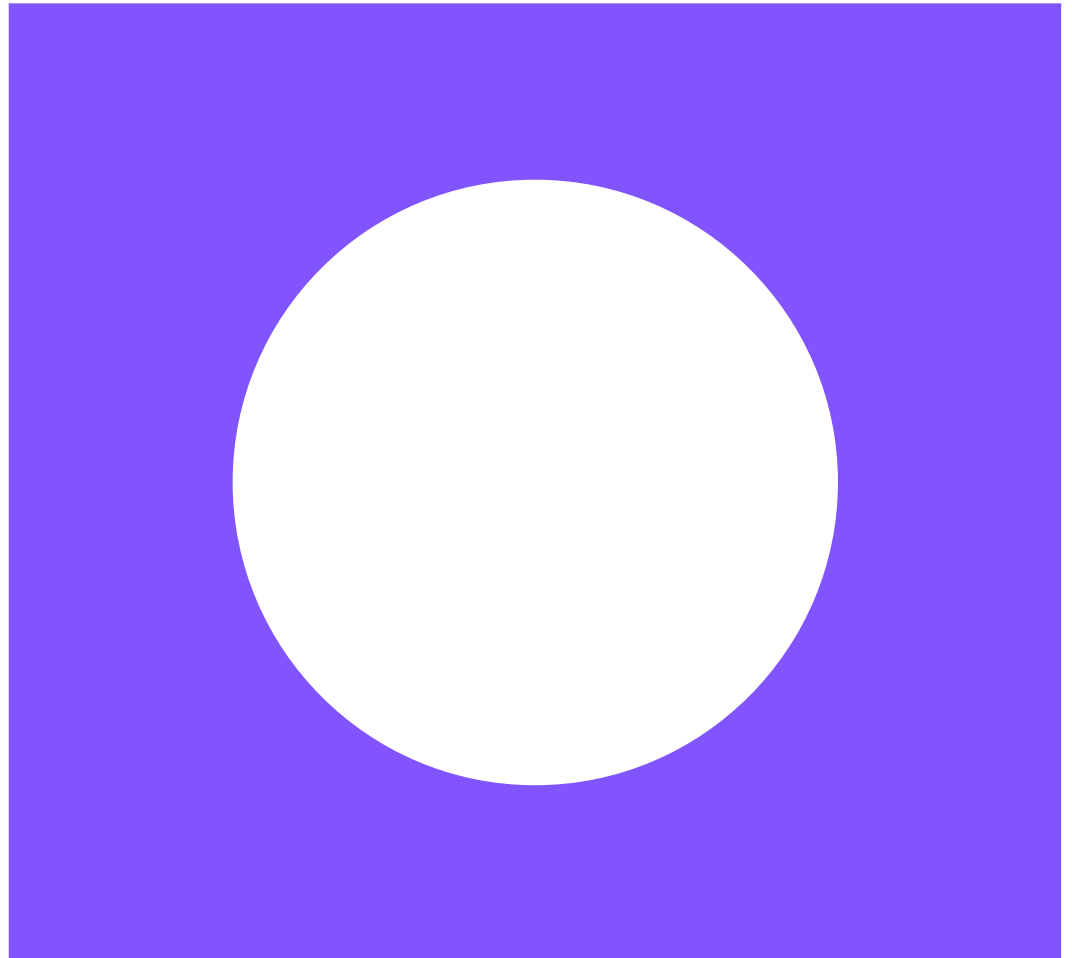




R610 St. Patricks Junction Upgrade Scheme

Stage 1 Road Safety Audit

July 2026

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R610 St. Patricks Junction Upgrade Scheme

Stage 1 Road Safety Audit

July 2026

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Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	14/07/26	R Collins	J O'Riordan	T J Blaney	First Issue
					
B	18/08/26	R Collins	J O'Riordan	T J Blaney	Address Client's comments
					

Document reference: 100287864-MMD-REP-RSA-2026-030 | B

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1 Introduction

This report describes a Stage 1 Road Safety Audit carried out on the proposed R610 St. Patricks Junction Improvement scheme. The section in question is within Rochestown and extends along Rochestown Road from the eastern side of its junction with Rochestown Rise to the eastern side of its junction with Riverside. An element of the scheme also extends south along Clarkes Hill to a point immediately north of its junction with Mount Ovel.

The Road Safety Audit was carried out by Mott MacDonald Ireland at the request of their client, the Project Sponsor, Cork City Council.

The Road Safety Audit took place at the Cork and Manchester offices of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A**.

The Road Safety Audit Team consisted of:

Rachael Collins	MSc, BA (Hons), MCIHT TII Approved Road Safety Auditor (reference: RC842524) (Certificate of Competency in Road Safety Audit, July 2016) Audit Team Leader, Mott MacDonald
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John O'Riordan	BEng (Hons), CEng, MIEI TII Approved Road Safety Auditor (reference: JO3372496) Audit Team Member, Mott MacDonald
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The Road Safety Audit Team undertook a visit to the site on Wednesday 8th July 2026 commencing at 11:15 hrs. During this visit the weather was fine with bright sunshine. The road surface was dry. Traffic flows were moderate and free flowing. Construction works were underway for the N28 upgrade scheme, although they did not affect the operation of the scheme. The N28 off-slip was operating as a single lane when previously it was a two lane entry onto the roundabout. A single pedestrian was observed walking to the bus stop east of Clarkes Hill. Two pedal cyclists were observed, with one riding in each direction.

This Road Safety Audit was carried out in accordance with the requirements of Transport Infrastructure Ireland's (TII) publication GE-STY-01024 May 2025 (Road Safety Audit).

