



Dewsbury Bus Station Refurbishment

Dewsbury Bus Station Refurbishment - Stage 1 Road Safety Audit

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West Yorkshire Combined Authority

Dewsbury Bus Station Refurbishment

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
0	25/05/2023	Draft	MP	MS	MP	MP
1	23/06/2023	Final	MP	MS	MP	MP

Table of Contents

1.	Introduction	3
1.1	General.....	3
2.	Items raised at previous audits.....	4
2.1	General.....	4
3.	Items raised in this audit.....	5
3.1	General.....	5
4.	Audit Team Statement	10
Appendix A. Drawings and Documents Considered by the Audit Team.....		11
Appendix B. Audit Problem Reference Drawing.....		12

1. Introduction

1.1 General

This report is the result of a Stage 1 Road Safety Audit (RSA) of works associated with the proposed refurbishment of Dewsbury Bus Station. The scheme involves extensive refurbishment and physical improvements to the bus station, reconstruction and reconfiguration of the forecourt and platform areas and minor changes to the layout at the junctions with the local highway network. The scheme forms part of a programme of works proposed by Kirklees Council and West Yorkshire Combined Authority (WYCA), which aim to make public transport journeys along the A638 safer and more reliable by increasing the number of buses, easing congestion, and improving cycle routes and pedestrian crossings.

The audit was carried out at the request of Steve Butcher (project manager, WYCA) who approved the Audit Brief. The Audit Brief (version P03) was issued to the RSA team by Chris Davies (design lead, Jacobs) on 16 June 2023. An earlier version of the brief (version P01) had been issued to the audit team on 12 May 2023.

The audit team membership, approved by Steve Butcher (project manager, WYCA) was as follows:

Dr Mark Powell BSc(Eng), MSc(Eng), PhD, CMILT
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Audit Team Leader

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Audit Team Member

The audit team visited the site together on Thursday 18 May 2023 during the hours of daylight. The site visit covered the following period: 08:45 to 10:45 hours.

The weather during the site visit was overcast with sunny intervals. The road surface was dry. Traffic was generally free flowing in the vicinity of the bus station, however vehicles travelling eastbound on Aldams Road were observed to occasionally queue back from its junction with Church Street through the upstream Aldams Road / B6409 junction, which includes the exit from the bus station.

The terms of reference of the audit are as described in GG 119. The 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.

A full list of all the documents and drawings considered by the audit team is included in Appendix A. The scope of this Stage 1 RSA included all elements of the scheme as detailed within the drawings included in Appendix A.

The following information was requested by the audit team, but was not made available by the time of the audit site visit or during the reporting period:

- full STATS19 collision details, including collision descriptions, contributory factor codes and a collision plot

Appendix B contains the audit problem reference drawing.

2. Items raised at previous audits

2.1 General

The proposed scheme has not been subjected to any previous RSAs.

3. Items raised in this audit

This section presents identified safety issues, starting from the north-eastern extents of the scheme and then moving anti-clockwise through the scheme i.e. north-east to north-west to south-west to south-east.

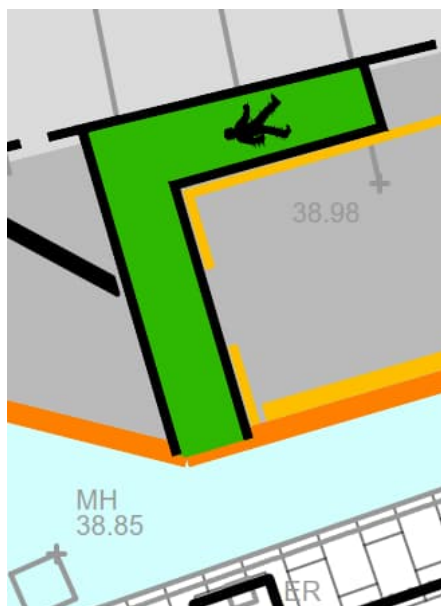
3.1 General

3.1.1 Problem 1

Location: A – Bus stand 19

Summary: High kerb may lead to pedestrian injury

The kerbing proposed between the footway and the marked pedestrian route that guides passengers to board and alight vehicles using bus stand 19 is the same kerb type as that proposed at the bus stands further west (e.g. bus stand 18). The audit team assumes that bus stand 19 would be used by left-hand drive vehicles and that the kerbing type indicated in orange would be a high kerb suitable for level access of passengers boarding and alighting vehicles. If a high kerb type is provided at the point of access to the marked pedestrian route, then there is a risk of pedestrians suffering injury when negotiating the height difference. In addition, the high kerb would act as a barrier to wheelchair users and pedestrians with prams, increasing the risk of injury to these users should they attempt to negotiate the kerb, and potentially increasing their exposure to being struck by a vehicle accessing or egressing the bus stand.



Recommendation

Level access should be provided between the footway and the marked pedestrian route.

