

APPROVED

DRAFT

NOT FOR PUBLIC RELEASE

ATKINS

Member of the SNC-Lavalin Group

Galway Cycle Network Phase 1

WP-02 Doughiska Road (South) - Stage 1 Road
Safety Audit

Galway City Council

June 2021

Notice

This document and its contents have been prepared and are intended solely as information for Galway City Council and use in relation to for this scheme.

WS Atkins Ireland Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 15 pages including the cover.

Document history

Revision	Purpose description	Origin-ated	Checked	Reviewed	Authorised	Date
Rev 0	Draft Issue	DM	CP	DM	TM	June 2020
Rev 1	Including Designer Response	DM	CP	DM	TM	May 2021
Rev 2	Including Client Sign-Off	DM	CP	DM	TM	June 2021

Client signoff

Client	Galway City Council
Project	Galway Cycle Network Phase 1: WP2 Doughiska Road (South)
Job number	5193732
Client signature / date	

Contents

Chapter	Page
1. Introduction	5
1.1. Background	5
1.2. Site Inspection	5
1.3. The Team	5
1.4. The Design	5
1.5. Compliance	5
2. Road Safety Issues Identified	6
2.1. Problem: Pedestrian / Cyclist and Vehicle / Cyclist Conflicts	6
2.2. Problem: Inadequate Tie-in and Transitions	6
2.3. Problem: Inadequate Provision for Vulnerable Road Users	6
2.4. Problem: Conflict Through Shared Area	7
2.5. Problem: Pedestrian Crossing Away from Desire Line	7
2.6. Problem: Parking in Shared Area	7
2.7. Problem: Parked Cars Blocking Cycle Track	7
2.8. Problem: Abrupt Transition from Cycle Track	7
2.9. Problem: Dished Kerb and Tactiles Incorrectly Oriented	8
2.10. Problem: Vehicles Queuing onto Rail Line	8
2.11. Problem: Inadequate Crossing Provision	8
2.12. Problem: Kinked Alignment of Existing Footpath	8
2.13. Problem: Missing Pedestrian Provision Across the R338	8
3. Audit Team Statement	10
Road Safety Audit Team	10
4. Designers Response	11
Appendices	12
Appendix A. Road Safety Audit Feedback Form	13
Tables	
Table 1-1 – Design Team Drawings List	5
Figures	
Figure 2-1 – Demand Across Junction	9

1. Introduction

1.1. Background

This report describes the findings of a Stage 1 Road Safety Audit associated with the Galway Cycle Network Phase 1, Work Package 2 Doughiska Road South.

The Audit has been completed by Atkins on behalf of Galway City Council.

1.2. Site Inspection

A drive through of the concerned locations was undertaken on 9th and 11th June 2020. Traffic conditions were normal with traffic on all roads and junctions throughout the scheme. Higher traffic was noted at the larger / primary junctions of the scheme.

Pedestrian and cyclist's activity was also noted with regular movement of both throughout the existing provision where the scheme is proposed.

Weather conditions were dry and sunny.

1.3. The Team

The Road Safety Audit Team members were as follows:

- **Team Leader:** Darragh Malone BEng (Hons) CEng MIEI
- **Team Member:** Colin Prendeville BEng (Hons) CEng MIEI CIHT
- **Team Observer:** Richard Malcolmson MEng MIEI

1.4. The Design

The following drawings were examined as part of the Stage 1 Road Safety Audit process:

Table 1-1 – Design Team Drawings List

Drawing Number	Drawing Title	Revision
5193732/HTR/DR/0166	PRELIM DESIGN SHEET 1 OF 3	-
5193732/HTR/DR/0167	PRELIM DESIGN SHEET 2 OF 3	-
5193732/HTR/DR/0168	PRELIM DESIGN SHEET 3 OF 3	-

1.5. Compliance

This Road Safety Audit has been carried out in accordance with the procedures and scope set out in TII publication number **GE-STY-01024 - Road Safety Audit**.

As part of the road safety audit process, the Audit Team have examined only those issues within the design which relate directly to road safety.