The Road Safety Audit 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.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the auditors accept no responsibility for the design or construction of the scheme.

All the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and, as such, the design engineer will need to consider carefully how to respond to each of the issues. The Audit Response Report should be completed by the Design Team and kept on file for future reference.

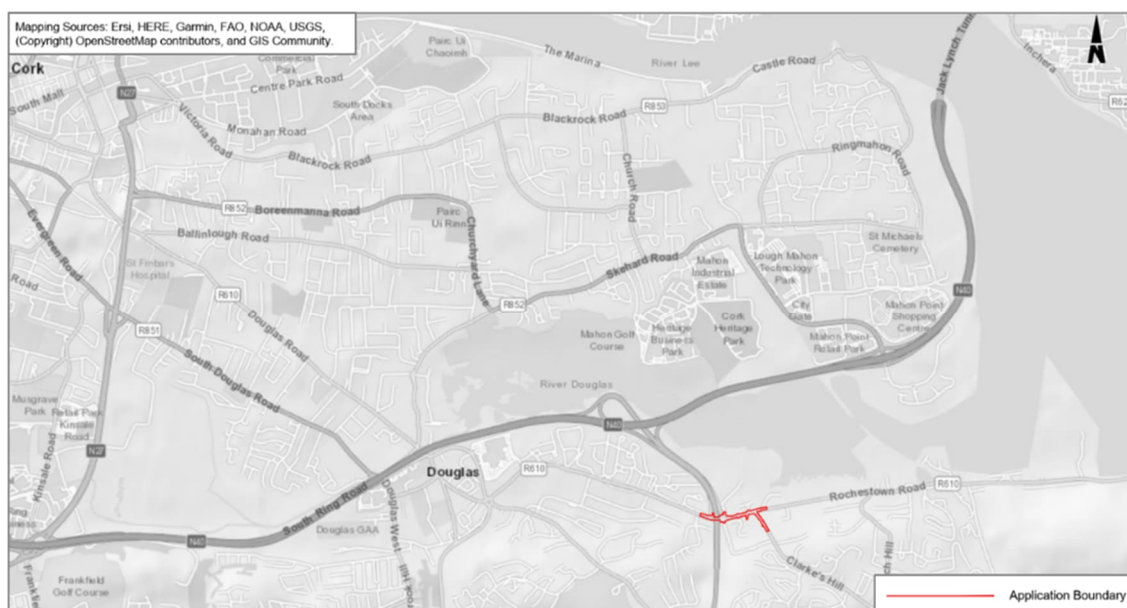
The Road Safety Audit Team is not aware of any previous Road Safety Audits having been undertaken on the scheme.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.

1.1 Scheme Overview

Mott MacDonald Ireland has been appointed by Cork City Council to prepare and lodge a Part 8 planning application for the construction of new active travel facilities along Rochestown Road in the suburbs of Cork City, approximately 5km south-east of Cork City Centre. The proposed scheme under review relates to a 0.40km section along the Rochestown Road, beginning at Rochestown Rise and ending at Riverside. (see **Figure 1.1**).

Figure 1.1: Location of Proposed Development



Source: Mott MacDonald Ireland Drawing 229101186-MMD-0000-XX-DR-C-0202

The proposed works are intended to enhance active travel provision, improve pedestrian and cyclist safety, and provide greater connectivity along this corridor. The scheme comprises the following principal elements:

1. Provision of an upgraded road layout along approximately 0.40km of Rochestown Road (R610) and 0.15km of Clarke's Hill, comprising a 6.0m wide carriageway together with the delivery of safe, high-quality, fully segregated cycling and pedestrian facilities along the length of the route.
 - a. Cycle tracks will be 2.4m wide (one way) / 3.40m wide (two-way) with 0.3m buffer; and
 - b. Footpath enhancement and widening to 2m width;

2. New fully signalised junction at Clarkes Hill and St. Patrick's roundabout on Rochestown Road;
3. Uncontrolled raised table crossings at 4no. junctions along the route;
4. Alterations to existing bus stops/laybys along the route;
5. Setback reduction of private property boundaries to facilitate provision of the cycle facilities where required; and
6. All associated works to facilitate the development e.g. upgrading and extension of storm drainage network and public lighting, provision of road signage, road markings, bollards, tactile paving, kerbing, traffic signalling and landscaping as required.

2 Items Raised at this Stage 1 Road Safety Audit

This section describes road safety related issues identified by the Road Safety Audit Team during this Stage 1 Road Safety Audit.

2.1 Problem 1.01

Location: Rochestown Road - scheme wide.

Summary: Kerb alignments are being modified, and inadequate swept paths could result in kerbs being struck or turning related collisions.

Kerb alignments are being modified significantly throughout the scheme to accommodate the new cycle tracks. No swept path analysis has been provided to the Road Safety Audit Team to confirm all turning movements can be undertaken unhindered. Should swept paths not be adequate to allow all turning movements it may result in turning related collisions, alternatively vehicles may strike or mount the kerb leading to loss of control incidents.

Recommendation

Undertake swept path analysis to confirm all movements can be undertaken unhindered; if necessary, amend the kerb lines.

2.2 Problem 1.02

Location: Rochestown Road - scheme wide.

Summary: Lack of suitable parking and path for operatives may result in overtaking related collisions or pedestrian trips and falls.

The scheme involves the signalisation of two junctions. Should a maintenance operative be required to visit the traffic signals, it is not clear where they would be expected to park. Should there not be suitable parking, it could result in inappropriate parking which may lead to overtaking related collisions. Additionally, if there is not a suitable path for operatives to walk between the parking and the traffic signals it could put them at greater risk of being struck by motor vehicles.

