

Elland Station Access Package Stage 1 Road Safety Audit

November 2021 (Initial Issue)

Prepared on behalf of Calderdale Council

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1. Introduction and Background

1.1 PROJECT DETAILS

Report title	Stage 1 Road Safety Audit
Date	17 th November 2021
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Prepared by	Optima Highways
On behalf of	Calderdale Council

1.2 INTRODUCTION

1.2.1 Optima Highways and Transportation Consultancy Ltd (Optima) has been appointed to undertake a Stage 1 Road Safety Audit of the proposed pedestrian and cycle access enhancements associated with the proposed new railway station in Elland, known as the Elland Station Access Package.

1.2.2 The Road Safety Audit has been carried out by experienced Road Safety Engineers employed by Optima, who are independent from the design process and have been approved by the Overseeing Organisation (Calderdale Council). The Road Safety Audit Team membership consisted of:

Martin Whittaker FIHE MSoRSA

Road Safety Audit Team Leader (Director, Optima)

Tom Pridmore

Road Safety Audit Team Member (Associate, Optima)

1.3 PREVIOUS ROAD SAFETY AUDITS

1.3.1 The Road Safety Audit Team has not been made aware of any previous Road Safety Audits of the proposed works.

1.4 SCHEME DETAILS

1.4.1 The proposed works include a variety of pedestrian and cycle enhancements within Elland and West Vale, in addition to the formation of the station access and associated pedestrian crossing along Lowfields Way. The works are described in detail within Section 4.3 of the Optima Transport Assessment (December 2020), which was included within the Road Safety Audit Brief.

1.4.2 The following Atkins drawings summarised within Table 1.2 were provided to the Audit Team for the purposes of the Audit in relation to proposed station access and toucan crossing along Lowfield Way.

Drawing Number	Revision	Title
5194139-ATK-DRG-EHW-000002	P01	WYCA Elland Station Grip 4 – Toucan Crossing General Arrangement
5194139-ATK-DRG-EHW-001201	P01	WYCA Elland Station Grip 4 – Traffic Signals Preliminary Design
5194139-ATK-DRG-EHW-001301	P01	WYCA Elland Station Grip 4 – Toucan Crossing Lighting Layout

Table 1.2 Schedule of Atkins Drawings



1.4.3 The following JBA Consulting drawings summarised within Table 1.3 were provided to the Audit Team for the purposes of the Audit in relation to proposed station access and crossing along Lowfields Way.

Drawing Number	Revision	Title
BDX-JBAU-00-DR-C-0100	A3-C03	Location Plan
BDX-JBAU-XX-EL-DR-C-0019	A3-C03	Navigation and Calder Bridge – Tied Arch Bridge Option
BDX-JBAU-XX-EL-DR-C-0064	A3-C02	Navigation and Calder Bridge - Details
BDX-JBAU-XX-EL-DR-C-0071	A3-C03	Elland Tow Path – General Arrangement
BDX-JBAU-XX-EL-DR-C-0071	A3-C03	Elland Tow Path – Sections and Details
BDX-JBAU-XX-EL-DR-C-0120	A3-C04	Elland – General Arrangement Overview
BDX-JBAU-XX-EL-DR-C-0121	A3-C03	Exley Lane & Park Road, Elland
BDX-JBAU-XX-EL-DR-C-0122	A3-C04	Gas Works Lane & Riverside Park, Elland - GA
BDX-JBAU-XX-EL-DR-C-0123	A3-C05	Riverside Park & Wistons Lane, Elland - GA
BDX-JBAU-XX-EL-DR-C-0124	A3-C03	Jubilee Way to Eastgate, Elland - GA
BDX-JBAU-XX-EL-DR-C-0125	A3-C04	Eastgate, Elland - GA
BDX-JBAU-XX-EL-DR-C-0126	A3-C03	Eastgate to Elland Lane, Elland - GA
BDX-JBAU-XX-EL-DR-C-0127	A3-C03	Elland-Riorges Roundabout, Elland - GA
BDX-JBAU-XX-EL-DR-C-0128	A3-C03	Lowfields Way to Elland-Riorges Link, Elland - GA
BDX-JBAU-XX-EL-DR-C-0129	A3-C01	Elland-Riorges Link to Lower Edge Road, Elland - GA
BDX-JBAU-XX-EL-DR-C-0130	A3-C01	Millgate to Riverside Park, Elland - GA
BDX-JBAU-XX-EL-DR-C-0131	A3-C02	Wistons Lane Station Approach, Elland - GA
BDX-JBAU-XX-EL-DR-L-0001	A3-C01	Elland Landscape Proposals (1 of 6 Sheets)
BDX-JBAU-XX-EL-DR-L-0002	A3-C01	Elland Landscape Proposals (2 of 6 Sheets)
BDX-JBAU-XX-EL-DR-L-0003	A3-C01	Elland Landscape Proposals (3 of 6 Sheets)
BDX-JBAU-XX-EL-DR-L-0004	A3-C01	Elland Landscape Proposals (4 of 6 Sheets)
BDX-JBAU-XX-EL-DR-L-0005	A3-C01	Elland Landscape Proposals (5 of 6 Sheets)
BDX-JBAU-XX-EL-DR-L-0006	A3-C01	Elland Landscape Proposals (6 of 6 Sheets)
BDX-JBAU-XX-WV-DR-C-0021	A3-C03	West Vale Bridge Proposal
BDX-JBAU-XX-WV-DR-C-0110	A3-C01	West Vale – General Arrangement Overview
BDX-JBAU-XX-WV-DR-C-0111	A3-C02	Rochdale Road, West Vale - GA
BDX-JBAU-XX-WV-DR-C-0112	A3-C02	Stainland Road to Heath RUFC, West Vale - GA
BDX-JBAU-XX-VW-DR-C-0113	A3-C01	Heath RUFC to Towpath, West Vale - GA
BDX-JBAU-XX-VW-DR-C-0114	A3-C04	Black Brook Cycleway - GA & Longsection
BDX-JBAU-XX-VW-DR-C-0121	A3-C02	Black Brook Cycleway - Longsections
BDX-JBAU-XX-VW-DR-C-0122	A3-C02	Black Brook Cycleway - Sections & Details
BDX-JBAU-XX-VW-DR-L-0001	A3-C01	West Vale Landscape Proposals

