Road Safety Audit – Ellesmere

Stage:	**1**
Location:	**Scotland Street and Canal Way, Ellesmere, Shropshire**
Site:	**Proposed additional arm to existing roundabout, right turn lane at existing signalled junction, and cycle link at new development access**
ATSS Ref:	**231201**
Client Ref:	**2314**
Date:	**23 February 2024**

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Project Details

Report Title:	**Stage 1 road safety audit, Ellesmere**
Date:	**23 February 2024**
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Prepared by:	**Avon Traffic & Safety Services Ltd**
On behalf of:	**Highgate Transportation Ltd**

Report Control Sheet

	Name	Position	Date
Audit requested by	Fiona Bennett	Highgate Transportation Ltd	4 December 2023
Team leader	Tasos Papaloucas	Team Leader	
Team Member	James Dawson	Team Member	
Observer			
Draft report issued by	Tasos Papaloucas	Team Leader	4 January 2024
Final report issued by	Tasos Papaloucas	Team Leader	23 February 2024
Designer's response issued by			

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1. Introduction

1.1 Avon Traffic & Safety Services Ltd has been commissioned by Highgate Transportation Ltd, to undertake a Stage 1 Road Safety Audit, with regard to the proposals for access to a large new development to the southwest of Ellesmere, Shropshire. The proposals for audit are:

- Addition of a fourth arm to the currently three-arm roundabout at the A495 Scotland Street/Ellesmere Business Park junction, a two-lane entry on each arm and informal pedestrian crossings across all arms
- Provision of a short right turn lane in the centre of the A495 Scotland Street/Canal Way junction for vehicles turning right from the A495 (W) onto Canal Way
- Provision of cycle facilities at the Canal Way entrance to the development (which is yet to be constructed)

1.2 The RSA Brief was supplied by Highgate Transportation Ltd and accepted by the Audit Team. The Brief and Audit Team were approved by Fiona Bennett, Director, Highgate Transportation Ltd.

1.3 Ellesmere is a market town located near the Welsh border with local amenities including amongst others, pubs, restaurants, cafes, a post office, a library and a primary school. The Mere, a shallow lake on the east side of the town, is a popular attraction for tourists, particularly birdwatchers. The town is crossed by the A495, which provides a link to Oswestry on the west and Whitchurch on the east, and the A528, which connects the town to Wrexham, 12 miles to the north and Shrewsbury, 17 miles to the south.

1.4 The three audit sites are on the southwestern side of the town. The current three-arm roundabout is on the A495, a single carriageway and the main access to Ellesmere from the west where it joins the A5 at Oswestry. It is situated in a semi-rural area approximately 1 mile west of the town centre, with Ellesmere Business Park to the north and open fields to the south. The fields are bordered by mature hedgerows, a section of which will be removed to provide the fourth arm. The roundabout is within a 30mph speed limit which changes to national speed limit approximately 75 metres further west. It has street lighting and a footway only on the north side providing access for pedestrians walking between the business park and the town centre. There are no footways west of the roundabout however a public footpath provides a link for walkers wishing to access adjacent fields on the north side. The central roundabout island, which incorporates an overrun area, is on a slight gradient falling north to south while the eastbound approach rises gradually as it approaches the roundabout. Splitter islands are currently in place on each arm, but these do not incorporate any infrastructure for pedestrians or cyclists. The A495 is a bus route.

1.5 The Scotland Street/Canal Way junction is situated on the west part of the town, in a 30mph speed limit area and approximately 500 metres from the centre of the town. Canal Way is the main access to a large residential area and a Tesco superstore, located approximately 150m further south. The junction is in a flat, urban environment, with streetlights and footways on all sides. The A495 approaches from the east and west are very narrow and due to the need to facilitate larger vehicles turning, all three stop lines are set significantly back from the middle of the junction. The junction is a three-arm signalised junction where each arm is controlled independently in 3 stages while the existing pedestrian crossing facilities are on demand.

1.6 Canal Way, which will form an access to the new development, is a residential street subject to a 30mph speed limit and provides access to a Tesco superstore and residential properties. It has a system of street lighting and footways on both sides. The audit site is at the south end of Canal Way just south of its junction with Telford Avenue and is currently a stub end cul-de-sac with open fields which fall gently away in a north to south direction. Evidence on site suggest that the fields are used regularly by walkers and dog walkers.

1.7 The audit team members are:

Tasos Papaloucas	–	Team Leader
James Dawson	–	Team Member

1.8 The audit took place during December 2023 and comprised of an examination of the documents/plans listed in Appendix A. The auditors visited site together between 3.35pm and 4.45pm on Thursday 21 December 2003 when the weather conditions were fine and dry but very windy. Vehicle flows at the Canal Way access to the new development were light while at the other two sites they were moderate. Speeds appeared commensurate with the existing speed limit. Several pedestrians and one cyclist were observed at the Scotland Street/Canal Way junction but none at the other two audit sites.

