

Ryan Hanley

Limerick City Greenway
(UL to NTP)

Stage 1 Road Safety Audit

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2.0	AOR	TAG	TAG	17 th Dec. 2024	Final
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1 Introduction

1.1 General

This report results from a Stage 1 Road Safety Audit on the proposed Limerick City Greenway: University of Limerick to National Technology Park project carried out at the request of Mr. Brendan Larkin of Ryan Hanley.

The members of the Road Safety Audit Team are independent of the design team, and include:

Mr. Aly Gleeson

(BSc, MEng, MBA, RSACert, CEng, FIEI)
Road Safety Audit Team Leader

Mr. Alan O'Reilly

(BA, BAI, MSc, PGDIP(PM), RSACert, CEng, MIEI)
Road Safety Audit Team Member

The Road Safety Audit took place in November 2024 and comprised an examination of the documents provided by the designers (see Appendix A). In addition to examining the documents supplied the Road Safety Audit Team cycled the proposed route on the 7th of November 2024. Weather conditions during the site visit were dry and the road surface was dry. Traffic volumes during the site visit were low, pedestrian and cyclist volumes were moderate and traffic speeds were considered to be generally within the posted speed limit.

Where problems are relevant to specific locations these are shown on drawing extracts within the main body of the report and their locations are shown in Appendix B. Where problems are general to the proposals sample drawing extracts are within the main body of the report, where considered necessary.

This Stage 1 Road Safety Audit has been carried out in accordance with the requirements of GE-STY-01024 - Road Safety Audit (December 2017), contained on the Transport Infrastructure Ireland (TII) Publication's website.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety and considers the perspective of all road users. It has not been examined or verified for compliance with any other standards or criteria. The problems identified in this report are considered to require action in order to improve the safety of the scheme and minimise collision occurrence.

If any of the recommendations within this road safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observations are intended to be for information only. Written responses to Observations are not required.

2 Project Description

It is proposed to provide a 3.5m wide path from the River Groody adjacent to the River Shannon to Plassey Park Road. The proposed route can be seen in Figure 2-1.

An existing path with varying cross section and an unbound surface runs along the southern side of the River Shannon. The existing path includes narrow structures and swing gates along its route, with informal and formal accesses into adjoining developments. The existing route is unlit and runs beneath low hanging tree canopies as it transitions between a formal and informal path. The route will transition to the existing road network at two locations, the Kilmurry Student Village and McLoughlin Road, where it will continue up to Plassey Park Road, in both instances.