Table 1.3 Schedule of JBA Drawings

1.4.4 The following additional information has also been supplied to the Road Safety Audit Team.

- Road Safety Audit Brief issued by Optima and approved by Bona Matturi, Corporate Lead (Design & Asset), Calderdale Council (Overseeing Organisation) dated 19th October 2021;
- Optima Elland Station Access Package, Transport Assessment dated 15th December 2020 (Planning Issue);
- Atkins Elland Station Study, Traffic Impact Assessment dated 24th November 2020;



- JBA Consulting Elland Station Access Improvements Planning, Design and Access Statement dated 6th January 2021; and
- Atkins Elland Station Site Plan 5194139-ATK-DRG-EAR-014101 PO1.

1.5 TERMS OF REFERENCE AND AUDIT DETAILS

1.5.1 This Road Safety Audit has been undertaken in accordance with GG 119 and a Road Safety Audit brief prepared by the Design Organisation and agreed with the Overseeing Organisation.

1.5.2 The above plans and information have been examined prior to the site visit, analysed in detail on site and at the offices of Optima following the visit.

1.5.3 A Site visit was carried out by the Road Safety Audit Team on Friday 5th November 2021 between the hours of 09:00 and 12:30. The weather was fine/dry and road surface during the visit was also dry. Moderate traffic, pedestrian and cycle volumes were observed over the majority of the study area.

1.5.4 The Road Safety Audit considers and reports only on the safety implications of the proposed scheme as presented and has not examined or verified the compliance of the designs to any other criteria. Comments made in this report relate to points which are considered to be worthy of attention in respect of safety.

1.5.5 Recommendations included within this report are intended to identify proportionate means of eliminating or mitigating the concern raised and should not be regarded as being prescriptive design solutions. There may be alternative methods of addressing a problem that would be equally acceptable and these should be considered in full by the Designer.

1.5.6 The reference and location of problems have been indicated on the plans contained at Appendix A, where appropriate.



2. Items Raised at Stage 1 Road Safety Audit

2.1 PROPOSED ACCESS ARRANGEMENTS & TOUCAN CROSSING (ATKINS)

Table 2.1 Problem 1

PROBLEM	
Location	Lowfields Way
Summary	Proposed road markings may result in driver confusion, indecision and poor vehicle positioning.
Lowfield Way carriageway. 3.0m wide re the island, ho of the schem The central h (which is not	y currently includes a centre line road marking to separate opposing flows on the single The proposed works include the provision of a toucan crossing, which incorporates a fuge island, therefore a central hatched markings are provided to guide traffic around owever these are not shown to tie into the existing centreline road markings to the north e. atching also appears to direct northbound vehicles towards an existing parking layby clearly shown), increasing the potential for rear shunt type collisions.
ELLAND S DESIGNED IN SU	TATION CAR PARK EPARATE SCHEME
Recommend	ation
It is recomme existing and a	ended that the proposed road markings are extended to show a suitable tie in with appropriate lane widths/alignment, adjacent to the retained parking layby.