Recommendation

Provide maintenance operatives with appropriate parking and a suitable path to the traffic signal equipment.

2.3 Problem 1.03

Location: Rochestown Road - scheme wide.

Summary: Street furniture may reduce footway widths leading to pedestrians colliding with the furniture or they will pass within the carriageway at risk of collisions with motor vehicles.

Footways within Typical Cross Section A-A are shown to be 1.8m in width, and whilst pedestrian activity was observed to be low, there was concern that should street furniture such as lighting columns, traffic signal equipment or signing be poorly positioned, the usable footway width would be reduced. Should street furniture be sited so that it reduces the footway width, it could result in pedestrians colliding with the street furniture or they may step into the carriageway in order to pass, leading to collisions with vehicles.

Recommendation

Locate street furniture appropriately to maintain 1.8m footways.

2.4 Problem 1.04

Location: Rochestown Road east of Rochestown Rise.

Summary: Lack of continuation for cyclists could lead to use of the footway increasing the risk of collisions with pedestrians.

A shared use active travel facility is proposed on the southern side of Rochestown Road with the scheme to start/end at the existing signalised crossing east of Rochestown Rise where it is noted to tie in-to the existing. However, there are no existing cycle facilities west of this location and it is not clear how cyclists will continue. Should cyclists continue on the footway or use the pedestrian crossing they will be at greater risk of colliding with pedestrians.

Recommendation

Provide a suitable tie-in and continuation for cyclists; this may require the continuation of the shared use footway or a dropped kerb to allow cyclists to return to the carriageway.

2.5 Problem 1.05

Location: Rochestown Road shared use active travel facility.

Summary: Cycle and pedestrian symbols all in one direction could mislead users into believing it is one-way.

Pedestrian and cycle symbols are shown within the shared use active travel facility however they are all orientated in the same direction. The Road Safety Audit Team is concerned that having all the symbols in one direction could mislead users into believing the active travel facility operates as one-way. Should users not be clear of the intended use they may cross Rochestown Road unnecessarily, increasing the risk of conflict with motor vehicles.

Figure 2.1: Pedestrian and cycle symbols in same direction



Source: Mott MacDonald / Cork City Council

Recommendation

Provide pedestrian and cycle symbols in both directions to indicate the active travel facility operates as two-way.

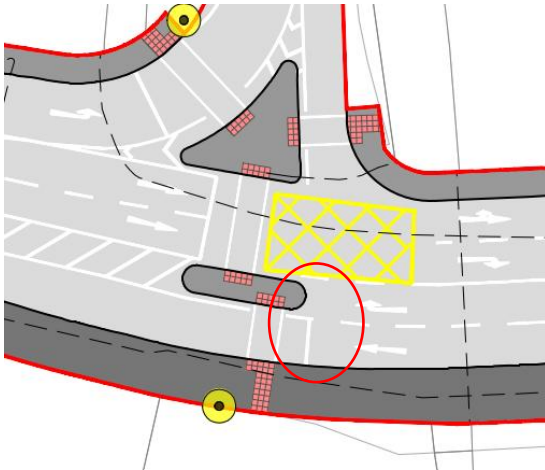
2.6 Problem 1.06

Location: Rochestown Road / N28 on-slip.

Summary: Right turning vehicles may believe they are uncontrolled and turn at the same time as eastbound traffic potentially leading to turning related collisions.

A stop line has been provided for westbound traffic on Rochestown Road, however right turning traffic is to pass in front of the traffic island. The provision of a controlled pedestrian crossing on the N28 on-slip indicates that the Rochestown Road right turn lane will be required to be signal controlled. However, the presence of the traffic island, potential positioning of traffic signals and lack of a stop line may mislead right turning motorists into believing they are not controlled. Vehicles turning right uncontrolled against eastbound traffic could result in vehicles turning across the path of ahead traffic increasing the risk of collisions. In addition, vehicles may fail to stop for the pedestrian crossing leading to an increased risk of collisions with crossing pedestrians.

Figure 2.2: Proposed junction layout



Source: Mott MacDonald / Cork City Council

Recommendation

Modify the signal-controlled crossing arrangement and associated traffic signal equipment and Stop lines so that the highway arrangement and signal control is clear to all users.

