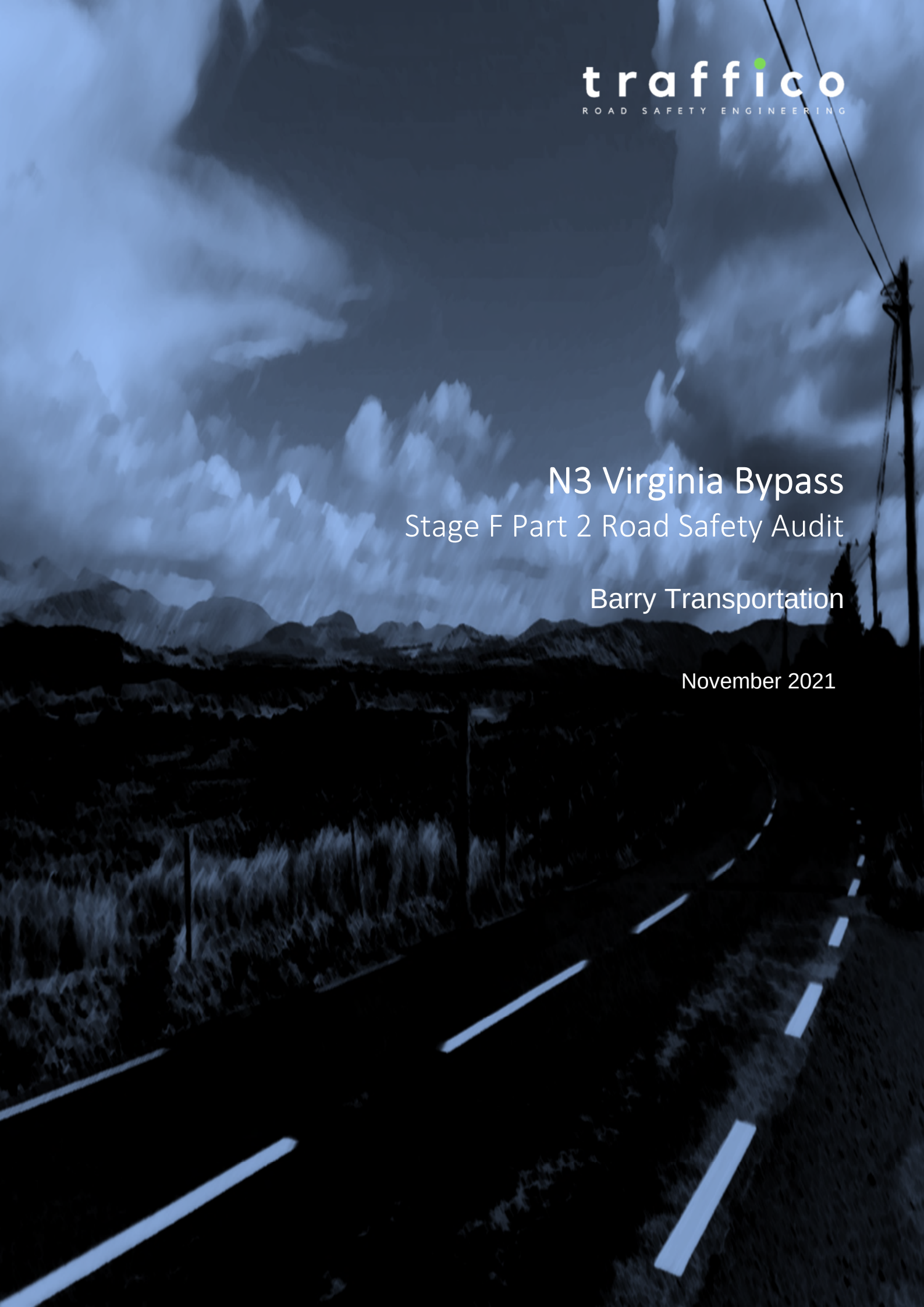

traffico
ROAD SAFETY ENGINEERING

N3 Virginia Bypass

Stage F Part 2 Road Safety Audit

Barry Transportation

November 2021

traffico

N3 Virginia Bypass

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Notice

This document and its contents have been prepared and are intended solely for Barry Transportation's information and use in relation to the N3 Virginia Bypass.