The road safety audit process is not a design check, therefore verification or compliance with design standards or any other criteria have not formed part of the audit process.

All problems described in this report are considered by the Audit Team to require action in order to improve the safety of the scheme and minimise the risk of collision occurrence.

2. Road Safety Issues Identified

2.1. Problem: Pedestrian / Cyclist and Vehicle / Cyclist Conflicts

Location: Shared Path Areas and Pedestrian Crossings – Scheme Wide

The cycle track is proposed to continue through shared areas and the pedestrian crossing points throughout the scheme. As road users wait for a green signal and an opportunity to cross the road, cyclists are likely to continue through these areas where they may conflict with those standing in the shared area.

The nature of the layouts at these locations with multiple ramps, potential presence of obstructions in the shared areas and crossing locations may naturally result in cyclists opting to deviate from the cycle track and onto the road where they may conflict with through traffic.

Recommendation

The Designer should review the layout at the crossing points and shared areas and develop a layout where the cycle track is an attractive route and also minimise or omit the risk of conflict with standing pedestrians or those waiting to cross the road at signalised crossings.

2.2. Problem: Inadequate Tie-in and Transitions

Location: Tie-in to existing – Scheme Wide

Details of tie-ins and transition for pedestrians and cyclists has not been outlined in the design drawings. Conflict may arise where provision is not made and cyclists are left to continue on footpaths where they may conflict with pedestrians or alternatively where they suddenly deviate to the carriageway where they may conflict with vehicular traffic.

Recommendation

The Designer should ensure that adequate tie-ins and transitions are provided scheme wide to adequately cater for all road users.

2.3. Problem: Inadequate Provision for Vulnerable Road Users

Location: Various Junctions - Scheme Wide

Provision across various accesses throughout the scheme would appear to inadequately cater for vulnerable road users. A number of these accesses would appear to be busy catering for moderate to high traffic volumes and may lead to conflict with some footpath users failing to appreciate they are crossing where frequent traffic is likely to be present. The design intention appears to be giving priority to pedestrians, but that the layout provided at some locations does not clearly indicate this. In some locations this design intention would appear to be inappropriate when the volume and type of turning traffic is considered.

Recommendation

The Designer should ensure that the proposed junction treatments are adequate for the likely traffic volumes and will adequately cater for the frequency of traffic expected to use them. The design should consider all road users including partially sighted road users who may rely on tactile paving when attempting to cross junctions and accesses.

2.4. Problem: Conflict Through Shared Area

Location: Southbound chainage 0+110

The proposed shared use area appears narrow on the eastern side of the junction. As cyclists enter this area there is a risk of them conflicting with walking pedestrians and those wishing to cross at the signal.

Recommendation

The Designer should amend the layout to increase the shared area. The provision of cyclists through the pedestrian crossing should be reviewed in conjunction with 2.1.

2.5. Problem: Pedestrian Crossing Away from Desire Line

Location: Southbound chainage 0+110

The proposed pedestrian crossing on the northern side of the junction appears remote of the desire line. This may result in some pedestrians ignoring the crossing and cutting through the junction and may conflict with through traffic.

Recommendation

The location of the crossing should be reviewed in conjunction with other problems at this location. This may require a relocation of the existing GAA access gate on the west of the junction.

2.6. Problem: Parking in Shared Area

Location: Junction and Shared Area chainage 0+130

The proposed junction is elongated and may become an attractive option for drivers to park to access the nearby commercial properties. Manoeuvring vehicles may conflict with those on the shared path or force users onto the carriageway thereby leading to conflict with through traffic.

Recommendation

Measures to prevent parking in this area should be provided as part of the design. Alternatively the layout should be revised in conjunction with problems mentioned previously.

2.7. Problem: Parked Cars Blocking Cycle Track

Location: Along Doughiska South chainage circa 0+160 to circa 0+400

The presence of parked vehicles along Doughiska South was evident during the site visit. Where this practice continues, cyclists will be forced to navigate to the carriageway where they may conflict with traffic.

Recommendation

The Designer should consider measures to prevent / discourage vehicles from parking on the cycle track.