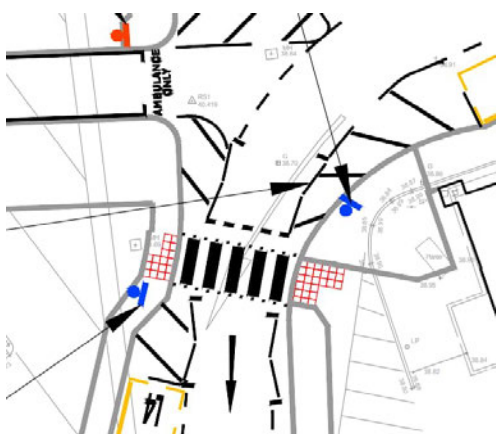
3.1.2 Problem 2

Location: B – Proposed crossing close to the ambulance waiting area

Location: F – Bus station exit onto Aldams Road

Summary: Insufficient space provided within the 'roadway' through the bus station

There are two locations where the audit team considers there may be an increased likelihood of collisions due to insufficient space being provided within the 'roadway' through the bus station. The first of these is at the proposed crossing close to the ambulance waiting area and the second is the 2-lane approach to the station exit. Insufficient space at the proposed crossing would increase the likelihood of vehicles striking pedestrians waiting to use the crossing. Insufficient space at the bus station exit would increase the risk of side swipe collisions.



Recommendation

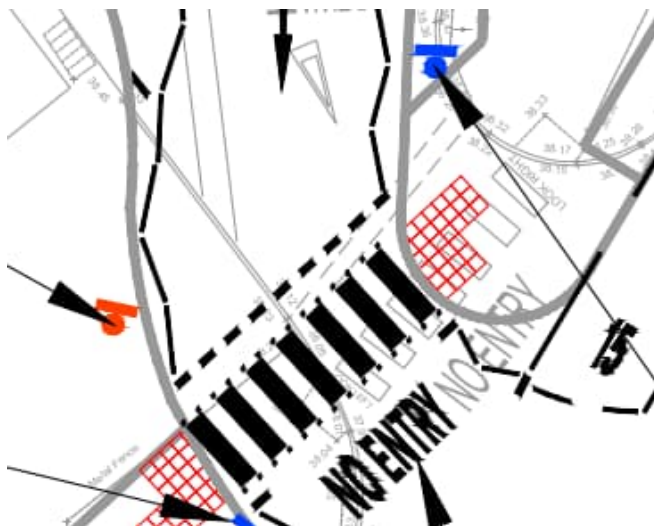
The designer should satisfy themselves that the whole of the proposed internal network can accommodate the movements of the largest anticipated vehicle type, undertaking any swept path analysis as necessary.

3.1.3 Problem 3

Location: C – Southbound approach to zebra crossing that links the south-western entry from Aldams Road with the south-western pedestrian entrance to the bus station

Summary: Warning sign would provide drivers with limited advance warning of the presence of the crossing

The zebra crossing warning sign on the approach to this zebra crossing is proposed to be located close to the crossing itself and would therefore provide drivers with limited advance warning of the presence of the crossing. There is therefore an increased risk of collisions involving vehicles striking pedestrians using the crossing.



Recommendation

The zebra crossing warning sign, together with the proposed 'No right turn' sign which is proposed to be mounted on the same post, should be located further north on the approach to the crossing.

3.1.4 Problem 4

Location: D – Zebra crossing at Aldams Road entry to bus station

Summary: Reduced intervisibility between drivers and pedestrians using the crossing

Driver visibility of the proposed crossing will be reduced due to the number of signs at this entry to the bus station. However, it is not clear, from the proposals, which, if any, signs are being removed. The belisha beacon that is proposed on the south-eastern side of the crossing appears to be very close to an existing No Entry sign, which may reduce the visibility of both these elements to drivers. Reduced driver visibility to the crossing will reduce

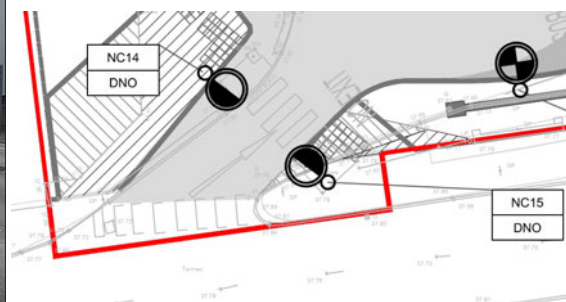
driver awareness of the crossing and is likely to increase the risk of shunt (nose to tail) collisions, noting the potential for queued vehicles at the proposed crossing to block back onto Aldams Road.

Intervisibility is particularly poor between pedestrians waiting to cross from the north-western side of the crossing and drivers of eastbound vehicles approaching the crossing. A large bush obstructs visibility at this location. The bush appears to be within the ownership of the bus station.

The following additional issues are also relevant to consideration of the above collision risks:

- The proposed removal of the nearby existing crossing oriented parallel to Aldams Road will increase the number of pedestrians using the proposed crossing
- During the site visit, a relatively high proportion of elderly pedestrians were observed using the existing crossings close to the south-western entry to the bus station

There is an increased risk of collisions involving vehicles striking pedestrians using the zebra crossing.