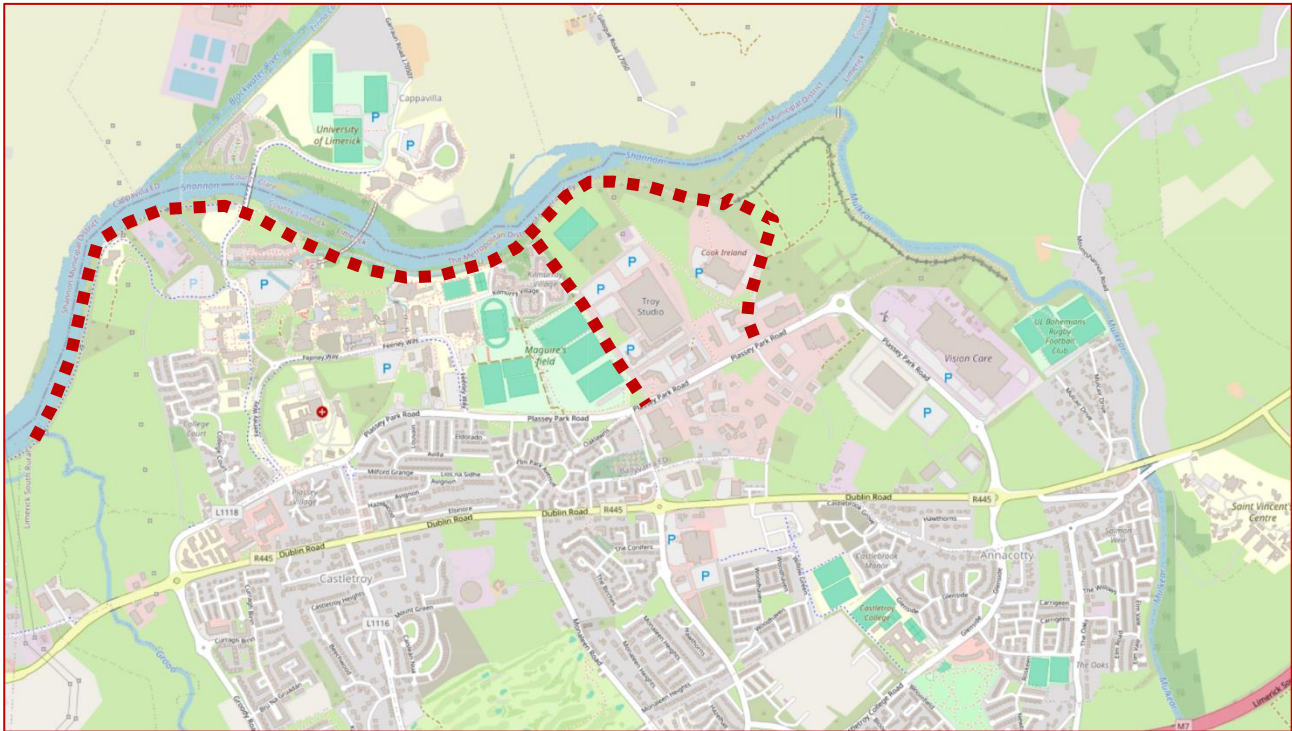


FIGURE 2-1: LOCATION PLAN

The proposed scheme is approximately 6.8km in length, and shall include the following key elements:

- A 3.5m bound pavement surface.
- Public lighting along its length.
- New pedestrian/cyclist structures.
- Seating areas along the route.
- Directional signage.
- Tie-in locations to the local road network and adjacent developments.

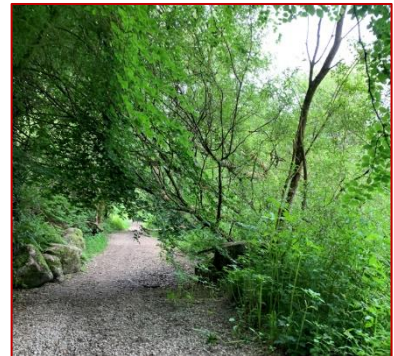
3 Main Report

3.1 Trees and Vegetation near the Greenway

Location: General Problem

Summary: Low hanging tree canopies overhanging the shared path may conflict with users, leading to personal injury collisions.

Existing planting and low hanging tree canopies may conflict with pedestrians and cyclists using the new shared path. This may increase the risk of personal injury collisions.



Recommendation

Ensure low hanging tree canopies and overgrown vegetation is cleared from the new greenway, with at least 2.5m of clearance provided above the shared path.

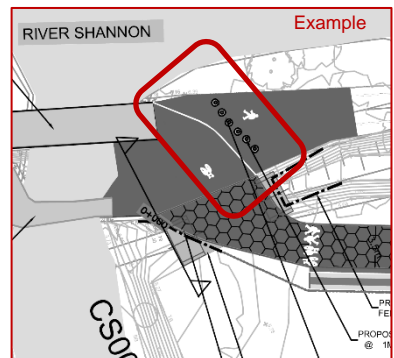
3.2 Shared Use Path Transition

Location: General Problem

Example: Drawing No: 2535-RHA-XX-DR-C-PD0001 (Rev 2.0)

Summary: Risk of visually impaired pedestrians entering the shared path without due care and attention.

The proposed shared use greenway shares an interface with a pedestrian-only path at CH0+000, and several other locations throughout the proposed greenway. There is a risk that visually impaired pedestrians may enter the shared path without due care and attention, increasing the risk of pedestrian/cyclist collisions.



Recommendation

Provide tactile paving to advise visually impaired pedestrians that they are entering a shared path.

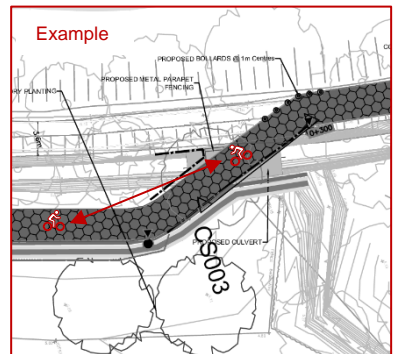
3.3 Inter-visibility

Location: General Problem

Example: Drawing No: 2535-RHA-XX-DR-C-PD0001 (Rev 2.0)

Summary: Risk of opposing cyclists being unable to see around abrupt changes in the horizontal alignment.