Table 2.2 Problem 2

PROBLEM	
Location	Lowfields Way
Summary	The proposed staggered toucan crossing may cause conflict between cyclists, pedestrians and passing motor vehicles.
The proposed island with gu eastern flank	d works include a staggered toucan crossing, which incorporates a 3.0m wide refuge uard railing to connect with the proposed 3.0m wide shared footway/cycleway along the of Lowfields Way.
Although a Re noted that th recommende	oad Safety Audit is not a technical check of compliance against design standards it is e Traffic Signs Manual states that staggered toucan crossings are not generally ed.
It is also noted that a right/left stagger has been incorporated, which does not encourage pedestrians or cyclists to face oncoming traffic when using the crossing, although it is noted that the signals will include an all red phase.	
Based on the plans provided, the Road Safety Audit Team consider that the shared nature of the crossing, combined with the right/left stagger is likely to give rise to the potential for pedestrian and cyclist conflicts on the island while crossing and encourage users to cross without facing oncoming traffic.	
Recommend	ation

It is recommended that the staggered crossing is removed and replaced with a 'straight across' toucan crossing.

Table 2.3 Problem 3

PROBLEM	
Location	Lowfields Way
Summary	The proposed refuge island may encourage U-turns across the path of oncoming traffic and absence of signage may result in head on collisions with vehicles turning right out of the access.
A proposed r park access, v	efuge island is intended to restrict right turn movements into and out of the station car which extends to the north of the island by approximately 20m.
The specific r the distance within the bu may encoura of the station with southbo	need/requirement for a left in/left out junction arrangement is not clear, however given drivers would need to turn at the Lowfields Way/Savile Way/Lacy Way roundabout isiness park, coupled with the generous width of Lowfields Way, the proposed design ge exiting traffic to either perform a U-turn to the north of the island, or turn right out a along the opposite side of the carriageway, which increases the potential for a collision ound traffic or a head on collision with northbound traffic.
This issue is exacerbated by the lack of suitable signage informing drivers of the limited movement junction.	

Recommendation

It is recommended that measures are introduced to prevent unlawful manoeuvres and suitable signage is provided in accordance with the Traffic Signs Manual (Chapter 3).



Table 2.4 Problem 4

PROBLEM			
Location	Surrounding the Station		
Summary	The absence of parking restrictions may encourage on street parking.		
There are no access and no	There are no existing parking restrictions along Lowfields Way in the vicinity of the station car park access and no new restrictions are shown on the drawings provided.		
The absence of parking restrictions, may encourage vehicles to park along Lowfields Way or surrounding streets in the vicinity of the station access.			
On street parking may restrict forward visibility, result in pedestrian pinch points along the footway or possible queuing back to the nearby dumbbell roundabout, resulting in potential rear shunt type			

collisions.

Recommendation

It is recommended that suitable parking restrictions are introduced to prevent indiscriminate parking in the vicinity of the station.

Table 2.5 Problem 5

It is recommended that a swept path analysis is undertaken at the station access to confirm that the largest expected vehicles can be accommodated.



Table 2.6 Problem 6

PROBLEM	
Location	Lowfields Way access
Summary	Suitable visibility should be provided at each crossing to reduce the potential for conflict between pedestrians/cyclists and other road users.
A new staggered toucan crossing is proposed along Lowfields Way and an uncontrolled crossing is to	

be provided across the station access, which incorporates a narrow island (see problem 7). Details of the proposed landscaping along the site frontage are not shown on the Toucan Crossing General Arrangement (Atkins drawing 5194139-ATK-DRG-EHW-000002 P01), however indicative tree planting is shown to the south of the car park access on the Elland Station Site Plan (Atkins drawing 5194139-ATK-DRG-EAR-014101 P01), which may impact on visibility to/from the uncontrolled crossing, subject to the specific type of planting proposed.

Insufficient visibility from the crossings, increases the potential for a pedestrian to be struck by oncoming traffic.

Recommendation

It is recommended that suitable visibility splays are indicated on the drawing from all crossing locations and these are kept clear of all obstructions.