1.9 Data from Crashmap.org show that there have been no reported collisions involving injury, in the 5 years 2017-2021 inclusive, in the vicinity of the proposals.

1.10 Traffic figures from a March 2023 automatic count on the A495 some 350 metres east of the Business Park roundabout showed peak hour 2-way flows of 709 (am peak) and 634 (pm peak), and weekday 85%ile speeds of 34.2 (eastbound) and 37.8 (westbound). Predicted flows taken from the Transport Statement suggest that 2-way peak hour flows generated by the development will be approximately 730 (am peak) and 820 (pm peak). The Transport Statement suggests 80% of these movements will be through the roundabout, and 20% through Canal Way.

1.11 The audit team have not been made aware of any departures from standards or relaxations in relation to the proposed scheme.

1.12 The audit was carried out under the terms and conditions of DMRB GG 119. The team examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design with any other criteria. However, reference may be made to National/Local Guidance in order to verify a point.

1.13 Documents and drawings examined in this safety audit are listed at Appendix A.

1.14 General views of site

Approaching the Ellesmere Business Park roundabout from the north

The Ellesmere Business Park roundabout as seen from the east arm

The point where the new southern arm to the Ellesmere Business Park roundabout is to be constructed is circled

Looking west along the western Ellesmere Business Park roundabout arm with the location of the 30mph/national speed limit change circled

The central Ellesmere Business Park roundabout island is on a slight gradient

Looking north along Canal Way towards the signalised junction with the A495. The existing high friction surfacing does not extend to the stop line (circled) following previous surfacing

Approaching the Canal Way/A495 traffic signals from the west

Looking at the eastern arm of the Canal Way/Scotland Street junction from the narrow footway opposite Canal Way

The existing fields where the Canal Way access to the new development is to be constructed

The southern end of Canal Way as seen from opposite Tetchill Brook Road. The stub where residents currently park is the point where the access to the new development is to be formed

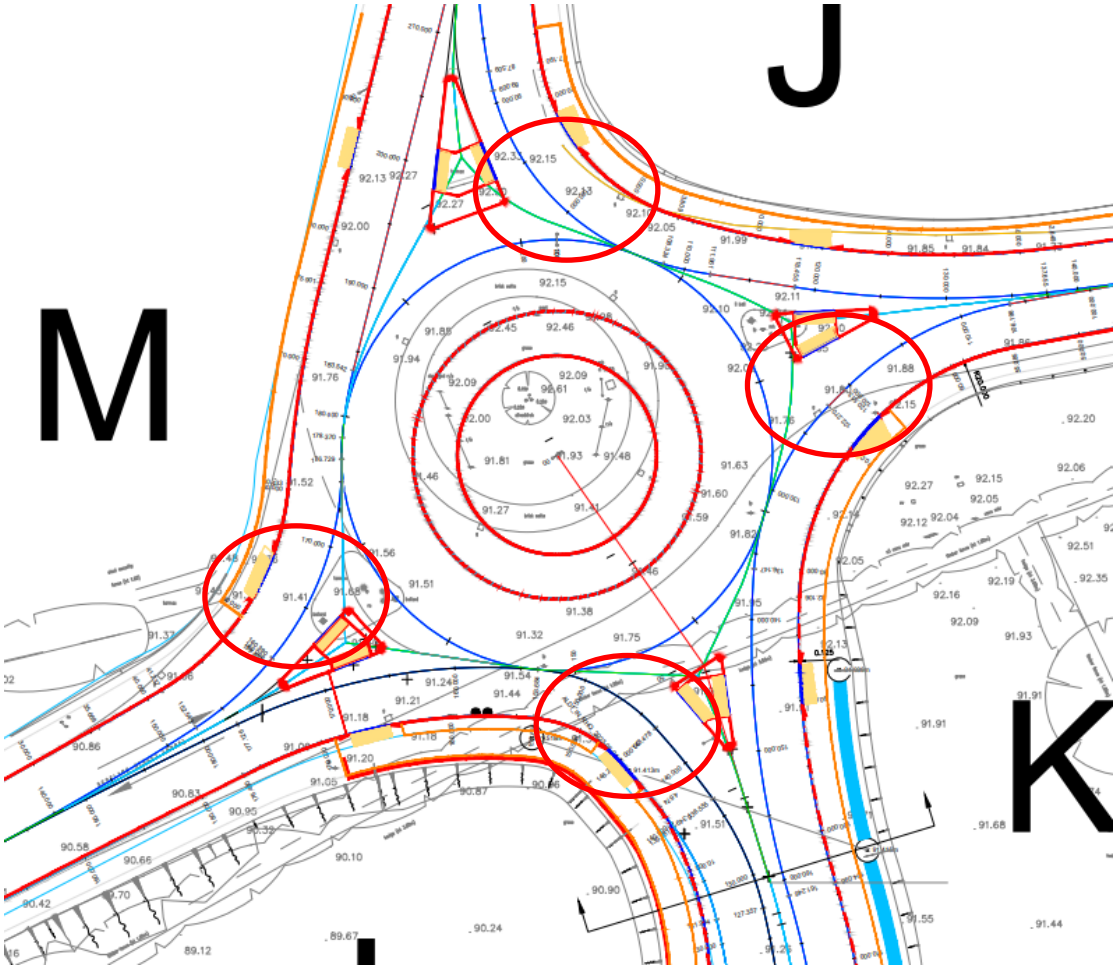
2. Safety Issues Raised in this Stage 1 Road Safety Audit. (see Appendix B for locations)