Changes in the greenway alignment may give rise to reduced inter-visibility between opposing cyclists, increasing the risk of head-on collisions where cyclists are unable to see an oncoming cyclist cycling around the bend. This could lead to personal injury collisions.



Recommendation

Ensure vegetation and/or bridge parapets do not obstruct inter-visibility at abrupt changes in the horizontal alignment. If necessary, provide additional widening at bends in the alignment to create greater separation between opposing cyclists/pedestrians, and improved visibility.

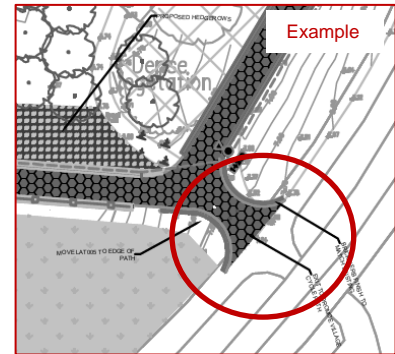
3.4 Transitions between Different User Facilities

Location: General Problem

Example: Drawing No: 2535-RHA-XX-DR-C-PD0011 (Rev 2.0)

Summary: Visually impaired pedestrians may not be aware that they are moving between different user facilities (e.g. pedestrian-only to shared paths).

The shared path transitions to a pedestrian-only, or segregated, path at several locations along the route. There is a risk that visually impaired pedestrians may not be aware of the shared path when entering from these locations. This may increase the risk of pedestrian/cyclist collisions.



Recommendation

Ensure tactile paving and signage is provided to advise users of the transition from one facility to another.

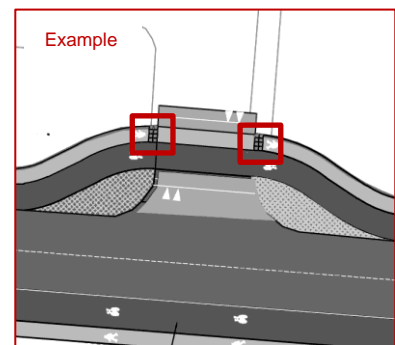
3.5 Tactile Paving Depth

Location: General Problem

Example: Drawing No: 2535-RHA-XX-DR-C-PD0040 (Rev 1.0)

Summary: Visually impaired pedestrians may step over tactile paving at in-line crossings.

The depth of tactile paving at in-line crossings may be insufficient, so may increase the risk of visually impaired pedestrians stepping over the tactile paving and entering the carriageway without due care and attention, resulting in vehicle/pedestrian collisions.



Recommendation

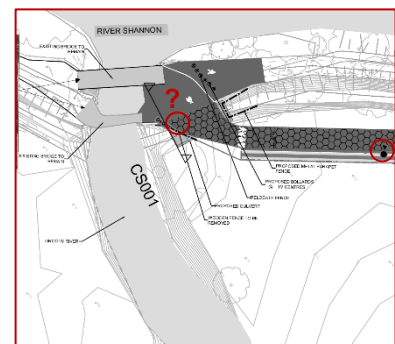
Ensure the depth of tactile paving at in-line crossings is at least 1.2m across the full width of the crossing.

3.6 Public Lighting

Location: Drawing No: 2535-RHA-XX-DR-C-PD0001 (Rev 2.0)

Summary: The absence of public lighting may create dark spots within the greenway, reducing visibility between greenway users.

Public lighting is not indicated at the junction between the proposed greenway, the pedestrian-only footpath, and the two existing bridges at the western extent of the scheme. The absence of lighting at the start/end of the greenway may create dark spots that results in reduced inter-visibility between users at a busy junction on the greenway, increasing the risk of pedestrian/cyclist collisions.



Recommendation

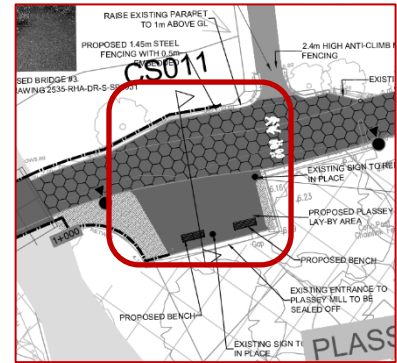
An additional lighting column should be provided near CH0+000.