2.7 Problem 1.07

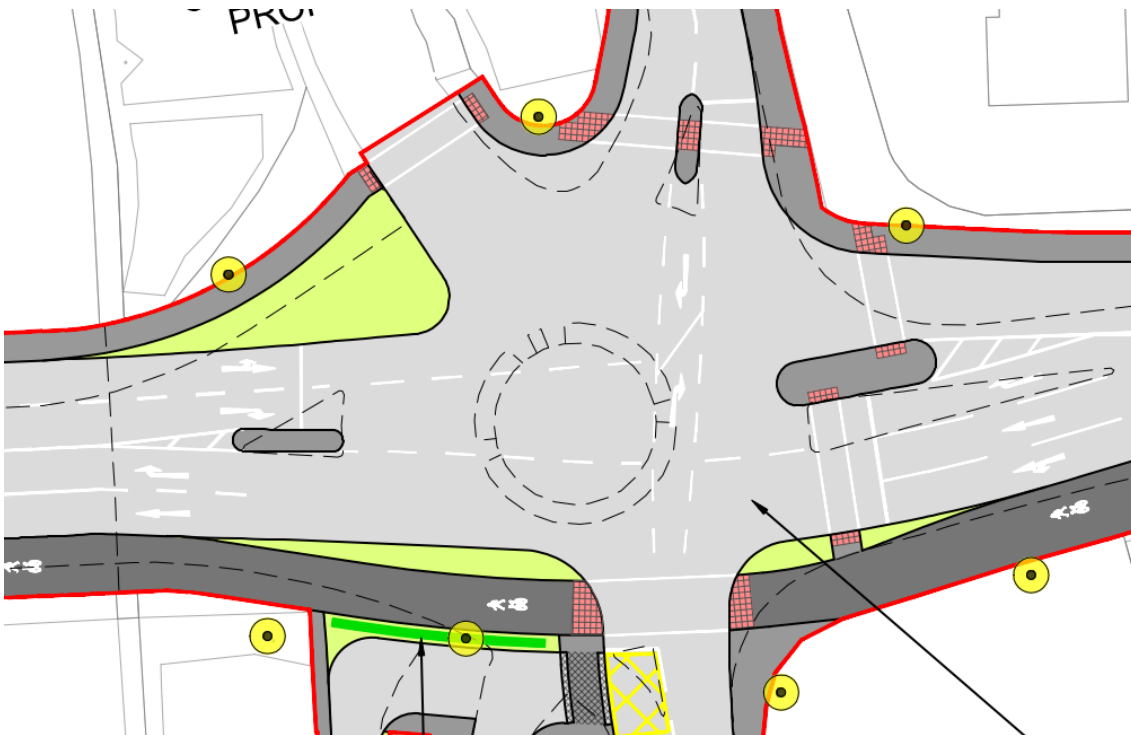
Location: Rochestown Road / N28 off-slip / Woodbrook / Mount Ovel.

Summary: A lack of clear markings for right turn manoeuvres increases the risk of turning related collisions at the junction.

A number of issues have been identified with the markings within the Rochestown Road, N28 off-slip, Woodbrook and Mount Ovel Junction which could lead to turning related collisions.

- Right turn lanes have been marked out for drivers turning from Woodbrook and Mount Ovel, however these are minor arms with low traffic flows. The markings also extend through the Rochestown Road westbound carriageway and therefore the junction layout may not be clear for other motorists using this junction.
- The right turn lane from Woodbrook guides right turning motorists towards the stop line for eastbound traffic on Rochestown Road.
- No right turn arrow(s) has been shown within the wide right turn lane for Rochestown Road traffic and with the other markings it may not be clear where traffic, particularly from the east, is to wait and turn.

Figure 2.3: Proposed markings within the junction.



Source: Mott MacDonald / Cork City Council

Recommendation

Modify the right turn lanes so that the highway layout is clearly understandable to road users.

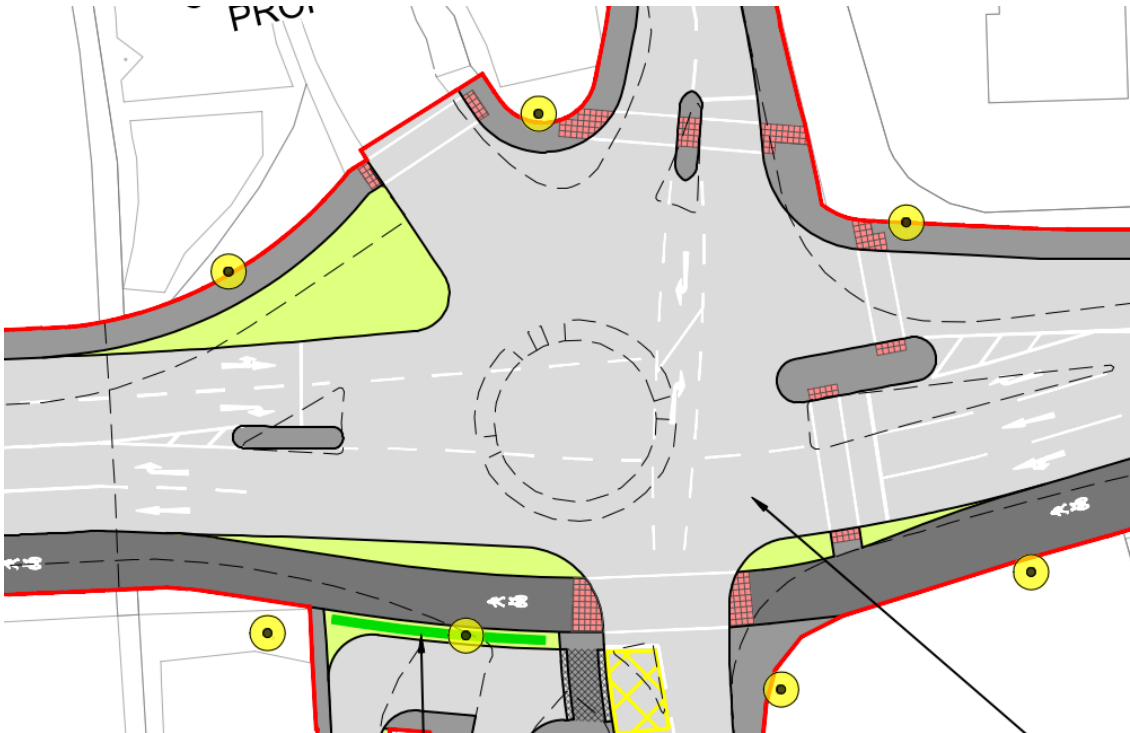
2.8 Problem 1.08

Location: Rochestown Road / Woodbrook / Mount Ovel junction.