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

Document History

JOB NUMBER: 210019			DOCUMENT REF: 210019RPT002_RSAF_P2_Rev_2			
2	Final Issue	MD	AON	MD	MD	5 Nov 2021
1	Final Issue	MD	AON	MD	MD	4 Nov 2021
0	Draft Issue	MD	AON	MD	MD	2 Nov 2021
Revision	Purpose Description	Originated	Checked	Reviewed	Authorised	Date

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1. Introduction

1.1 Report Context

This report describes the findings of a Stage F Part 2 Road Safety Audit associated with the N3 Virginia Bypass project.

The Audit has been completed by Traffico Ltd. on behalf of Barry Transportation.

1.2 Details of Site Inspection

Date	Daylight / Darkness	Weather & Road Conditions
Friday 22nd October 2021	Daylight	Sunny with clouds, dry roads.

Table 1.1 – Site Inspection Details

1.3 The Road Safety Audit Team

The members of the Road Safety Audit Team have been listed following:

Table 1.2 – Audit Team Details

Status	Name / Qualifications	TII Auditor Reference No:
Audit Team Leader (ATL)	**Martin Deegan** BEng(Hons) MSc CEng MIEI	MD101312
Audit Team Member (ATM)	**Adrian O'Neill** BEng MSc CEng MIEI	AO1356497
Audit Trainee (AT)	-	-

1.4 Design Drawings Examined as Part of the Audit Process

The following drawing(s) were examined as part of the Road Safety Audit (RSA) process:

Drawing No.	Drawing Title	Revision
19408-BT-01-ML-DR-C_4350	Emerging Preferred Option Corridor OS Discovery	C01
19408-BT-01-ZZ-DR-C_4381	EPO Plan & Profile Sheet 1 of 4	P01
19408-BT-01-ZZ-DR-C_4382	EPO Plan & Profile Sheet 2 of 4	P01
19408-BT-01-ZZ-DR-C_4383	EPO Plan & Profile Sheet 3 of 4	P01
19408-BT-01-ZZ-DR-C_4384	EPO Plan & Profile Sheet 4 of 4	P01

Table 1.3 – Designers Drawing List

1.5 Road Safety Audit Compliance

Procedure and Scope

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.

Compliance with Design Standards

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

Minimizing Risk of Collision Occurrence

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.

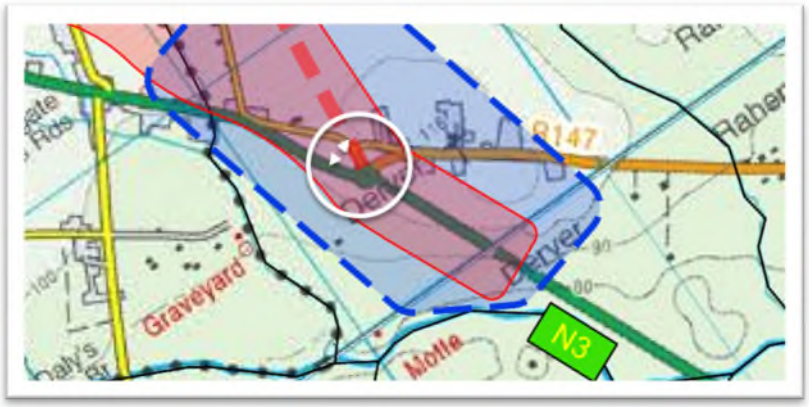
2. Road Safety Issues Identified

2.1 Problem: Separation Between Junction Arms

Location: Roundabout at Chainage 0+000m

The new junction arm will be in close proximity to the arm serving the existing N3 route. This could lead to driver confusion, late braking, and side swipe type collisions.