2.1 Problem

Location – All arms at Ellesmere Business Park roundabout

Summary – Risk of vehicle conflicts due to lack of driver guidance

The proposals include a two-lane entry on all approaches to the new roundabout however all exits are to be single lane. Without adequate provision to accommodate all manoeuvres, particularly along the A495 arms which are the busiest, the current design encourages conflict and may result in driver confusion and vehicle collisions at the exit points



The current two-lane entry single-lane exit design may increase conflicts and confusion to drivers

Recommendation – Ensure that all approaches are well signed, and drivers are provided with sufficient information to assist them in making the correct lane decision when approaching and negotiating the new roundabout

2.2 Problem

Location – Ellesmere Business Park roundabout, south arm

Summary – Risk of vehicle side-swipe or junction overshoot type collisions due to inadequate visibility

The new south arm is proposed to be installed by removing part of an existing hedgerow. No information has been submitted to the audit team showing that the hedgerow on either side will be removed/relocated so that sightlines are kept clear of obstruction. If sightlines are obstructed by the existing hedgerow or other features, they may result in side-swipe or junction overshoot type collisions

Looking left (west) and right (east) at the proposed south roundabout arm – Sections of this hedgerow would need to be removed to establish adequate visibility

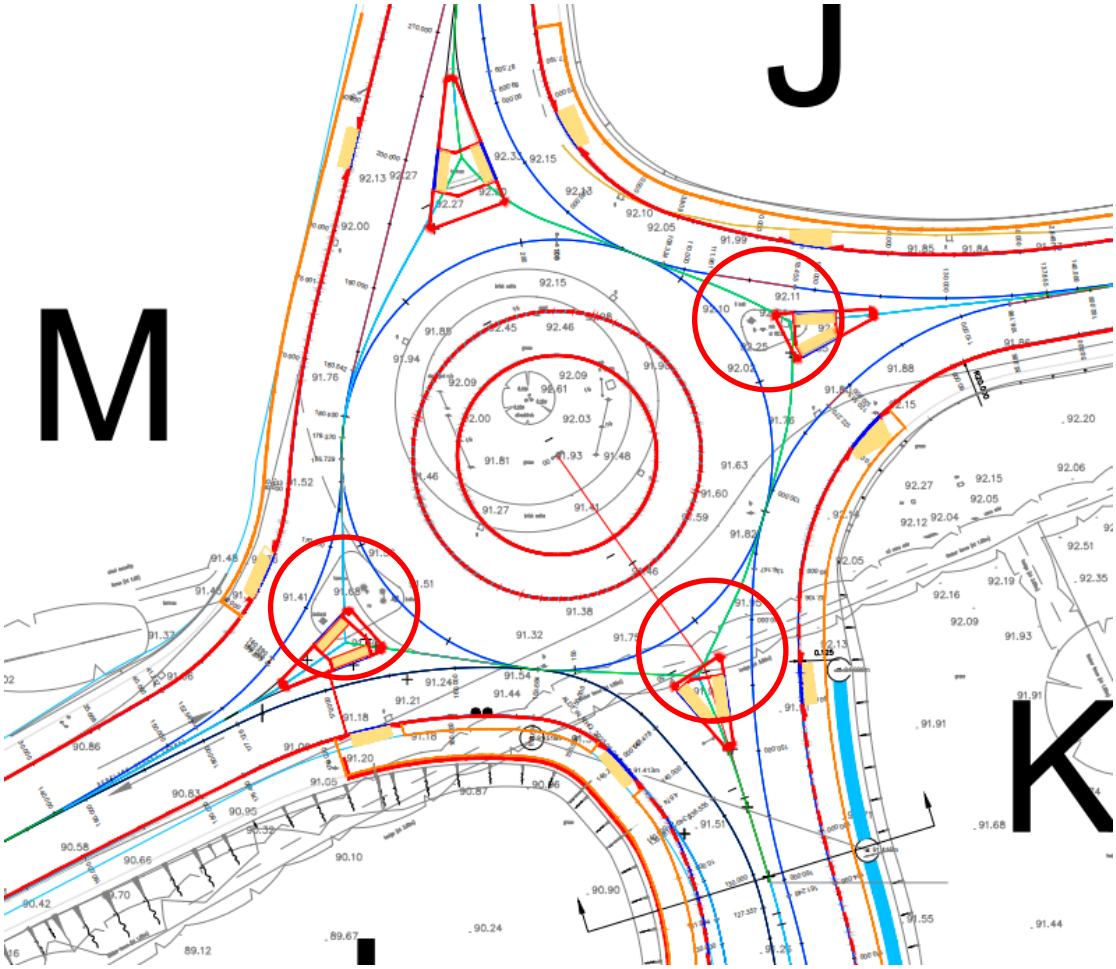
Recommendation – Arrange for significant sections of the existing hedgerow to be permanently removed and keep the verge to the east and west clear of any other obstructions to ensure that visibility for drivers approaching the roundabout from the new south arm is always clear