Summary: Incorrect tactile paving may mis-lead sight impaired pedestrians increasing their vulnerability to being struck.

Controlled crossings are proposed over Westbrook, Rochestown Road and Mount Ovel. The tactile paving however is shown in multiple places without the stem which indicates to blind and sight impaired pedestrians that it is a controlled crossing. The lack of a stem may mislead users who may believe it to be an uncontrolled crossing, increasing their vulnerability to being struck by passing motorists.

Figure 2.4: Proposed pedestrian crossing layout.



Source: Mott MacDonald / Cork City Council

Recommendation

Provide the correct tactile paving in line with relevant guidelines to reflect they are controlled crossings.

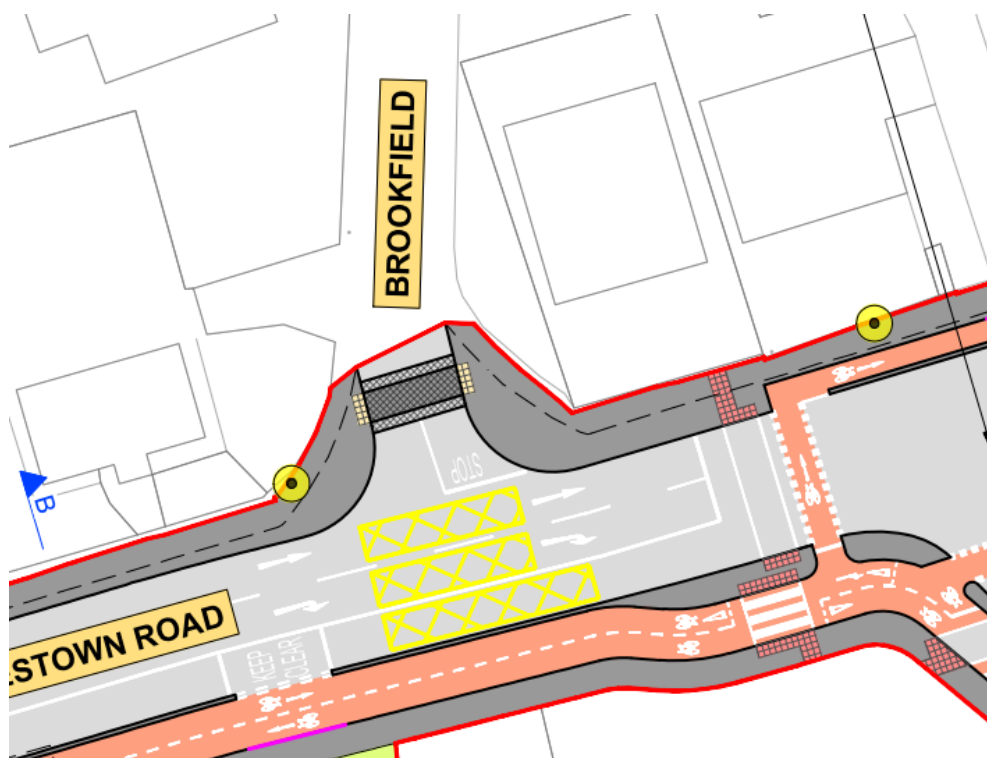
2.9 Problem 1.09

Location: Brookfield / Rochestown Road.

Summary: Lack of cycle provision for cyclists on the northern side of Rochestown Road to access the cycle track may lead to use of the pedestrian or unidirectional cycle crossing potentially resulting in conflict.

Should cyclists from Brookfield on the northern side of Rochestown Road wish to join the segregated cycle track on the southern side of Rochestown Road, they will be required to cross three lanes of traffic and be vulnerable to colliding with motorists. Alternatively, they may use the signalised pedestrian or unidirectional cycle crossing at Clarkes Hill and be at risk of colliding with pedestrians or cyclists.

Figure 2.5: Proposed layout at Brookfield.



Source: Mott MacDonald / Cork City Council

Recommendation

Provide appropriate links between the northern and southern sides of Rochestown Road, this may involve providing a bi-directional cycle track across Rochestown Road.

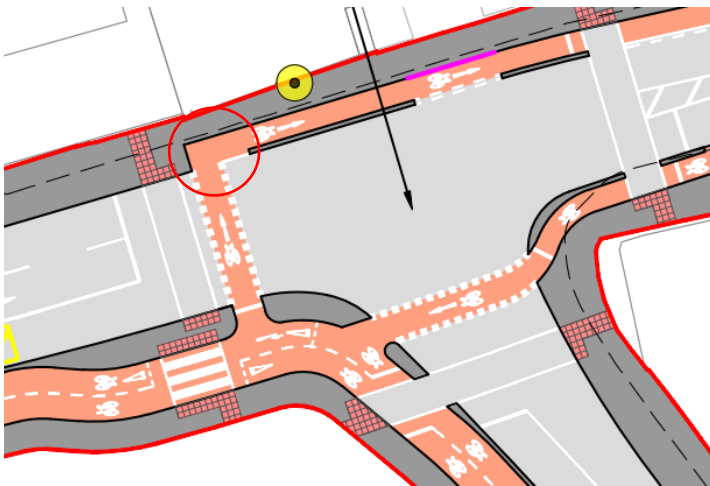
2.10 Problem 1.10

Location: Rochestown Road / Clarkes Hill northern arm.

Summary: Sharp turn for cyclists may result in the kerb being clipped or over ridden leading to falls from bikes.

