

**Comhairle Contae Chiarraí  
Oifig Deartha um Bóithre Náisiúnta Chiarraí**



**Kerry County Council  
Kerry National Road Design Office**



**Kerry NRDO**  
National Road Design Office  
*Oifig Deartha um Bóithre Náisiúnta Chiarraí*

**N77 Ballyragget Village to Ballynaslee  
Improvement Scheme**



**Road Safety Audit Report  
Stage F1**

**October 2017**





### DOCUMENT CONTROL SHEET

**Project Name:** N77 Ballyragget Village to Ballynaslee Improvement Scheme

**NRA Project Ref.:** KK/16/13402

**Project Phase:** Phase 2 – Route Selection.

**Report Title:** Road Safety Audit Report Stage F1.

Report Reference:		99-N77-01-F1D.doc			
Rev	Date	Prepared	Checked	QA Review	Authorised
Draft	Oct 17	T. Smith	J. Sayers	P. McCarthy	P. Curry
Final		 Date: 30/1/18	 Date: 30/1/18	 Date: 3/1/18.	 Date: 3/1/18

#### Report Distribution.

**Master Copy:** Thomas Brennan, Executive Engineer,  
Tramore House Regional Design Office.

**Digital Copies:** J99 Project File, Kerry National Road Design Office.

#### Contact Details:

##### Kerry National Road Design Office.

Kerry County Council,  
Kerry National Road Design Office,  
The Island Centre,  
Castleisland,  
Co. Kerry.  
Tel: 066 71 42 444.  
Fax: 066 71 42 094.  
E-mail: [info@kerry.nrdo.ie](mailto:info@kerry.nrdo.ie)

## TABLE OF CONTENTS

	<b>Description</b>	<b>Page No.</b>
	Document Control Sheet	i
	Table of Contents	ii
<b>Section 1.0</b>	Introduction	1
<b>Section 2.0</b>	Safety Issues Arising from the Audit	3
<b>Section 3.0</b>	Preference of Design Options	5
<b>Section 4.0</b>	Audit Team Statement	6
<b>Appendix A</b>	List of Drawings and Reports Examined.	

## 1.0 Introduction.

1.1 This report outlines the problems identified in the Stage F1 Part 1 Road Safety Audit carried out on the N77 Ballyragget Village to Ballynaslee Improvement Scheme.

1.2 The audit team members were as follows:

Tracy Smith TS161432.	Kerry NRDO	Team Leader
Ronnie Basquill RB181479	Tramore House RDO	Team Member
Owen Duffy OD146403.	Tramore House RDO	Team Member
Marija Gajic A.E.	Tramore House RDO	Observer

1.3 The audit comprised an examination of the drawings relating to the scheme, supplied by Tramore House Regional Design Office. A day time site visit was undertaken on Thursday 12<sup>th</sup> October 2017 between the hours of 12:00 and 13.30. Weather conditions were dry and bright.

1.4 The scheme is a national route minor works scheme of approximately 3.6km in length. The scheme commences just north of the village of Ballyragget, and continues northwards for 3.6km to tie in with the recently constructed N77 Ballynaslee Scheme. The entrance to the Ballyragget Glanbia Milk Processing Plant is located at approximately Ch1400. There are numerous other accesses to include private residential, agricultural and local road.

There are two options for the scheme:

**Option 2:** The proposal is to strengthen the existing pavement up to Ch2100. From Ch2100 to End, the existing carriageway is widened to Type 1 Single Carriageway cross-section. The existing cross-section profile will be regulated to improve camber. The existing substandard bends between Ch2500 and Ch3100 will remain substandard.

**Option 3:** The proposal is to strengthen the existing pavement up to Ch1200. From Ch1200 to Ch2100, the existing carriageway is widened to “Type 1 Single Carriageway” cross-section. The existing cross-section profile to be regulated to improve camber. From Ch2100 to end, there is offline realignment in accordance with DMRB standards to remove two existing substandard bends between Ch2500 and Ch3100. This option also includes a junction upgrade at the main entrance to the Glanbia Milk Processing Plant to remove the auxiliary lane and improve visibility.

