

ROAD SAFETY AUDIT STAGE 1: SPRINT SCHEME

The following document is the technical note which forms the first stage of the Road Safety Audit.

A Road Safety Audit is carried out when significant changes to the local highway network are proposed. The audit provides an independent assessment of the key design and operating arrangement of the highway works.

The Road Safety Audit identifies potential road safety issues or problems, recommends measures to eliminate or mitigate these problems and enables the 'client' in this case TfWM to provide a response to the audit. In some instances, the issues highlighted may not require further action as they have been considered as part of a wider discussion with supporting partners e.g. rationale for not including vegetation in central reservations.

A road safety audit is not a check to see if a scheme meets design standards.

Road Safety Audits are conducted at four stages throughout a highway improvement scheme:

- Stage 1 – Completion of preliminary design
- Stage 2 – Completion of detailed design
- Stage 3 – Completion of construction
- Stage 4 – Monitoring (12 months and 36 months)

A Road Safety Audit is conducted by an Audit Team, which is independent to the Design Team. The Audit Team will be a minimum of two people with appropriate levels of training, skills and experience in Road Safety Engineering and/or Accident Investigation.

Source: https://www.highwayengineer.co.uk/road_safety_audit.htm

Project:	A34 Sprint - Walsall to Birmingham	Job No:	60599248
Subject:	A34 Birmingham Road / Beacon Road - Stage 1 Road Safety Audit Designer's Response		
Prepared by:		Date:	03/10/2019
Checked by:		Date:	19/11/2019
Approved by:		Date:	20/11/2019

Introduction

The following technical note is produced to document the Designer's Response to each issue raised within the Stage 1 Road Safety Audit (RSA) of the proposed A34 Sprint highway improvement works on Birmingham Road, between its junctions with Beacon Road and Walstead Road, Walsall.

The Stage 1 RSA was carried out by AECOM in September 2019. The Designer's Response should be read in conjunction with this report.

The technical note indicates each of the concerns identified by the safety auditors together with the recommendation made to address the problem. The Designer's Response to the recommendations has been shown in *italics*.

1.0 MATTERS ARISING FROM THIS STAGE 1 ROAD SAFETY AUDIT

1.1 Problem: 1

Drawing: 60599248-ACM-0100-P&C-SK-TR-000026

Location: Scheme Extents

Summary: **Location of enforcement cameras may restrict visibility of vehicles resulting in side swipe collisions.**

The proposals extend the existing bus lane further north on the western side of the carriageway, however no details have been provided showing the location of enforcement cameras. If enforcement cameras are positioned in unsafe locations and an errant vehicle leaves the carriageway and strikes the camera, the collision severity may be increased. Additionally, if enforcement cameras are positioned such that they are not visible to oncoming drivers, vehicles may be unaware of the bus lane and travel within it leading to conflicts and collisions with vehicular traffic.

Recommendation:

It is recommended that enforcement cameras are positioned within the verge such that visibility is attained for approaching drivers.

Design Organisation Response

Accepted Part Accepted Rejected

No Bus Lane Enforcement cameras are currently proposed to be located in this section of the A34 Sprint scheme. Where provided elsewhere, they are either attached to existing lighting columns or positioned on new posts in the verge / footway. It is noted that unlike speed cameras, there is no requirement to make bus lane enforcement cameras conspicuous and they are therefore not required to be painted yellow. They should therefore not provide a distraction to the motorist.

Client Organisation Comments

Bus lane cameras will be located to minimise strike likelihood. Signage will be provided to make drivers aware of the bus lanes and will not rely on cameras to indicate bus lane locations.

1.2 Problem: 2

Drawing: 60599248-ACM-0100-P&C-SK-TR-000026

Location: U-Turn in Central Reserve

Summary: HGVs will over hang if they have to wait to give way before they u-turn which may result in collisions.

The proposals build out the existing kerb line which reduced the area of the existing u-turn facility opposite Lodge Road. A swept path has been undertaken which shows HGVs can make the manoeuvre without mounting the kerb by over running on to the hatching. If a HGV did take the correct path shown in the drawing, it will overrun the northern kerb line resulting in damage. Similarly, if a HGV were to wait to give way, it would over hang on to the carriageway which may result in shunt type collisions.

Recommendation:

It is recommended that the u-turn facility is modified to ensure all manoeuvres can be safely and efficiently undertaken.

Design Organisation Response Accepted Part Accepted Rejected

The road markings mimic the existing provision of this gap as a u-turn, not a direct right turn into Beacon Road / Lodge Road. The majority of vehicles making this u-turn are either cars or vans and the swept paths shown on the drawing indicates that the manoeuvre is achievable. The largest vehicles, including coaches from the rugby club, will have to start their manoeuvre from the single general traffic lane and utilise the hatching to make their manoeuvre as the driver sees fit.

Client Organisation Comments

Signage to prevent HGV manoeuvres will be considered during detailed design stage.

1.3 Problem: 3

Drawing: 60599248-ACM-0100-P&C-SK-TR-000026

Location: Birmingham Road

Summary: Narrow lane may cause vehicles to strike the kerb resulting in damage or loss of control.