2.8. Problem: Abrupt Transition from Cycle Track

Location: Southbound chainage 0+500

The proposed termination of the cycle track appears abrupt and may result in cyclists unexpectedly merging to the traffic lane. This may lead to conflict with vehicles.

Recommendation

The design should allow for a smooth transition that adequately allows opposing road users to cater for each other. The transition should be cognisant of the nearby pedestrian crossing.

2.9. Problem: Dished Kerb and Tactiles Incorrectly Oriented

Location: Chainage 0+560

An existing dished kerb and tactiles which direct people towards the carriageway are proposed to be retained. This may lead to conflict with vehicles.

Recommendation

The design should be amended to orient the dishing and tactiles towards the area allocated for pedestrians rather than the carriageway.

2.10. Problem: Vehicles Queuing onto Rail Line

Location: Chainage 0+520

The proposed pedestrian crossing is located approximately 20m from the rail line. It is unclear if adequate distance has been provided to allow for queuing vehicles and this may lead to conflict the railway barriers and trains where traffic queues form while giving way to pedestrians.

Recommendation

The Designer should review the proposed location and ensure adequate space is provided to avoid the risk of vehicles obstructing the railway or the automatic level crossing infrastructure. This should allow for vehicle movements and likely crossing demand.

2.11. Problem: Inadequate Crossing Provision

Location: Chainage 0+520

The proposed pedestrian is a zebra crossing. This crossing is located on a relatively straight road where higher speeds may exist. The provision of the zebra does not afford the safest method of crossing such as children, elderly and partially sighted and may lead to conflict where confusion over priority arises.

Recommendation

The provision of the Pelican crossing instead of zebra is recommended to provide a safer crossing point for those wishing to cross the road.

2.12. Problem: Kinked Alignment of Existing Footpath

Location: Chainage 0+600

The existing footpath is kinked / stepped across the junction to Radharc An Chaisleain. Where this alignment is proposed to be retained it may lead to sudden vehicle movements and conflict such as shunt and swipe collisions.

Recommendation

The Designer should ensure a smooth alignment through the junction.

2.13. Problem: Missing Pedestrian Provision Across the R338

Location: Scheme Limits

There would appear to be considerable demand for pedestrians and possibly cyclists to cross the R338 at the scheme limits. There is a path worn on the existing verge and pedestrians were observed

attempting to cross during the site visit. The nature of the scheme may naturally increase the current demand increasing the risk of conflict with moderate to high speed traffic on the R338.



Figure 2-1 – Demand Across Junction

Recommendation

Provision for vulnerable road users to cross the R338 should be considered in context of the whole scheme.

3. Audit Team Statement

We certify that we have examined the drawings listed in Chapter 1 of this Report.

The Road Safety Audit has been carried out with the sole purpose of identifying any features of the design which could be removed or modified in order to improve the road safety aspects of the scheme.

The problems identified herein have been noted in the Report together with their associated recommendations for road safety improvements. We (the Audit Team) propose that these recommendations should be studied with a view to implementation.

No member of the Audit Team has been otherwise involved with the design of the measures audited.

Road Safety Audit Team

Darragh Malone

Audit Team Leader
Road Safety Engineering Team
ATKINS

Signed:



Date: 22 June 2020

Colin Prendeville

Audit Team Member
Road Safety Engineering Team
ATKINS

Signed:



Date: 22 June 2020

Richard Malcolmson

Audit Team Observer
Road Safety Engineering Team
ATKINS

Signed:



Date: 22 June 2020

4. Designers Response

The Designer should prepare an Audit Response for each of the recommendations using the Road Safety Audit Feedback Form attached in Appendix A.

When completed, this form should be signed by the Designer and returned to the Audit Team.

Please return the completed Road Safety Audit Feedback Form attached in Appendix A to:

Road Safety Engineering Team,
Atkins,
Atkins House,
150 Airside Business Park,
Swords,
Co Dublin,
Ireland.