Figure 2.1 – Separation Between Roundabout Arms



Recommendation

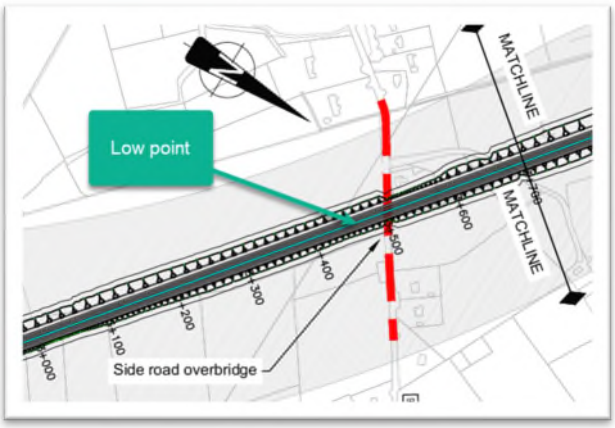
Greater separation should be provided between the junction arms described.

2.2 Problem: Managing Run-Off at Low Point

Location: Mainline Chainage 3+460m

The low point at Chainage 3.460m coincides with a number of house dwellings. This could lead to surface water run-off gathering around the houses during significant rainfall events.

Figure 2.2 – Low Point in Vertical Profile



Recommendation

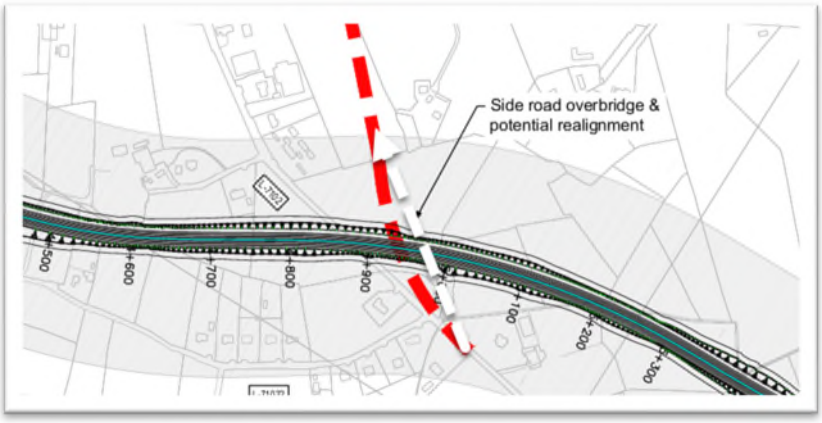
Appropriate drainage measures should be provided to mitigate the risk described.

2.3 Problem: Forward Stopping Sight Distance (SSD)

Location: Side Road L-7103 Re-Alignment Mainline Chainage 4+950m

The overbridge could limit forward stopping sight distance on the side road, leading to rear end shunts or loss of control type collisions.

Figure 2.3 – SSD at Side Road / Underbridge



Recommendation

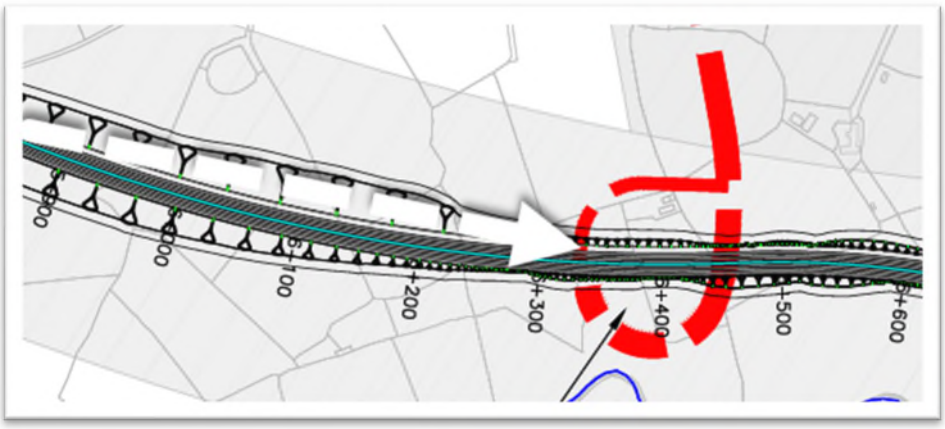
Appropriate forward stopping sight distance should be provided at the location described.