Table 2.7 Problem 7

PROBLEM	
Location	Lowfields Way access
Summary	The proposed narrow refuge may result in pedestrians being struck by vehicles entering/exiting the car park.
The proposed station car park access incorporates a central refuge island with tactile paving. The island is narrow at 1.0m in width.	
The narrow refuge island is not of sufficient width to accommodate pram or wheelchair users and may also become overcrowded during peak times, resulting in the potential for a pedestrian being struck by vehicles entering or exiting the car park.	
Recommendation	
It is recommended that the refuge island is widened to a minimum width of 2.0m.	

Table 2.8 Problem 8

PROBLEM	
Location	Lowfields Way access
Summary	The proposed lane widths could increase the potential for a vehicle colliding with a cyclist.
The proposed approximatel The Traffic Sig allow vehicles avoided.	d central refuge island along Lowfields Way results in reduced lane widths of y 3.4-3.6m. gns Manual 'Traffic Control' recommends a minimum gap of 4.0m between kerbs to s to overtake cyclists safely and states that gaps between 3.2m and 3.9m should be
Given the commercial/industrial nature of Lowfields Business Park a high proportion of heavy goods vehicles require regular access. Therefore the proposed island is unlikely to provide sufficient width to allow traffic, particularly HGVs, to safely pass a cyclist.	
Recommend	ation
It is recomme 'Traffic Contr	ended that the refuge island is designed in accordance with the Traffic Signs Manual of to safely accommodate cyclists along Lowfields Way.



Table 2.9 Problem 9

PROBLEM	
Location	Lowfields Way
Summary	A cyclist may collide with an existing road sign.
An existing road sign is situated on the eastern flank of Lowfields Way, on the inside of a bend, which will be situated within the new 3.0m wide shared footway/cycleway. There is no note on the drawing referring to its removal/relocation. Given the location of the sign on the inside of a bend, with limited forward visibility, a cyclist may	
collide with t	<image/>

Recommendation

It is recommended that the sign is relocated to the rear of the shared footway/cycleway.



Table 2.10 Problem 10

PROBLEM	
Location	Lowfield Way
Summary	Existing vegetation restricts visibility to the west for pedestrians/cyclists crossing Elland Riorges Link.

Existing vegetation located between Lowfields Way and Elland Riorges Link restricts visibility to the west for pedestrians and cyclists wishing to cross Elland Riorges Link (west to east). The limited visibility increases the potential for users of the crossing being struck by vehicles turning left out of Lowfields Way.



Recommendation

It is recommended that the existing vegetation is cut back/reduced in height and appropriately maintained to provide suitable visibility from the western crossing position.



2.2 PROPOSED OFF SITE HIGHWAY WORKS (JBA)

PROBLEM	
Location	Elland Riorges Link
Summary	An existing gulley could cause tripping / slipping accidents involving pedestrians utilising the improved uncontrolled crossing point.
The proposed front of the d gulley grating Additionally, falls.	d uncontrolled crossing point is located such that an existing gulley is situated directly in ropped crossing point on the east side of Elland Riorges Link. Given the slots within the s, it is possible that a cyclists wheel may get caught in the grating and fall into the road. the grating may become slippery in wet or icy conditions leading to pedestrian/cyclist

Table 2.11 Problem 11

Recommendation

It is recommended that the crossing is moved to avoid the position of the gulley or alternatively a non-slip/trip gulley grating may be available for specification at detailed design.



PROBLEM		
Location	Elland Riorges Roundabout – southbound on slip (Calderdale Way)	
Summary	Standing water could lead to loss of control collisions or pedestrian slips in poor weather conditions.	
Evidence of e illustrated or	Evidence of existing water ponding was observed on the western crossing of Calderdale Way, as illustrated on the image below.	
CALDER	DALE WAY	

Table 2.12 Problem 12

Excessive standing water in this location could lead to the potential for vehicle loss of control collisions or pedestrian slips, particularly during poor or wintery weather conditions.

Recommendation

It is recommended that the channel/kerb up stand are reprofiled in order to ensure that the crossing and adjacent footway drain appropriately.



Table 2.13 Problem 13

PROBLEM	
Location	Elland Riorges Link/Lower Edge Road
Summary	The proposed cycleway may encourage eastbound cyclists to discharge into oncoming traffic.

A new cycleway is provided along the southern flank of Elland Riorges Link, which terminates opposite Oliver Meadows. The cycleway is bidirectional, therefore cyclists travelling eastbound away from the station are required to re-join the carriageway. In the absence of cycle lane give way markings and associated signage, cyclists may enter the carriageway in error, into the path of westbound traffic.