Tel: 00 353 (0)1 810 8000

Email: darragh.malone@atkinsglobal.com

The Audit Team will consider the Designers response and reply indicating acceptance or otherwise of the Designers response to each recommendation.

Where the Designer and the Audit Team cannot agree on an appropriate means of addressing an underlying safety issue identified as part of the audit process, an Exception Report must be prepared by the Designer on each disputed item in the audit report.

Appendices



Appendix A. Road Safety Audit Feedback Form

Scheme: Galway Cycle Network Phase 1 - WP2 Doughishka Road South
Audit Stage: Stage 1 Road Safety Audit
Date Audit Completed: 22 June 2020

Paragraph No. in Safety Audit Report	To be completed by the Designer			To be completed by the Audit Team
	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative Measures accepted by Auditors (yes/no)
2.1	Yes	Yes	Segregation to be provided at junctions and crossings along the route.	
2.2	Yes	Yes	Tie-ins and transitions to be confirmed at detailed design stage, in consultation with adjacent proposed schemes.	
2.3	Yes	Yes	Design in line with NCM 4.9.2 "Minor Side Road with Pedestrian Priority"; however for consistency at all junctions tactile paving will be provided. The footway will remain continuous across the table top ramp.	
2.4	Yes	Yes	Shared Area removed. Segregation to be provided at junctions and crossings along the route. Min. widths of 1.75m (cycle) and 1.8m (footway) to be provided.	
2.5	Yes	Yes	Crossing moved closer to junction.	
2.6	Yes	Yes	Shared Area removed, northern pedestrian crossing moved closer to junction, and cyclist segregation provided. Parking issue addressed with this revised arrangement.	
2.7	Yes	Yes	It is considered that once the formalised cycle arrangement is constructed the requirement to not park here will be clearer than as existing. Issue to be monitored once constructed, and legal enforcement undertaken; or consideration of installation of additional delineator posts if parking persists (as proposed near the shops).	
2.8	Yes	Yes	Transition elongated to facilitate merging cyclists, and signage and road markings to be installed to advise drivers they are entering a Shared Street.	
2.9	Yes	Yes	-	
2.10	Yes	Yes	Zebra crossing moved further north away from level crossing to facilitate queuing.	

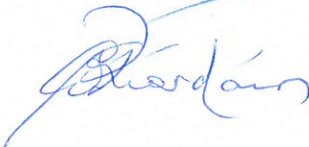
Paragraph No. in Safety Audit Report	To be completed by the Designer			To be completed by the Audit Team
	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative Measures accepted by Auditors (yes/no)
			Wait time for vehicles expected to be low considering nature of area (i.e. at the fringes of suburbs). The Zebra crossing has clear visibility on approach and as such any queues at it will be evident to northbound drivers, prior to them crossing the railway.	
2.11	No	No	2019's 85 th percentile speeds were noted as 52kph on this route. The proposals for the scheme will include measures to encourage lower speeds (i.e. raised tables, narrowed carriageways and junctions). The Zebra crossing will have very good visibility on approach, and beacons will be provided, and hence will be evident to approaching motorists. The provision of Zebra crossings is compatible with DMURS for "Link Roads" (which this route is). The provision of a pelican crossing may cause compatibility issues with traffic crossing the railway to the south, whereas the vehicle wait-time for a Zebra crossing will be lesser.	Yes. Design team have confirmed that the proposed crossing is suitable for required traffic speeds, volumes and user requirements and strikes the suitable balance with adjacent rail line and crossing.
2.12	Yes	Yes	-	
2.13	Yes	No	This is outside scheme extents, however this will be considered as part of future schemes by GCC / others.	Designer confirms the highlighted risk will be considered by the approving authority as part of another scheme.

 Signed by the Designer: 

Date: 21/05/2021

 Signed by the Audit Team Leader: 

Date: 28/05/2021

 Signed by the Employer: 

Date: 3/June/2021

Darragh Malone
WS Atkins Ireland Limited
Atkins House
150 Airside Business Park
Swords
Co. Dublin
K67 K5W4

Tel: +353 1 810 8000

© WS Atkins Ireland Limited except where stated otherwise