2.4 Problem: Cutting Obscuring Compact Junction

Location: Alignment Mainline Chainage 4+950m

The cutting earthworks could obscure the presence of the junction for northbound drivers. This could lead to late braking and rear end shunt type collisions.

Figure 2.4 – Embankment on Approach to Junction



Recommendation

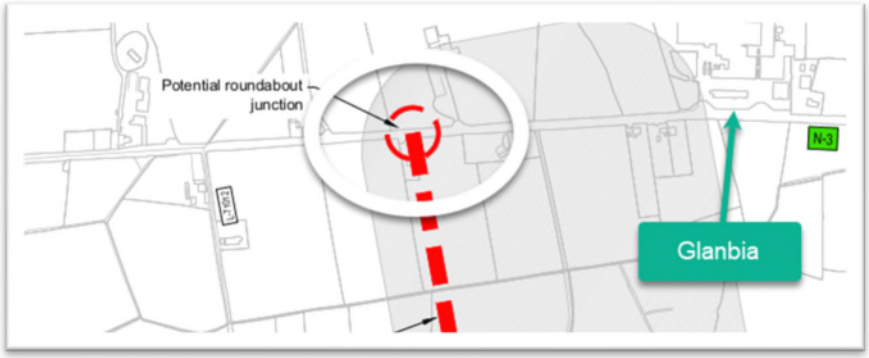
The earthworks should be designed to ensure that the junction is ‘self-reading’ on approach.

2.5 Problem: Burrencarragh Link Road Roundabout Connection

Location: Connection to Existing N3 at Mainline Chainage 6+000m

The roundabout appears to be located near a vertical crest on the existing N3, which could lead to drivers failing to observe the junction's presence. Inappropriate forward visibility to the junction may result in motorists failing to appreciate the road layout increasing the risk of a collision here.

Figure 2.5 – Conspicuousness of Roundabout



Recommendation

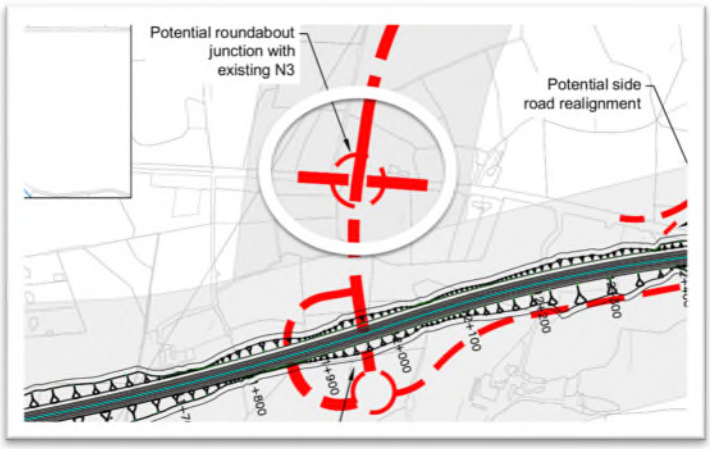
Appropriate forward visibility should be provided on the roundabout approaches.

2.6 Problem: New Roundabout on Existing Undulating Alignment

Location: Existing N3 at South of Mainline Chainage 11+950m

The combination of high operating speeds and undulating vertical alignment could increase the risk of collisions at the new roundabout.