Cyclists from the southern side of Rochestown Road crossing to the northern side and heading east are expected to make a 90-degree turn. This sharp turn could be a difficult manoeuvre for some bikes to undertake which could result in the kerb being clipped or over ridden. Should bikes strike the kerb, it increases the risk of cyclists being unseated which may result in cyclists falling from their bikes leading to personal injury.

Figure 2.6: Proposed cycle track layout at Clarkes Hill.



Source: Mott MacDonald / Cork City Council

Recommendation

Relax the angle of the cycle track so that it is more gentle and easier for cyclists to turn.

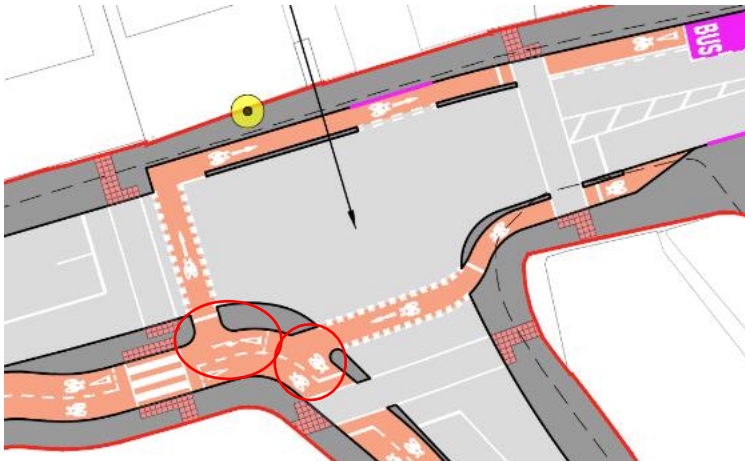
2.11 Problem 1.11

Location: Rochestown Road / Clarkes Hill northern arm.

Summary: Insufficient length of cycle track may lead to conflict with other cyclists.

The layout proposes locations where cyclists are to stop or give-way to other cyclists. The Road Safety Audit Team is concerned that cyclists waiting at these Stop and Give-way lines may block the path for other cyclists continuing on a different route potentially leading to conflict between cyclists.

Figure 2.7: Proposed cycle track layout at Clarkes Hill.



Source: Mott MacDonald / Cork City Council

Recommendation

Provide a sufficient length of cycle track for cyclists to wait without hindering other cyclists travelling in a different direction.

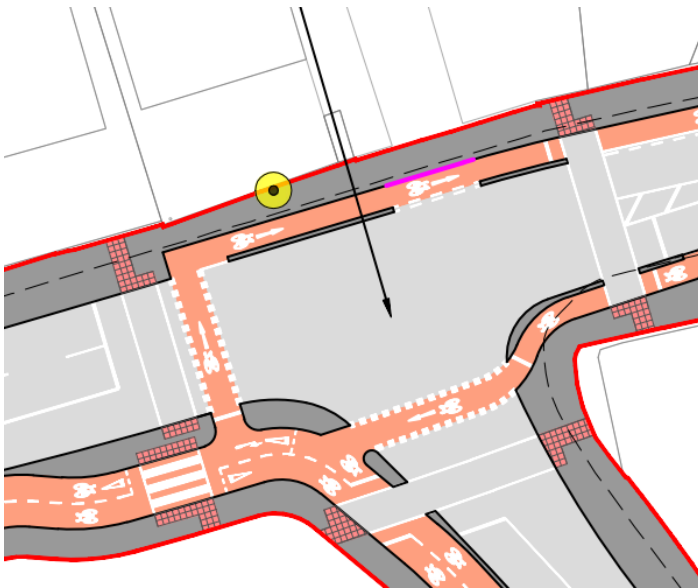
2.12 Problem 1.12

Location: Rochestown Road / Clarkes Hill northern arm.

Summary: Lack of control for those properties entering / exiting within the signalised junction could result in rear end shunt and turning related collisions.

Access to several properties is proposed within the signalised junction which do not appear to be controlled. The lack of control could result in motorists exiting the properties into the path of other traffic flows that have a green traffic signal which could result in conflict. Furthermore, through traffic may not expect vehicles to be slowing to turn within the junction leading to rear end shunt related collisions.

Figure 2.8: Proposed arrangement at Clarkes Hill.



Source: Mott MacDonald / Cork City Council

Recommendation

Provide signal control for those exiting from Clarkes Hill northern arm. The junction may need formalising and potentially narrowing

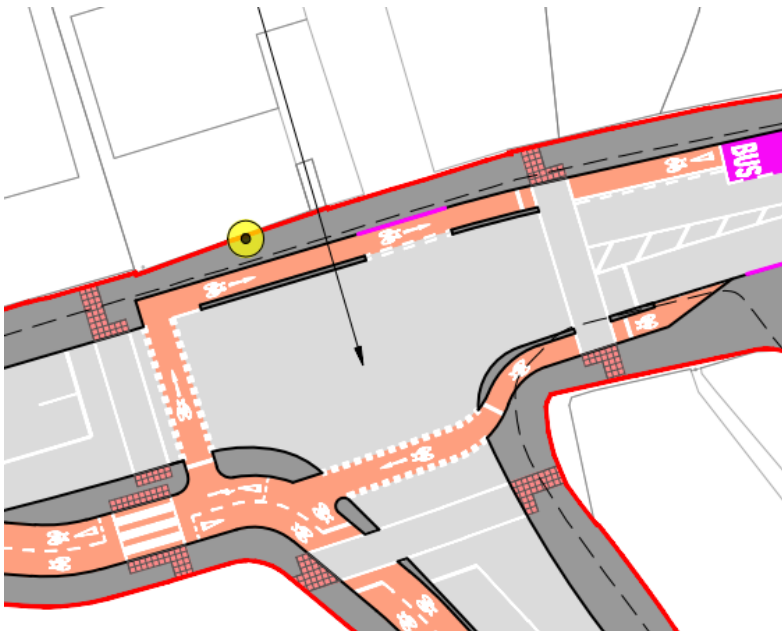
2.13 Problem 1.13

Location: Rochestown Road / Clarkes Hill.