2.3 Problem

Location – Proposed splitter islands on the south, east and west arms at Ellesmere Business Park roundabout

Summary – Risk of driver confusion and loss of control or rear-end shunt type collisions due to lack of driver information

Due to the location of the tactile paving slabs the new splitter islands appear to have insufficient room to incorporate reflective bollards or direction signs at their front end. Lack of reflective bollards may result in drivers striking the islands as they negotiate the roundabout in poor visibility conditions. The absence of direction signage may cause confusion to some drivers who may suddenly brake or change direction resulting in loss of control or rear-end shunt type collisions



The proposed splitter islands appear to be too small to accommodate upright reflective bollards or direction signs

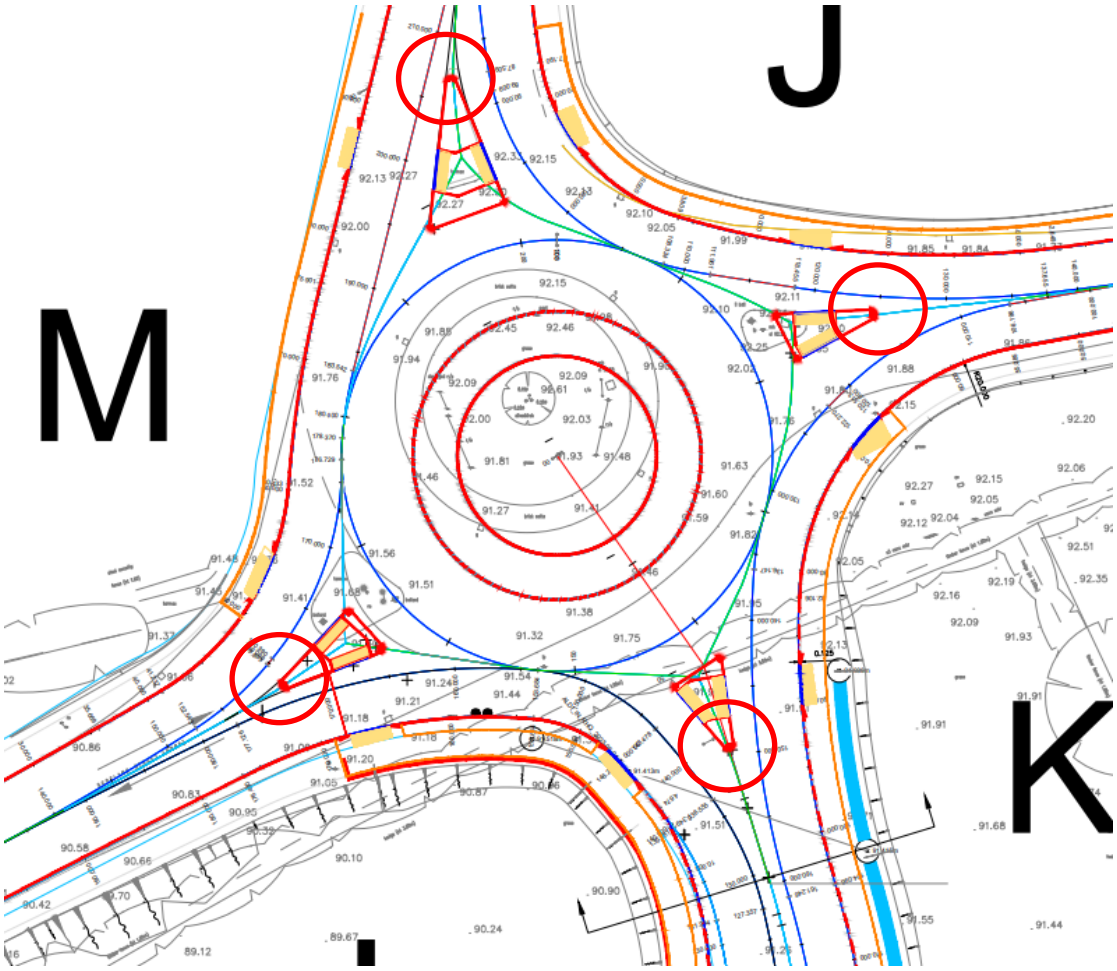
Recommendation – Ensure that bollards and direction signage can be accommodated within the new roundabout layout