The proposals separate the bus lane and traffic lane with a splitter island which creates a pinch point on the bend. If vehicles hit the pinch point at accelerated speeds due to the downhill approach, they may strike the kerb which could lead to vehicle damage or loss of control of the

vehicle. This may be exacerbated by the fact the chevron signs cannot be seen due to overgrown vegetation.

Recommendation:

It is recommended that the splitter island is shortened in width to allow for wider lanes and the vegetation is cut back and maintained around the signage.

Design Organisation Response	<input type="checkbox"/> Accepted <input checked="" type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
<i>At this pinch point, lane width is 3.25m, which is wide enough to accommodate vehicles making this manoeuvre. Additionally, we will have trief-type high containment kerbs on both islands, which will encourage drivers to reduce their speed. Additionally, we accept that the overgrown vegetation should be properly maintained by the highway authority to maintain visibility to the existing chevron signs.</i>	
Client Organisation Comments	
Enhanced road markings to encourage correct lane positioning and reduced speed shall be considered during detailed design.	

1.4 Problem: 4

Drawing: 60599248-ACM-0100-P&C-SK-TR-000026

Location: Beacon Road and Lodge Road

Summary: Vehicles turning right out of Beacon Road and Lodge Road may over run on to the bus lane resulting in side swipe collisions.

The proposals extend the bus lane heading northbound along Birmingham Road, however, vehicles turning right out of Lodge Road and Beacon Road may overrun on to the proposed bus lane when making the manoeuvre. This may cause oncoming buses to side swipe with the vehicle or brake suddenly injuring on board passengers.

Recommendation:

It is recommended that a swept path analysis is undertaken to ensure all vehicles can make this manoeuvre without over running in to the bus lane.

Design Organisation Response	<input type="checkbox"/> Accepted <input checked="" type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
<i>For small vehicles, such as cars and vans, the manoeuvre can be completed without crossing into the bus lane. The largest vehicles will always find it necessary to cross into the bus lane to make the manoeuvre, but it must be for the driver respect the solid line of the bus lane and give way to buses in it before joining the northbound traffic lane.</i>	
Client Organisation Comments	
A swept path shall be undertaken to understand the extent of crossing into the bus lane for larger vehicles.	

1.5 Problem: 5

Drawing: 60599248-ACM-0100-P&C-SK-TR-000026

Location: Birmingham Road

Summary: **Narrow lanes may result in larger vehicles graze type collisions when side by side.**

Lane widths have been proposed for the scheme, however, before the entrance to the Bell Inn, the bus lane and general traffic lane appear to be narrow. If a bus and HGV were to inadvertently pass too close to one another, graze-type collisions may occur resulting in potential injuries to passengers.

Recommendation:

Undertake a swept path analysis to ensure a Sprint bus and HGV can travel side by side.

Design Organisation Response	<input type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input checked="" type="checkbox"/> Rejected
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Existing lane widths are maintained at the junction and on the approach to the junction are 3.3m and 3.1m which are considered to be sufficient.

Client Organisation Comments

Minimum bus and general traffic lane widths have been agreed and the widths fall within tolerance.

1.6 Problem: 6

Drawing: 60599248-ACM-0100-P&C-SK-TR-000026

Location: Rugby Club Entrance

Summary: **Poor alignment may result in over run in to the bus lane as vehicles egress from the Rugby Club causing collisions with buses.**

The proposals extend the bus lane heading northbound along Birmingham Road, however, vehicles accessing and egressing the Rugby Club may overrun on to the proposed bus lane when making the manoeuvre. This may cause oncoming buses to side swipe with the vehicle or brake suddenly injuring on board passengers.

Recommendation:

Undertake a swept path analysis to ensure all vehicles can access / egress from the Rugby Club without over running in to the bus lane.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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All vehicles will need to cross over the bus lane to access the Rugby Club but it is a minor entrance with a relatively low volume of traffic and the road markings reflect this in accordance with Traffic Signs Manual Chapter 5. Vehicle tracking shows that the manoeuvre works acceptably for the types of vehicles most likely to access the Rugby Club, including coaches. Large articulated HGVs are not expected to make use of this entrance.

Client Organisation Comments

Swept path analysis will be reviewed to confirm that rigid body coaches do not over run into the bus lane. HGV's are not anticipated to use the rugby club access.

1.7 Problem: 7

Drawing: 60599248-ACM-0100-P&C-SK-TR-000026

Location: Central Reserve

Summary: Unclear guidance may result in vehicles striking the kerb, especially during the hours of darkness.

The existing kerb line at the central reserve is to be amended under the proposals; however, there is no indication on the drawing that the existing bollard is to remain. If the bollard is not maintained and relocated, vehicles may fail to see the kerb line, particularly during the hours of darkness. This may result in a vehicle inadvertently traveling too close to the kerb line and striking it leading to loss of control collisions.

Recommendation:

It is recommended that bollards are retained and include keep left arrows.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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Existing bollard should remain in this location and has been shown as such in the next revision of the detailed design.

Client Organisation Comments

Comment accepted and will be incorporated into detailed design.

2.0 CLIENT ORGANISATION STATEMENT:

I accept these proposals by the Design Organisation

Name:

Position: Scheme Delivery Manager

Organisation: Transport for West Midlands

Signed:

Dated:28/01/2020