Summary: Lack of appropriate green times for length of crossing may result in pedestrian collisions with motorists and cyclists.

The crossing widths, particularly on Rochestown Road eastern arm and Clarkes Hill are wide taking into account crossing of the cycle track. Should the pedestrian green times not be sufficient in length for pedestrians to complete their crossing movement, it could result in conflict with motorists or cyclists who may commence their movement before a pedestrian has completed their crossing.

Figure 2.9: Proposed Crossings at Clarkes Hill.



Source: Mott MacDonald / Cork City Council

Recommendation

Provide sufficient pedestrian green times to allow a pedestrian to fully cross the carriageway and cycle track prior to other signal stages receiving a green light.

2.14 Problem 1.14

Location: Clarkes Hill southern arm.

Summary: Lack of clearly conspicuous traffic signals combined with high vehicle speeds may lead to drivers failing to stop appropriately on approach to the traffic signals leading to turning related collisions or collisions with pedestrians on the crossing.

Clarkes Hill is proposed to become signalised however the Road Safety Audit Team is concerned that vehicles on Clarkes Hill may not anticipate the traffic signals and fail to stop in time. Clarkes Hill is currently heavily vegetated with branches over hanging the carriageway, and whilst the drawings show some vegetation is to be cleared, it is not clear to what extent. There is an existing kink in the alignment on the approach to Rochestown Road which hides the nearside kerbline, and whilst the kerb alignment is changing, the introduction of the segregated cycle track will likely place the nearside traffic signal equipment further from motorists' view. Furthermore, Clarkes Hill is on a downhill gradient which, if the traffic signals are not clear to approaching motorists either because they are hidden by vegetation or the alignment, could result in motorists approaching the junction at too high a speed leading to sudden braking or red-light infringements which may result in turning related collisions. In addition, should vehicles fail to appropriately stop at the signals it may lead to collisions with pedestrians or cyclists.

Figure 2.10: Existing layout on Clarkes Hill.



Source: Mott MacDonald

Recommendation

Site the traffic signals so that they are clearly conspicuous on the Clarkes Hill northbound approach to Rochestown Road and undertake appropriate vegetation clearance/removal. It may also be appropriate to provide high friction surfacing on the approach to the signal Stop line.

2.15 Problem 1.15

Location: Clarkes Hill southern arm.

Summary: Lack of appropriate tie-in could result in cyclists being vulnerable.

A bi-directional cycle track is proposed on the western side of Clarkes Hill for approximately 100m, with the lane being widened to accommodate this. At the southern-most start/end of the segregated cycle track on Clarkes Hill there is no tie-in with the existing carriageway, and it is not clear how cyclists are to join or leave the cycle track. The lack of a suitable tie-in with the existing carriageway increases cyclists' vulnerability and potential for conflict.

Likewise, it is not clear how the widened footway on the eastern side of Clarkes Hill ties into the existing footway provision. Should the proposed and existing footway not tie up it could result in pedestrians tripping over the kerb edge at risk of personal injury, or they may walk in the road at risk of collisions with motorists.

Figure 2.11: Proposed start/end of cycle track on Clarkes Hill.



Source: Mott MacDonald / Cork City Council

Recommendation

Provide an appropriate tie-in with the existing carriageway enabling cyclists to join/leave the bi-directional cycle track and suitably tie in the proposed and existing footways.

2.16 Problem 1.16

Location: Rochestown Road / Riverside.

Summary: High vehicle speeds, and wide crossing distance may make crossing pedestrians vulnerable to being struck. A lack of give-way markings may result in turning related collisions.

Riverside is a wide junction with pedestrians proposed to cross at its widest point in line with the footway. Unlike the other junctions it is not proposed to become a raised table crossing and there is concern that vehicle turning speeds could be high. Given the wide crossing distance and potential for higher vehicle speeds, crossing pedestrians could be vulnerable to being struck by turning motorists.

Furthermore, there are no markings indicating to motorists exiting Riverside of the need to give-way, and whilst there aren't currently give-way markings, should motorists not recognise the need to give-way it could lead to turning related collisions.

Figure 2.12: Existing Riverside junction.



Source: Mott MacDonald

Recommendation

Provide a raised table crossing over Riverside and where possible reduce the junction radii to reduce vehicle speeds. Provide give-way markings to indicate the need for traffic on Riverside to give-way to traffic on Rochestown Road.

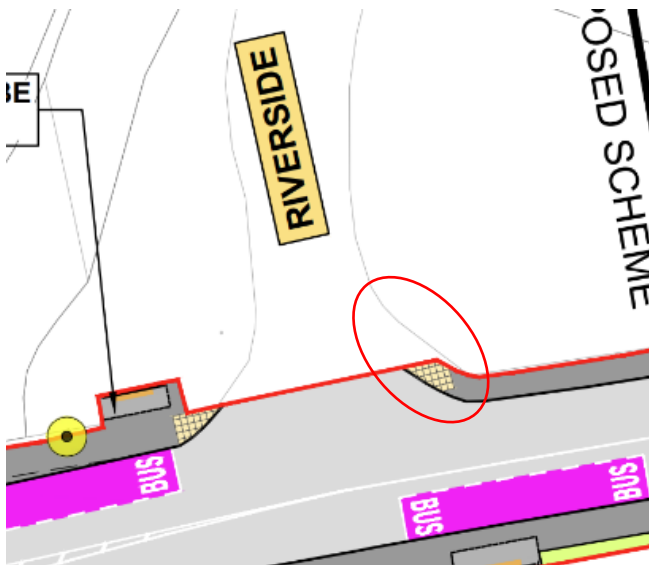
2.17 Problem 1.17

Location: Rochestown Road / Riverside.