2.4 Problem

Location – Splitter islands on all arms of Ellesmere Business Park roundabout

Summary – Risk of head-on type collisions due to lack of 'keep left' bollards

The new and modified splitter islands do not include upright bollards or any other infrastructure to guide approaching traffic away from them and onto the correct path before entering the roundabout. Lack of such infrastructure may result in drivers striking the islands during periods of poor visibility and losing control of their vehicles or entering the roundabout on the incorrect side and colliding head-on with oncoming traffic



Bollards on each approach to the roundabout would highlight the presence of the splitter islands ahead

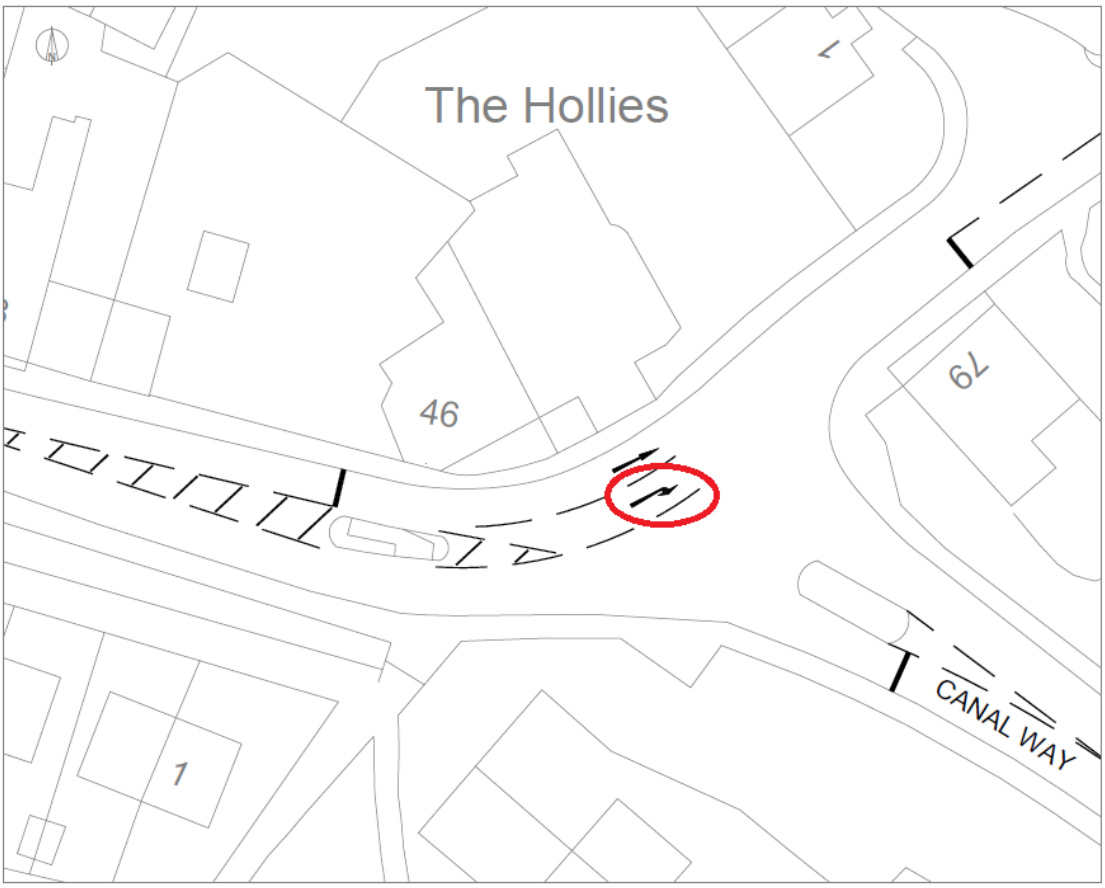
Recommendation – Ensure that suitable signing infrastructure is included in the proposed roundabout modifications to prevent collisions at the approaches to the roundabout

2.5 Problem

Location – Scotland Street/Canal Way junction

Summary – Risk of head-on and rear-end shunt type collisions due to lack of space for opposing vehicles to pass each other

The current arrangement at this three-arm junction facilitates each approach to operate independently in three different stages. In order to allow the junction to operate within capacity once the new development site is complete, it is proposed to combine the eastbound and westbound A495 stages into one stage and to provide a 'holding area' within the centre of the junction for vehicles turning right from the westbound A495 onto Canal Way. The right turn holding area appears to be in the path of oncoming traffic and in the lack of any tracking information the auditors are concerned that this proposal will cause conflict between those turning right and those approaching from the east resulting in head-on or rear-end shunt type collisions



Vehicles in the proposed right turn lane waiting to turn into Canal Way may conflict westbound traffic