Recommendation

It is recommended that suitable give way markings and signage is provided to inform eastbound users of the cycleway.



Table 2.14 Problem 14

PROBLEM	
Location	Stainland Road
Summary	The proposed crossing may increase the potential for a collision with a crossing pedestrian or rear shunts due to sudden braking.

A new signalised crossing is proposed to connect Clay House Park with Black Brook cycleway. The crossing is located on the inside of a bend along Stainland Road with restricted visibility due to the presence of a high retaining wall and existing vegetation along the boundary of Clay House. As a result, forward visibility for northbound vehicles, and pedestrian visibility southbound is

restricted, as illustrated on the image below.



Insufficient visibility for pedestrians to be able to see and be seen may lead to pedestrians being struck by oncoming traffic.

Recommendation

It is recommended that speed surveys are undertaken to determine whether appropriate forward visibility can be achieved. In the event that insufficient visibility can be achieved, it is recommended that either the crossing is relocated to a more appropriate location or additional measures are introduced to ensure approach speeds are reduced to justify a reduced visibility distance.



Table 2.15 Problem 15

PROBLEM	
Location	Stainland Road
Summary	Excessive footway crossfall may lead to pedestrian slips/falls and difficulty for partially sighted, blind and wheelchair users.

The existing footway along the eastern flank of Stainland Road is subject to a steep crossfall, that appears to exceed the recommended crossfall of 1 in 40 (2.5%) as illustrated on the image below.



It is noted that this footway will be widened to 2.0m, however no cross sections have been supplied confirming whether the footway crossfall is to be improved.

Retaining the current crossfall may contribute to pedestrian slips/falls, particularly during poor weather conditions and difficulty for partially sighted, blind and wheelchair users.

Recommendation

It is recommended that the footway is reprofiled in order to achieve a maximum crossfall of 1 in 40.



3. Audit Team Statement

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

Road Safety Audit Team Leader

Name: Martin Whittaker FIHE MSoRSA

Position: Director

Organisation: Optima Highways & Transportation Ltd

Date: 17th November 2021

Signed:....

Road Safety Audit Team Member Name: Tom Pridmore Position: Associate Organisation: Optima Highways & Transportation Ltd Date: 17th November 2021

Prignore A

Signed:....



Appendices



Appendix A Problem Location Plans













General Notes All dimensions shown are in metres unless otherwise stated and levels in metres to Ordnance Datum. Ordnance Survey map data reproduced by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. All rights reserved. The Calderdale MBC Contractor Licence was made on September 17, 2019 between The Borough Council of Calderdale of the Town Hall, Halifax HX1 1UN (the Licensor) and JBA Consulting, The Old School House, St Joseph's Street, Tadcaster LS24 8JF. 3. All dimensions must be checked/verified on site. KEY: Application Boundary New and existing/resurfaced macadam New buff polyurethane Anti-Skid Soft landscaping/verge/reinstatement Rectangular concrete block paving Existing Public Highway Footway \ominus ($\overset{*}{\ast}$) Existing lighting column. Proposed lighting column.)) (for details refer to MCE Ltd · → (* lighting design and specifications) Proposed bollard lighting. Ó (for details refer to MCE Ltd lighting design and specifications) ⊖ ⊖ Proposed feature/downlighting. (for details refer to MCE Ltd lighting design and specifications) +64.9 SCH CD RB C02 14/12/2020 Minor amends. SCH CD RB First Issue. C01 23/10/2020 Drawn Chkd Appr Description of Revisions Rev Date tatus A3 - Developed Design Consultant Calderdale JBA Council JBA Consulting The Old School House St Joseph's Street TADCASTER Calderdale Metropolitan Borough Council Economy and Environment Highway Works Huddersfield Road ELLAND HX5 9JR LS24 9HA Tel:01937 837900 Calderdale Metropolitan Borough Council Elland Railway Station Access Improvement Works Drawing Title Stainland Road to Heath RUFC, West Vale General Arrangement Date 23/10/2020 S.Hutchings Signed Stutting Drawn Date 23/10/2020 Signed Sticting S.Hutchings The Schecked C.Dale Signed Date 23/10/2020 sa Signed Date 23/10/2020 RyBuck R.Buck lational Grid Reference Scale(s) 1:250 @ A1 Structure Reference Sheet 1 of 1 Drawing Number Revision C02 BDX-JBAU-XX-WV-DR-C-0112