing junction, is not likely to be a negative contributory factor when considering the potential for future collisions. However, the potential for collisions resulting from the overrun of the Asby junction, while perhaps not quantifiable, remains a slight risk. In addition, scuffing of the carriageway by turning articulated vehicles could eventually result in the surface deteriorating, with the attendant risk of reduced grip for general traffic and a sliding dismounting hazard for motorcyclists. Damaged surfaces can also retain water that can freeze and present a slipping and skidding hazard. Consequently, removal of those manoeuvres (and thus the associated risks) would be considered to represent an overall road safety benefit.

3.2 The provision of a new junction with the A5086 (as per the proposals) would introduce turning movements that will represent a level of risk for collisions between turning vehicles and those continuing through the junction on the main line. However, the drawings supplied for the assessment show that full visibility splays of 2.4m x 215 m are achievable. In addition, turns in and out of the junction by both long rigid and articulated vehicles can be made without encroaching within the opposing lane (other than the exiting left-turn for the articulated vehicle, which shows a small encroachment). The junction features a 7.3m wide access road carriageway, flaring to a bellmouth with 10m kerb radii and 2m verges.

3.3 Stopping sight distance for motorists approaching vehicles turning at the proposed junction is adequate. Full overtaking sight distance is also achievable in the national speed limit section, and overtaking is reported to occur. However, the potential for overtaking in the vicinity of the proposed junction can be potentially reduced by the provision of warning lines on the approaches.

3.4 At priority give way junctions, there is always a risk (however small) of overshoot and restart type collisions involving drivers failing to give way. This can be mitigated by ensuring that the surface has adequate levels of wet grip and that the give way point is clearly visible, with appropriate signing and marking.

4. CONCLUSIONS, RECOMMENDATIONS AND OPPORTUNITIES

Conclusions

4.1 A Road Safety Assessment has been carried out on two options for access to a facility comprising a food distribution centre, a milk distribution facility and agricultural storage units to the east of the A5086 at Whinnah, Lamplugh.

4.2 The collision history has shown that there have been no collisions in the vicinity of the assessment site in the last 10 years, with a total of 4 collisions occurring in the 23 year period between 1999 and 2021 inclusive.

4.3 The following describes the positive and negative elements, in road safety terms, of the two options for access to the facility: -

Option 1 – retain the existing junction

Positive elements:

- The junction has been operating for a number of years without any collisions occurring associated with turning vehicles.

Negative elements:

- The junction is a non-standard layout in terms of its usage by long vehicles;
- Right-turn in and left-turn out movements for long vehicles requires encroachment within the Asby junction opposite, and thus the opposing lane for the left-turn out manoeuvre;
- Scuffing of the carriageway surface could increase the risk of a number of collision types.

Option 2 – provide the new junction

Positive elements:

- The junction will be a standard layout familiar to road users;
- Movements of long vehicles into and out of the facility will be catered for without significant encroachment into the opposing lane;
- Use of the existing junction to access the facility can be limited to smaller vehicles.

Negative elements:

- The introduction of a new junction could result in the risk of turning collisions.
- While not a safety issue, the new junction will be a maintenance liability for the Local Highway Authority.

4.4 The favourable collision history argues for the status quo, despite the existing junction being sub-standard in terms of its use by long vehicles. However, on balance, it is concluded that providing the new junction for access to the facility (Option 2) would be more beneficial in terms of road safety and ease of operation. However, the Assessment Team considers that the benefit is marginal in road safety terms, so the following recommendations should be considered in that light, and that perhaps other factors (such as capital outlay and maintenance costs) should also be taken into account when deciding the way forward through the planning process.

Recommendations

4.5 Recommendation 1: Proceed with Option 2 and provide the new junction;

4.6 Recommendation 2: On the assumption that Recommendation 1 is accepted and progressed, change the existing centre line system to warning lines on the junction approaches;

4.7 Recommendation 3: On the assumption that Recommendation 1 is accepted and progressed, restrict the use of the existing junction for vehicles accessing the facility. As a minimum, this would remove the right-turn in and left-turn out for long vehicles (this can be achieved by agreement with the applicant).

Opportunities

4.8 While evidence from the favourable collision history, speed data and standard design elements for the new junction suggest that the road should continue to operate in relative safety, the opportunity could be taken to introduce measures to further reduce any potential risks. This would include mitigating against any risks associated with turning movements into and out of The Countryman public house and restaurant.

4.9 Opportunity 1: Investigate the feasibility and effectiveness of extending the 40mph speed limit to the north to encompass both the new junction and the accesses to 'The Countryman'.

APPENDIX A

RISK ASSESSMENT

RISK ASSESSMENT

1 The risk assessment matrix below compares the likelihood of frequency of collisions with the severity should one occur. The two factors combine to give an indication of the risk. The predictions of frequency and severity are based on a number of factors such as previous collision history (which has shown no personal injury collisions[1]), speed and volume of traffic, site observations and the highway infrastructure.

RISK ASSESSMENT MATRIX

		FREQUENCY OF COLLISION			
		More than one per year	One every 1-4 years	One every 5-10 years	Less than one every 10 years
SEVERITY	Fatal	Very high risk	High risk	High risk	Medium risk
	Serious	High risk	High risk	Medium risk	Medium risk
	Slight	High risk	Medium risk	Medium risk	Low risk
	Damage only	Medium risk	Medium risk	Low risk	Very low risk

2 It is estimated that the frequency of a collision of any type occurring in the vicinity of the existing and proposed junctions, and on their approaches, is likely to be less than one every 10 years, and that the highest severity is likely to be slight personal injury[2]. This generates an overall risk evaluation of low.

[1] There have been no collisions on the A5086 in the vicinity of the assessment site in the past 10 years.
[2] The collisions that occurred up to 2013 (the year of the most recent recorded incident) were all slight severity.