Recommendation – Undertake swept path analysis of the proposed layout to make sure that vehicles, particularly HGVs can access and ensure that the modifications to the existing junction layout do not result in vehicle conflicts

2.6 Problem

Location – Scotland Street/Canal Way junction

Summary – Risk of pedestrian/vehicle conflicts due to insufficient room for vehicles to safely pass

The proposed changes to the existing staging of the signalised junction as described in problem 2.6 above, will result in traffic turning right into Canal Way having to give way to traffic approaching from the east. Site observations suggest that the right turn manoeuvre at this junction is popular with drivers accessing the Tesco superstore and the adjacent housing development. No vehicle tracking information has been submitted to the audit team showing how eastbound vehicles heading towards the town centre can pass those waiting in the 'holding area' turning right. In the lack of such information the auditors are concerned that eastbound drivers along the A495 may mount the existing footway, which is very narrow at this point, to pass those waiting to turn right, resulting in pedestrian/vehicle collisions

The existing footway is very narrow and any changes to the existing junction layout may result in pedestrian/vehicle conflicts

Recommendation – Undertake swept path analysis to make sure that vehicles, particularly HGVs can pass those waiting to turn right. Ensure that the modifications to the existing junction layout do not result in pedestrian/vehicle conflicts

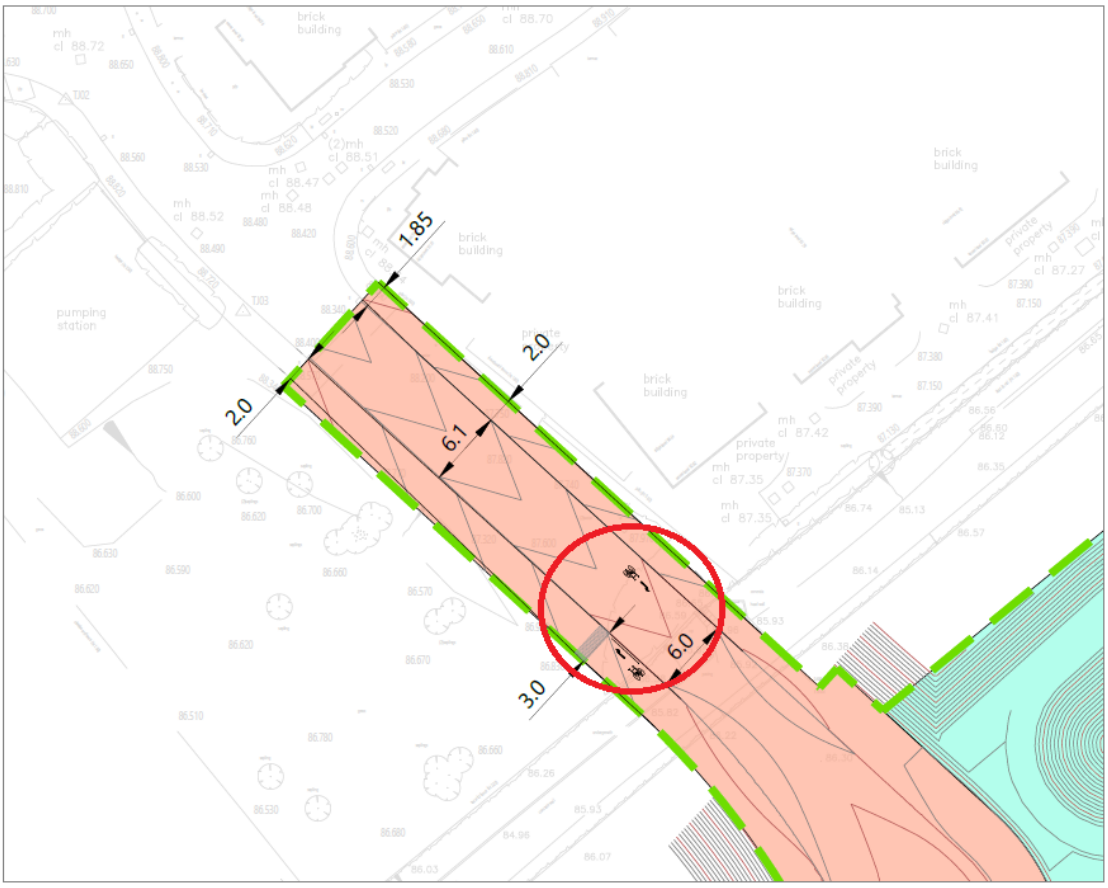
2.7 Problem

Location – Canal Way access to the new development

Summary – Risk of cyclist/vehicle collisions due to inadequate cycle transition

Road markings, incorporating a cycle symbol and turn right arrow, are proposed at the new access for cyclists approaching the new development from the northwest to transition onto a proposed shared-use footway on the south-eastern side. This transition creates conflict between road users as cyclists already in the carriageway may not look over their shoulder to turn right onto the shared-use footway and may collide with traffic approaching from behind them. Young, non-confident cyclists whose numbers may well increase following the completion of the new development site, are at a higher risk of conflict