Figure 2.6 – Need for 'Self Reading Junction Layout' for New Roundabout



Recommendation

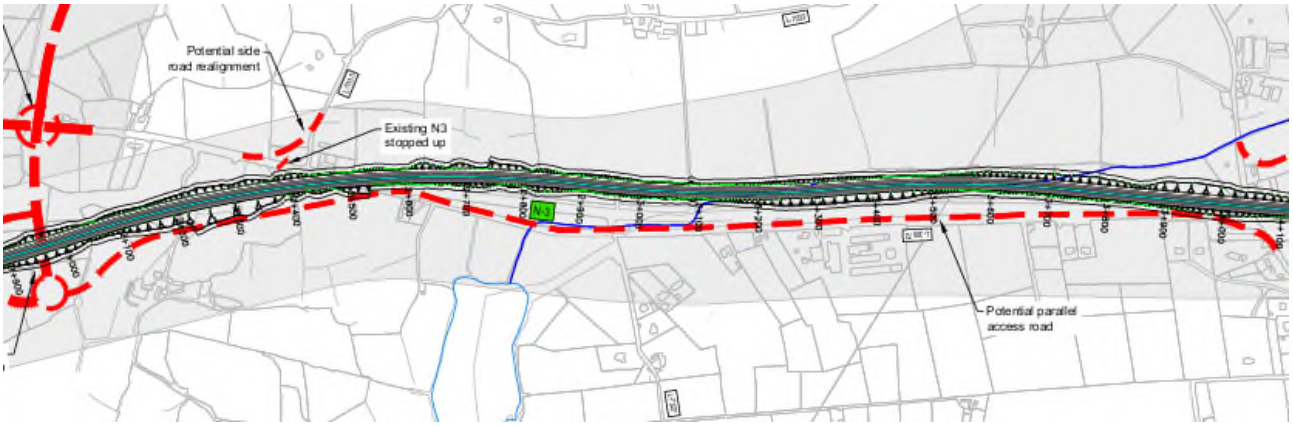
The approach alignment of the existing N3 should be designed to maximise the conspicuousness of the roundabout.

2.7 Problem: Inter-Visibility Between Mainline and Access Road

Location: Mainline Chainage 12+100m to 12+900m

Where the access road will run parallel to the mainline, there is a risk of headlight distraction and an errant vehicle crossing from one road to the other.

Figure 2.7 – Access Road Beside Mainline



Recommendation

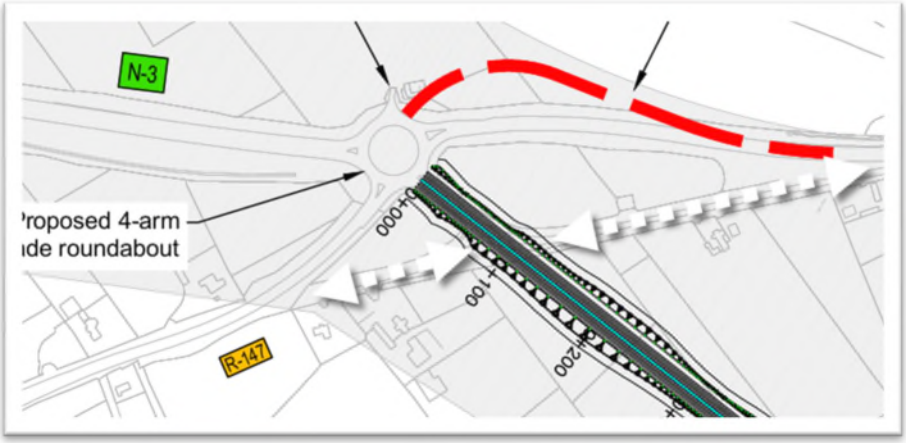
Appropriate containment measures and screening should be provided at the location described.

2.8 Problem: Maintaining Access to Existing Properties

Location: Route Wide

Failing to provide suitable access to existing private properties which are directly impacted upon by the route, could lead to motorists undertaking prohibited (or unsafe) manoeuvres which might increase the risk of collisions occurring.