Recommendation

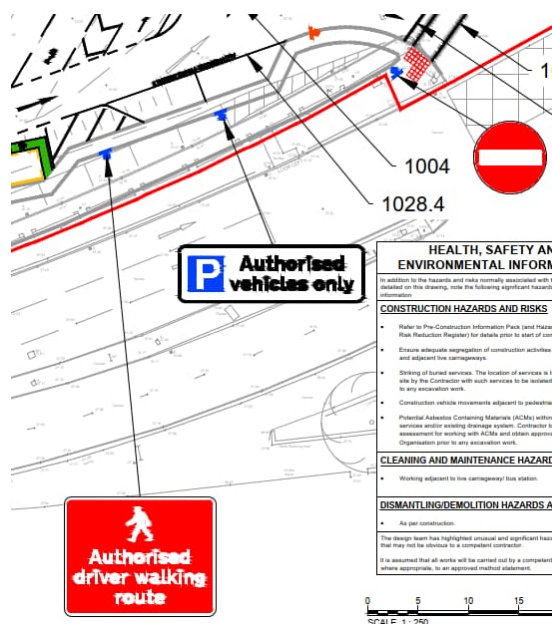
The existing bush, west of the crossing, should be cut back and / or reduced in height to improve intervisibility between drivers and pedestrians using the crossing. Traffic signs at this entry to the bus station should be rationalised to maximise the conspicuity of the proposed crossing to drivers.

3.1.5 Problem 5

Location: E – Path provided along the southern boundary of the bus station

Summary: Potential for unauthorised pedestrians to walk along the path

A sign is proposed on the path provided along the southern boundary of the bus station to indicate that the path is a walking route for authorised drivers. The sign is proposed to be located approximately 40m west of the signalised crossing at the bus station exit junction. It is not clear whether the existing signing provided close to the crossing, and which indicates no access for pedestrians, is being retained. The proposals may lead to an increased likelihood of unauthorised pedestrians walking along the path provided adjacent to the southern boundary of the bus station. There is therefore an increased risk of pedestrians walking in areas where buses are manoeuvring and associated collisions involving pedestrians being struck by buses.



Recommendation

Signing to advise pedestrians that the path is for authorised users only should be provided close to the signalised crossing at the bus station exit.

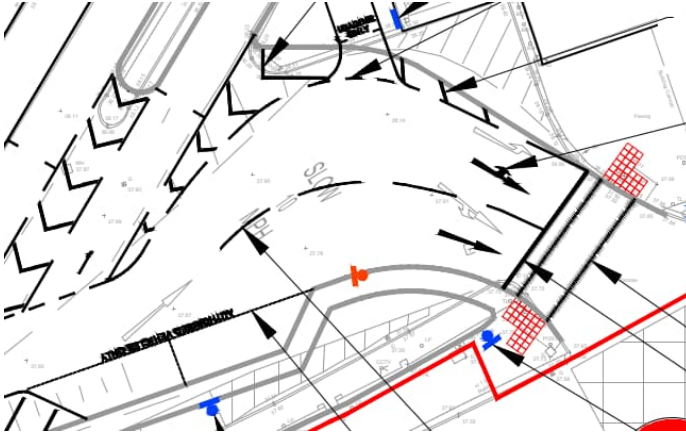
3.1.6 Problem 6

Location: F – Bus station exit onto Aldams Road

Summary: Ahead arrow marking in two lanes but junction exit has only a single lane

An ahead arrow marking is shown in both lanes at the exit from the bus station, however the downstream exit from the signalised junction (B6409) has only a single lane. There is therefore an increased likelihood of side swipe collisions if two vehicles attempt to travel ahead side by side when exiting the bus station.

In addition, the offside lane of the exit from the bus station is marked for the ahead movement only. Drivers seeking to turn right onto Aldams Road may be confused when faced with an ahead arrow, with an increased likelihood of collisions resulting from driver hesitancy or late manoeuvres.



Recommendation

The ahead arrow marking should be omitted from the nearside lane of the bus station approach to the junction. The alignment of the bus station approach lanes and B6409 exit are such that the ahead movement is best accommodated in the offside lane of the bus station approach. The offside lane should be marked for ahead and right turning vehicles.

4. Audit Team Statement

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

Road Safety Audit Team Leader

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Signed:

Date: 23 June 2023

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Date: 23 June 2023

Appendix A. Drawings and Documents Considered by the Audit Team

Drawings and Documents Considered by the Audit Team

RSA1 brief (version P03) and Scheme Drawings as shown in the table below:

Number	Revision	Date	Title
B2382808-JAC-GEN-XX-DR-ZZ-0001	P04	May 2023	General Arrangement
B2382808-JAC-GEN-XX-DR-ZZ-0003	P02	May 2023	Existing Site Layout
B2382808-JAC-GEN-XX-DR-ZZ-0004	P02	May 2023	Kerbs Footways and Carriageway Pavement
B2382808-JAC-GEN-XX-DR-ZZ-0005	P03	May 2023	Road Markings and Signs
B2382808-JAC-GEN-XX-DR-ZZ-0006	P02	May 2023	Fencing, Guardrails and Street Furniture
B2382808-JAC-GEN-XX-DR-ZZ-0009	P02	May 2023	External Lighting

Appendix B. Audit Problem Reference Drawing