Similarly, northbound cyclists are directed off the shared use path directly into the carriageway, with no physical protection from northbound vehicles approaching from behind them, whose drivers will not be expecting a cyclist to enter the carriageway at this point



The proposed layout encourages conflicts between cyclists and vehicles

Recommendation – Re-assess the current proposal and ensure that a safer cycle transition is provided, either at this location or elsewhere in the vicinity, to allow cyclists to access, and leave, the proposed shared-use footway safely

3. Audit Team Statement

We certify that this audit has been carried out in accordance with DMRB GG 119

Audit Team Leader:

Name: Tasos Papaloucas MCIHT; MSoRSA NH Cert. Comp
Senior Auditor

Signed: Date: 23/2/2024

Audit Team Member:

Name: James Dawson BSc (Hons); Eng Tech; MIHE Reg RSA; AMRSGB
Senior Auditor

Signed: Date: 23/2/2024

Appendix A: Information Utilised in this Stage 1 Road Safety Audit

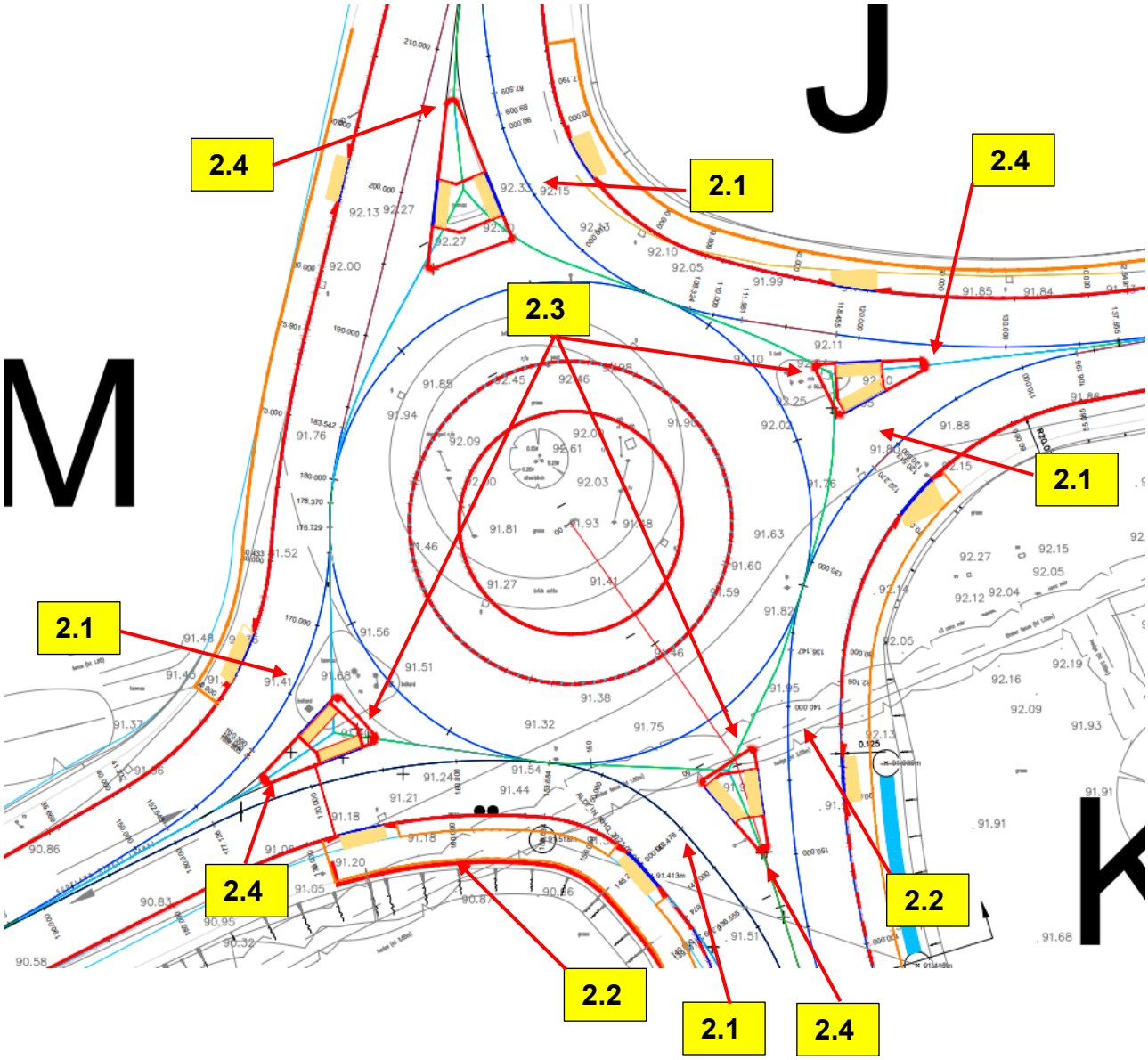
Drawings:

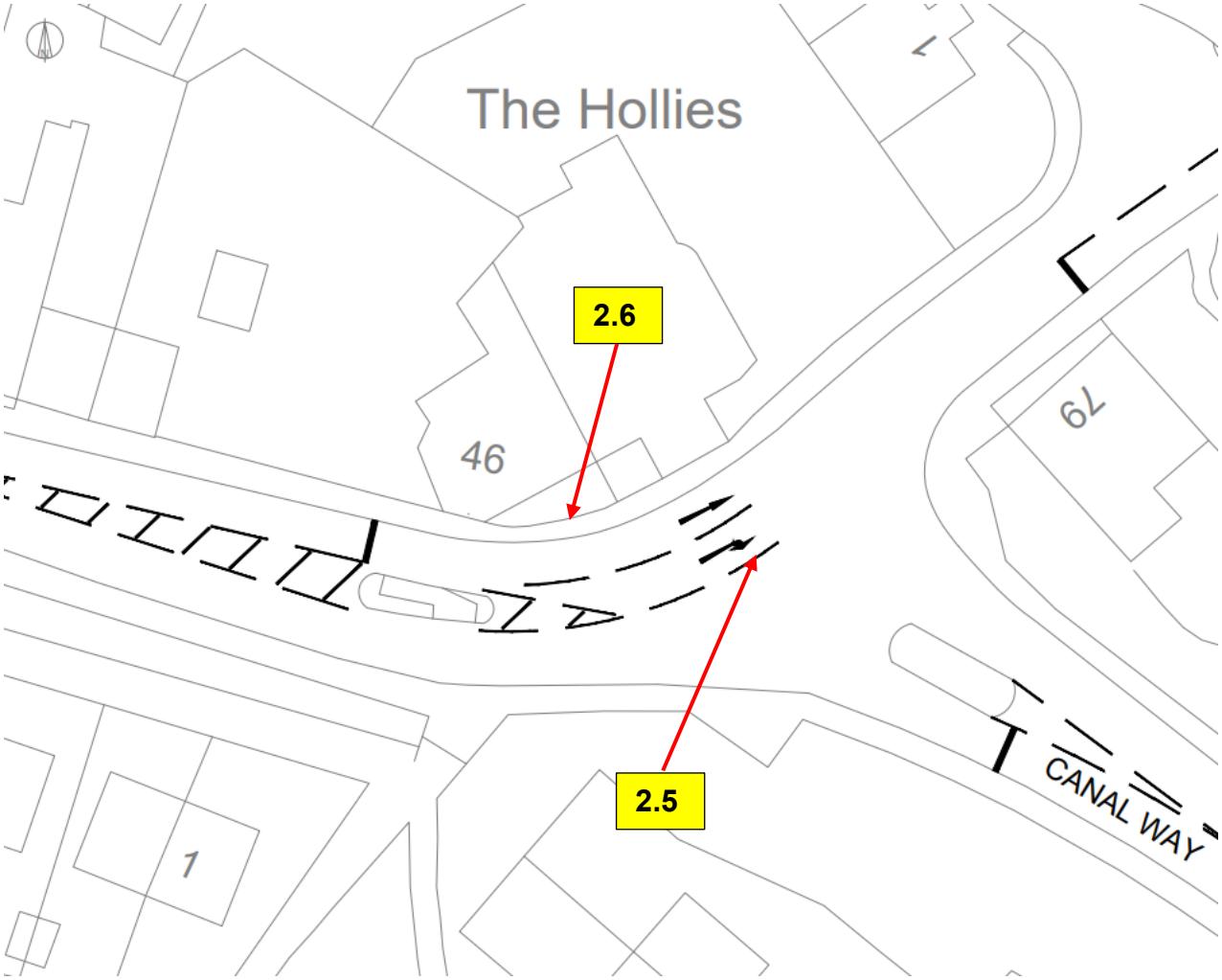
2314 02 – Proposed Right Turn Lane at Canal Way/Scotland Street
2314 03 – Proposed Connection to Canal Way-Cycle Link
2314 06 – Strategic Linkages Plan

C1581-SG1-ZZ-278-DR- 702-P01	Roundabout Pavement Construction Layout
C1581-SG1-ZZ-278-DR-C-203-P01	Roundabout GA Pavement & Verge Construction
C1581-SG1-ZZ-278-DR-C-1101-P01	Roundabout Kerb Layout

Canalside Development, Ellesmere - Transport Assessment (2314/TA/01) July 2023
Canalside Development, Ellesmere - Transport Assessment - Appendices

Appendix B: Key Plan showing Audit Problems




The Hollies
2.6
46
79
2.5
CANAL WAY
1


1.85
2.0
2.0
6.1
2.7
6.0
3.0

Appendix C – Site location plan