Figure 2.8 – Example Properties at Southern Tie In Where Access Provision will be Required



Recommendation

Appropriate access should be provided to existing properties which are directly impacted upon by the route.

2.9 Problem: Access to Farmland

Location: **Route Wide**

Failing to provide safe and appropriate access to farmland which may be directly impacted upon by the route could result in slow moving agricultural vehicles crossing or travelling along the mainline carriageway. This could result in driver frustration and collisions between agricultural vehicles and general traffic.

Recommendation

Provision for access which might mitigate the need for slow moving agricultural vehicles crossing or travelling along the mainline should be made to all farmland which is directly impacted upon by the route

3. Audit Team Statement

3.1 Certification & Purpose

We certify that we have examined the drawing(s) listed in Chapter 1 of this Report.

Sole Purpose of the Road Safety Audit

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 to improve the road safety aspects of the scheme.

3.2 Implementation of RSA Recommendations

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.

Audit Team's Independence to the Design Process

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

3.3 Road Safety Audit Team Sign-Off

Martin Deegan
Audit Team Leader
Road Safety Engineering Team
traffico

Signed: 

Date: 2nd November 2021

Adrian O'Neill
Audit Team Member
Road Safety Engineering Team
BARRY & PARTNERS

Signed: 

Date: 2nd November 2021

4. Designers Response

4.1 How the Designer Should Respond to the Road Safety Audit

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 for consideration. See flow-chart following for further description.

Figure 4.1 – Road Safety Audit Sign-Off and Completion Process

4.2 Returning the Completed Feedback Form

The Designer should return the completed Road Safety Audit Feedback Form attached in Appendix A of this report to the following email address:

- Email address: martin@traffico.ie

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

Triggering the Need for an Exception Report

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 listed in the audit report.

Appendix A

A.1 Road Safety Audit Feedback Form

Road Safety Audit Feedback Form

Scheme: N3 Virginia Bypass

Audit Stage: Stage F Part 2 Road Safety Audit | **Audit Date:** 2nd November 2021

Problem Reference (Section 2)	Designer Response Section			Audit Team Response Section
	Problem Accepted (yes / no)	Recommended Measure Accepted (yes / no)	Alternative Measures or Comments	Alternative Measures Accepted (yes / no)
2.1	Y	Y	Appropriate separation will be investigated in further detail during Phase 3 of planning and design process.	Noted
2.2	Y	Y	Appropriate drainage measure will be investigated in further detail during Phase 3 of planning and design process.	Noted
2.3	Y	Y	Appropriate visibility requirements will be investigated in further detail during Phase 3 of planning and design process.	Noted
2.4	Y	Y	Appropriate visibility requirements will be investigated in further detail during Phase 3 of planning and design process.	Noted
2.5	Y	Y	Appropriate visibility requirements will be investigated in further detail during Phase 3 of planning and design process.	Noted
2.6	Y	Y	Appropriate visibility requirements will be investigated in further detail during Phase 3 of planning and design process.	Noted
2.7	Y	Y	Appropriate intervisibility screening and containment requirements will be investigated in further detail during Phase 3 of planning and design process.	Noted
2.8	Y	Y	Appropriate property and farmland access will be investigated in further detail during Phase 3 of planning and design process.	Noted
2.9	Y	Y	Appropriate property and farmland access will be investigated in further detail during Phase 3 of planning and design process.	Noted

**The Designer should complete the Designer Response Section above, then fill out the designer details below and return the completed form to the Road Safety Audit Team for consideration and signing.*

Designer's Name:	Tom Cannon Barry Transportation	Designer's Signature:		Date:	04/11/2021
Audit Team's Name:	Martin Deegan t r a f f i c o	Audit Team's Signature:		Date:	05 Nov 2021
Employer's Name:	Oliver Mulligan Cavan County Council	Employer's Signature:		Date:	04/11/2021

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