3.7 Informal Cycle Parking

Location: Drawing No: 2535-RHA-XX-DR-C-PD0010 (Rev 2.0)

Summary: Informal cycle parking at lay-by areas may increase the risk of trips and falls.

Cyclists on the greenway may wish to stop at lay-bys to use the benches provided. The absence of cycle parking may lead to informal parking, where bicycles are left on the greenway, or beside the benches. This may increase the risk of trips and falls, leading to personal injury.



Recommendation

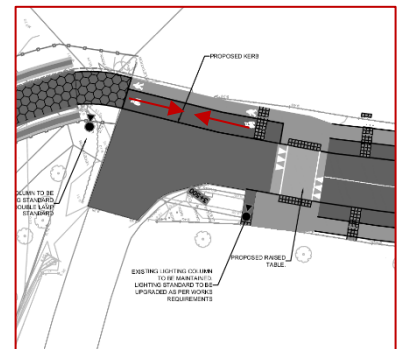
Cycle stands should be provided near lay-bys, and located strategically at areas where cyclists may wish to stop for short periods of time.

3.8 Transition between Different Surfaces

Location: Drawing No: 2535-RHA-XX-DR-C-PD0011 (Rev 2.0)

Summary: Risk of head-on collisions where opposing cyclists are directed to use the same cycle path.

The shared use section of the greenway transitions to a two-way segregated pedestrian/cycleway at CH3+500. It is not clear where southbound cyclists will go when they exit the shared use greenway, as the facility ties-in to the northbound segregated facility. This may increase the risk of cyclist confusion and head-on collisions where north and southbound cyclists attempt to share the same section of segregated cycleway.



Recommendation

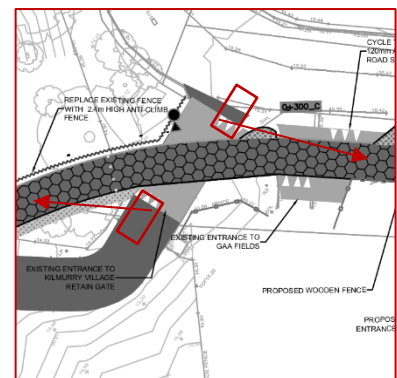
This section of segregated cycleway/footway should be replaced with a shared use facility up to the proposed raised table at CH3+515. Wayfinding signage should be provided at the raised table to direct northbound cyclists onto the eastern side of the carriageway before entering the greenway.

3.9 Inter-visibility at Skewed Crossing

Location: Drawing No: 2535-RHA-XX-DR-C-PD0039 (Rev 1.0)

Summary: Drivers may be unable to clearly see approaching cyclists, who may be behind their field of view.

The proposed greenway crosses the existing access to Kilmurry Village at a skewed angle. This may limit a driver's visibility to an approaching cyclist from the left, who may be outside a driver's field of view, increasing the risk of vehicle/cyclist collisions.



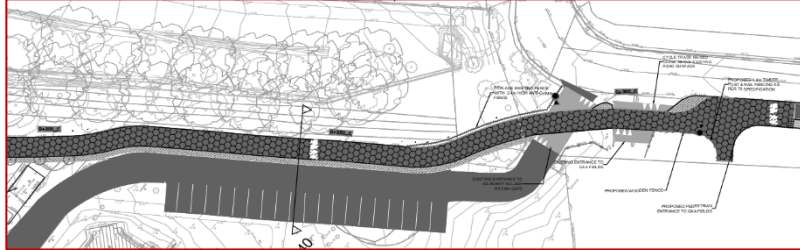
Recommendation

The proposed greenway should cross the access at 90-degrees, supporting improved inter-visibility.

3.10 Pedestrian Desire Lines

Location: Drawing No: 2535-RHA-XX-DR-C-PD0039 (Rev 1.0)

Summary: The absence of formal crossing points between existing footways and the new greenway may increase the risk of trips and falls or prevent mobility impaired users from accessing the new facility.



It is unclear if existing footways within Kilmurray Village and the GAA lands will be formally connected to the proposed greenway. It is likely that the new facility will attract a high number of pedestrians and cyclists from these areas, particularly given the high student population in this area. The absence of formal crossings or connectivity may increase the risk of trips and falls, or prevent mobility impaired users from accessing the new greenway.