Summary: Inappropriate tie in on Riverside could result in pedestrians walking within the carriageway at risk of conflict with motor vehicles.

The kerb alignment is to be amended, however it is not clear how the kerb is being modified and connecting with the existing provision on Riverside. Should the proposed footway fail to connect with the existing footway provision it could result in pedestrians being within the carriageway at risk of conflict with motorists.

Figure 2.13: Proposed layout at Riverside junction.



Source: Mott MacDonald / Cork City Council

Recommendation

Continue the footway from Rochestown Road into Riverside.

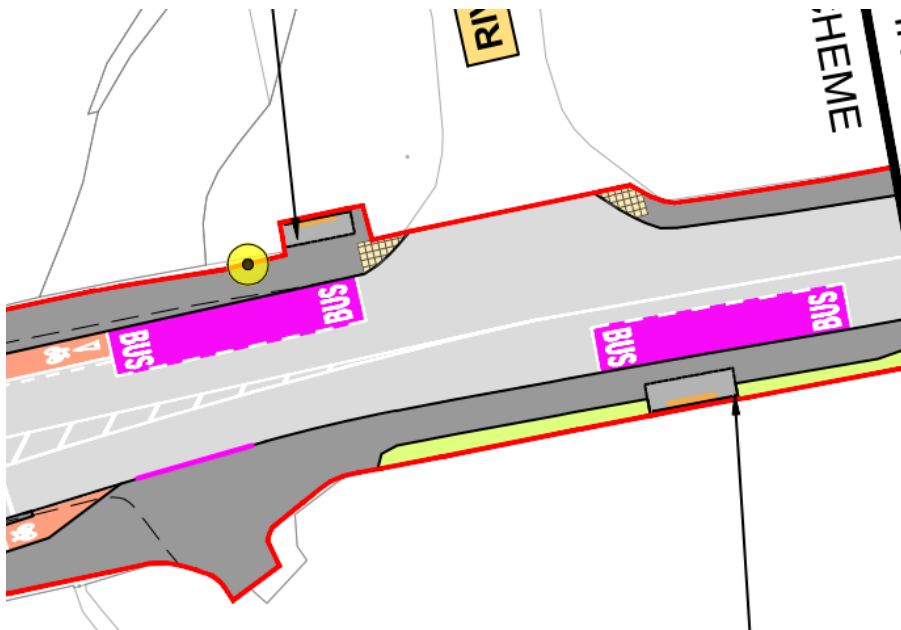
2.18 Problem 1.18

Location: Rochestown Road / Riverside.

Summary: Bus stop opposite junction may lead to vehicles overtaking a bus at the same time a vehicle exits Riverside leading to turning related collisions.

The bus stop on the southern side of Rochestown Road is proposed almost opposite Riverside. There is concern that a westbound vehicle on Rochestown Road may attempt to overtake a stationary bus at the same time a vehicle pulls out of Riverside, increasing the risk of turning related collisions.

Figure 2.14: Proposed bus stop opposite Riverside.



Source: Mott MacDonald / Cork City Council

Recommendation

Relocate the bus stop further away from the junction.

3 Road Safety Audit Team Statement

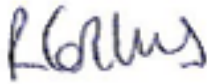
We certify that this Road Safety Audit has been carried out in accordance with Transport Infrastructure Ireland's (TII) publication GE-STY-01024 May 2025 (Road Safety Audit).

Road Safety Audit Team Leader

R J Collins BA (Hons), MSc, MCIHT

TII Approved Road Safety Auditor (reference: RC842524)
(Certificate of Competency in Road Safety Audit, July 2016)

Signed:



Date: 14th July 2026

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Signed:



Date: 14th July 2026

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Appendices

A.	Documents and Drawings Referenced	22
B.	Key Plan – St Patricks Junction	23

A. Documents and Drawings Referenced

Table A.1: Documents Referenced

Ref.	Title	Rev
	R610 St. Patricks Junction Upgrade Scheme – description of the development	-

Source: Mott MacDonald

Table A.2: Drawings Referenced

Ref.	Title	Rev
229101186-MMD-0000-XX-DR-C-0202	R610 St. Patricks Junction Upgrade Scheme, Site Location Plan, Sheet 01 of 01	P01
229101186-MMD-0100-XX-DR-C-0009	R610 St. Patricks Junction Upgrade Scheme, General Layout and Sections, Sheet 1 of 2	P03
229101186-MMD-0100-XX-DR-C-0010	R610 St. Patricks Junction Upgrade Scheme, General Layout and Sections, Sheet 2 of 2	P03
229101186-MMD-0100-XX-DR-C-0009-with_trees	R610 St. Patricks Junction Upgrade Scheme, General Layout and Sections with trees, Sheet 1 of 2	P03
229101186-MMD-0100-XX-DR-C-0010-with_trees	R610 St. Patricks Junction Upgrade Scheme, General Layout and Sections with trees, Sheet 2 of 2	P03

Source: Mott MacDonald

B. Key Plan – St Patricks Junction