Recommendation

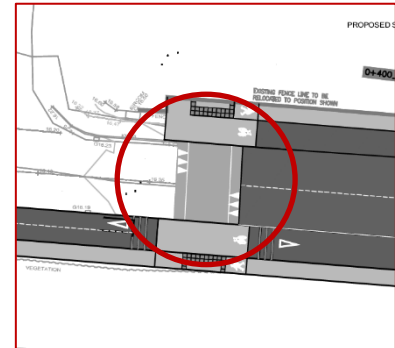
Provide formal connection points for pedestrians and cyclists.

3.11 Crossing Type

Location: Drawing No: 2535-RHA-XX-DR-C-PD0040 (Rev 1.0)

Summary: Crossing type may be insufficient for the type and volume of pedestrians/cyclists using the crossing.

The type of crossing proposed at CH0+375 is not indicated. There may be a risk of vehicle/cyclist collisions should the type of crossing used at this location be incapable of accommodating the volume of pedestrians and cyclists using the crossing.



Recommendation

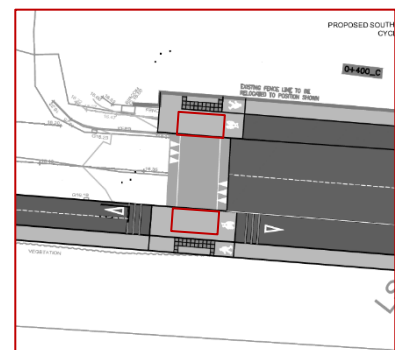
Undertake an assessment to confirm that the crossing type is sufficient for the volume and composition of users at this crossing. If necessary, change the crossing type to ensure the crossing sufficiently caters for the number and type of users crossing at this location.

3.12 Tactile Paving

Location: Drawing No: 2535-RHA-XX-DR-C-PD0040 (Rev 1.0)

Summary: Pedestrians may continue into carriageway without due care and attention, leading to vehicle/pedestrian collisions.

The proposed arrangement may lead to visually impaired pedestrians crossing the short section of shared surface and continuing into the carriageway without due care and attention. Drivers, believing pedestrians would stop at the kerb edge before crossing, may be unprepared for a pedestrian to continue into the carriageway, increasing the risk of vehicle/pedestrian collisions.

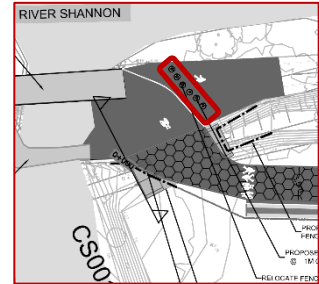


Recommendation

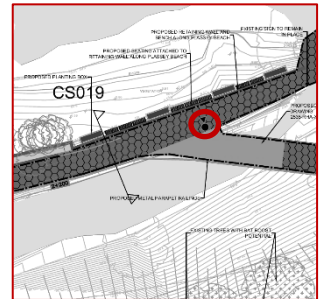
The cycle facility should transition to a shared footway, with a conventional tactile paving arrangement adopted at the raised table crossing.

4 Observations

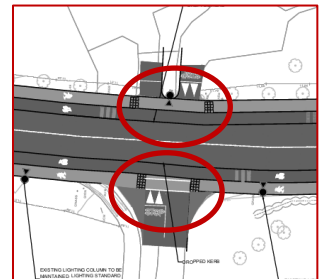
4.1 Bollards at 1m centres are indicated at the pedestrian path near CH0+000, and throughout the greenway. It is unclear if this will provide sufficient width for mobility impaired users (e.g. wheelchair users) to move between the pedestrian-only path and the shared used greenway. See NTA Guidance on 'Access Control of Active Travel Facilities' or seek guidance from the National Disability Authority.



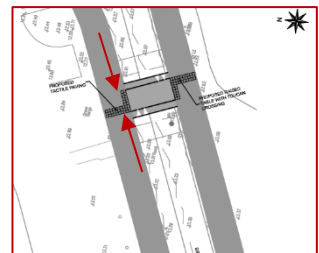
4.2 A public lighting column is indicated at CH2+225 and appears to be in the middle of the greenway, so may obstruct users. This is assumed to be a CAD error but should be relocated.



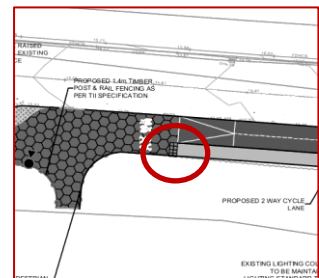
4.3 The detail used at locations where the pedestrian footway and segregated cycle track cross accesses is unclear. This should be developed further at the detail design stage, with reference to the Cycle Design Manual.



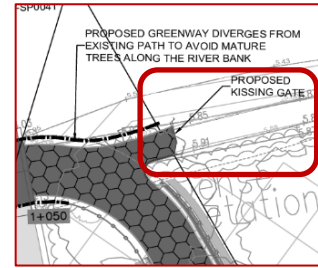
4.4 Proposed Toucan crossing appears to be 3.6m wide. This may be insufficient to accommodate the volume of cyclists using the crossing. The width of the Toucan crossing should be increased to at least 4.0m.



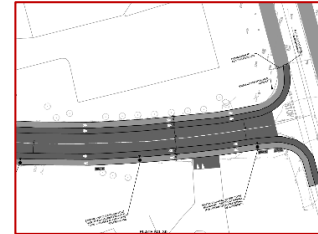
4.5 The tactile paving specification at the pedestrian-only footway transition to the shared used footway is incorrect. Corduroy tactile paving, with sufficient depth, should be used.



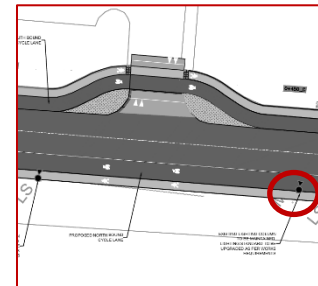
4.6 A kissing gate is proposed near CH1+050. This may restrict mobility impaired pedestrians, who may be unable to continue their journey. The Kissing Gate should be removed, and replaced with an access control that is accessible. See NTA Guidance on 'Access Control of Active Travel Facilities'.



4.7 Public lighting columns have been indicated within the pedestrian footway near CH3+750. This is assumed to be a CAD error, but these should be relocated.



4.8 Public lighting column indicated straddling the footpath and cycle track. This is assumed to be a CAD error, but should be relocated.



4.9 It is not clear if bollards used within the greenway will include reflective bands. The absence of reflective bands may increase the risk of the bollards being struck by cyclists during the hours of darkness. Ensure reflective bands are provided on bollards within the scheme.

5 Road Safety Audit Team Statement

We certify that we have examined the drawings referred to in this report. The examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions, which we would recommend should be studied for implementation.

No one on the Road Safety Audit Team has been involved with the design of the scheme.

ROAD SAFETY AUDIT TEAM LEADER

Aly Gleeson

Signed:



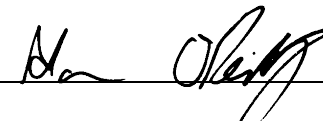
Dated:

17th December 2024

ROAD SAFETY AUDIT TEAM MEMBER

Alan O'Reilly

Signed:



Dated:

17th December 2024

Road Safety Audit Feedback Form

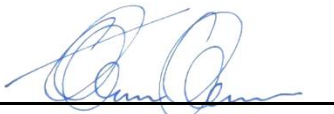
Scheme: Limerick City Greenway: University of Limerick to National Technology Park

Route No.: River Shannon Track, Mcloughlin Road, Kilmurry Student Village Access Road

Audit Stage: Stage 1 Road Safety Audit **Date Audit Completed:** 18th Nov 2024

To Be Completed by Designer				To Be Completed by Audit Team Leader
Paragraph No. in Safety Audit Report	Problem Accepted (Yes/No)	Recommended Measure(s) Accepted (Yes/No)	Describe Alternative Measure(s). Give reasons for not accepting recommended measure	Alternative Measures or Reasons Accepted by Auditors (Yes/No)
3.1	Yes	Yes		
3.2	Yes	Yes		
3.3	Yes	Yes		
3.4	Yes	Yes		
3.5	Yes	Yes		
3.6	Yes	Yes		
3.7	Yes	Yes		
3.8	Yes	Yes		
3.9	Yes	No	No available space to make this junction perpendicular, but this gate is usually closed.	Yes
3.10	Yes	Yes		
3.11	Yes	Yes		
3.12	Yes	Yes		

Signed:  Designer **Date** 18th December 2024

Signed:  Audit Team Leader **Date** 17th December 2024

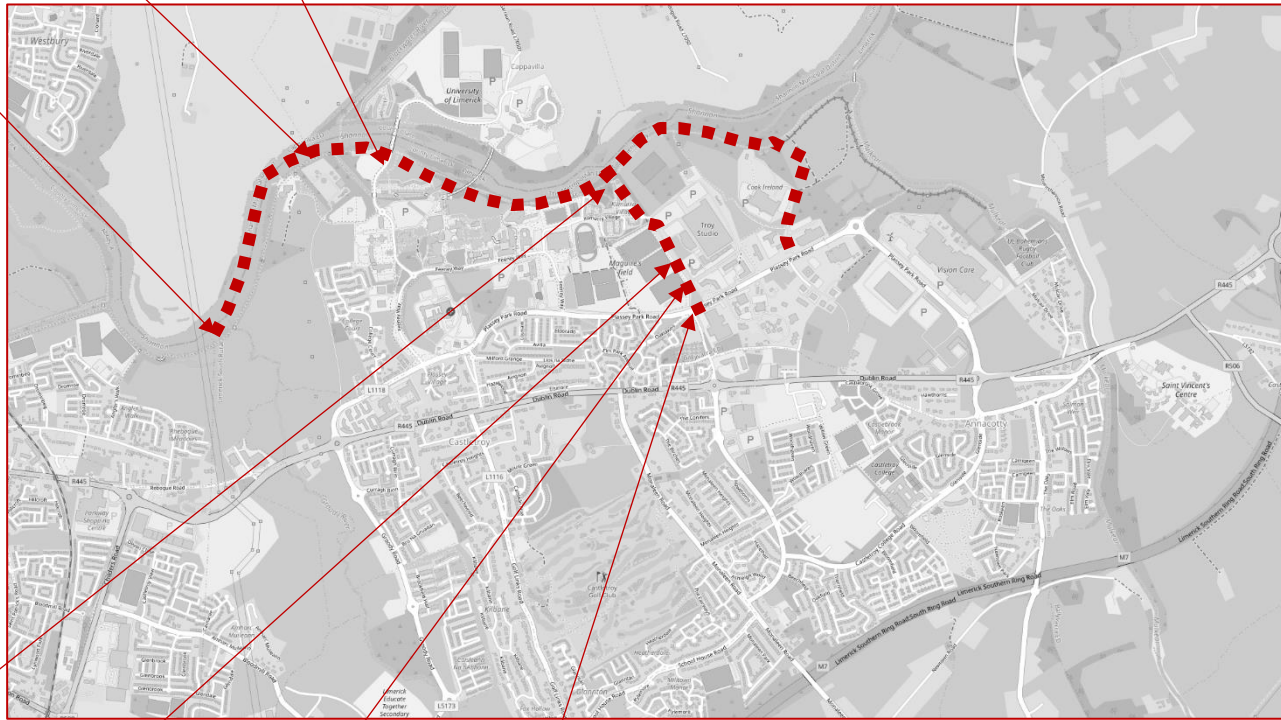
Signed: _____ Employer **Date** _____

Appendix A – Documents Submitted to the Road Safety Audit Team

DOCUMENT/DRAWING TITLE	DOCUMENT/DRAWING NO.	REVISION
2535-RHA-XX-DR-C-PD0001	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0002	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0003	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0004	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0005	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0006	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0007	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0008	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0009	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0010	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0011	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0012	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0013	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0014	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0015	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0016	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0017	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0018	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0019	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0020	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0021	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0022	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0023	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0024	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0025	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0026	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0027	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0028	Planning Drawings	2.0
2535-RHA-XX-DR-C-PD0038	Planning Drawings	1.0
2535-RHA-XX-DR-C-PD0039	Planning Drawings	1.0
2535-RHA-XX-DR-C-PD0040	Planning Drawings	1.0
2535-RHA-XX-DR-C-PD0041	Planning Drawings	1.0

Appendix B – Problem Locations

Problem 3.6 Problem 3.7 Problem 3.8



General Problem 3.1
General Problem 3.2
General Problem 3.3
General Problem 3.4
General Problem 3.5

Problem 3.9 Problem 3.10 Problem 3.11 Problem 3.12