The proposal is subject to a 100km/h speed limit with a 60km/h at the start of the scheme and the design speed is 100km/h.

1.5 This Stage F1 Road Safety Audit Report has been carried out in accordance with TII GE-STY-01024. The team has examined only those issues within the design relating

to the road safety implications of the improvement works, and has, therefore, not examined or verified the compliance of the design to any other criteria.

**1.6** Appendix A lists any drawings and reports examined by the Audit Team.

## 2.0 Safety Issues Arising from the Audit.

### 2.1 Option 2 – Existing access to Glanbia

**Problem:** There are a large number of hazards located in the immediate vicinity of the junction. The existing junction has a substandard right turn layout, with no hard strip or verge on either side. There is an existing concrete post and rail fence located in close proximity to the carriageway. Visibility at the entrance to the Glanbia plant is restricted and HGVs turning into the Glanbia plant obscure visibility for exiting vehicles. There are no facilities for vulnerable road users.

**Hazard:** Lack of sight distance may lead to exiting vehicles overshooting the junction and collisions with mainline traffic. The lack of hard shoulder or other refuge for vulnerable road users may result in collisions between vehicles and cyclists and pedestrians. The concrete post and rail fence adjacent to the carriageway will increase the severity of a collision.

### 2.2 Option 2 – Existing Accesses

**Problem:** There are a number of accesses on the existing alignment, with some properties having multiple access points onto the mainline, eg Property at Ch. 2100.

**Hazard:** Multiple access points lead to driver confusion, unexpected manoeuvres and vehicle conflicts.

### 2.3 Option 2 – Existing Substandard Bends

**Problem:** There is restricted visibility at the existing bends from CH2000 to CH2650. The carriageway is to be widened to a Type 1 in this location. There are 3 properties located along this section with existing accesses and boundary walls.

**Hazard:** Improving the cross section on the mainline without remedying the substandard alignment may lead to inappropriate speeds. Without easement of the bend or improving the sight distance, the increase in speed as a result of an improvement in cross section and pavement surface will increase the potential for loss of control collisions. Boundary walls within the clear zone will increase the severity of a collision.

### 2.4 Option 3 – Existing Accesses

**Problem:** There are a number of accesses on the existing alignment, with some properties having multiple access points onto the mainline, eg Properties at Ch. 2100 and Ch. 3500.

**Hazard:** Improving the alignment on the mainline may lead to increased speeds. Retaining multiple access points leads to driver confusion, unexpected manoeuvres and vehicle conflicts.

## **2.5 Option 3 – Proposed junction at Ch. 2790**

**Problem:** The realigned road will cause the old N77 to be severed. The former N77 is shown accessing the realigned section at a T junction. The T-junction will become in effect a 90 degree bend.

**Hazard:** Without easement of the bend into the T-junction, this would lead to excessive speeds and loss of control accidents.

## **2.6 Option 2 & 3 – Existing Boundaries**

**Problem:** There are existing concrete post and rail fences along the online sections of the scheme.

**Hazard:** Improving the surface and cross section on the mainline may lead to increased speeds. The concrete post and rail fence adjacent to the carriageway will increase the severity of a collision.

### 3.0 Preference of Design Options.

Following on from the concerns identified in *Section 2 Safety Issues Arising from the Audit*.

- Off line option (Option 3) provides an opportunity to remove a substandard section of road with existing accesses from the N77 National Road and is therefore preferred. The road layout at the Glanbia junction is also improved.
- Existing accesses and substandard bends remain on the on-line option.( Option 2) Improving the surface and cross section without remediation of the alignment and hazards will increase mainline speeds and may increase accident frequency & severity.
- Taking the above mentioned factors into consideration the Audit Team has concluded that the Route Option Proposals, as presented, rank as shown in *Table 3.0 Ranking of Route Options* in terms of Road Safety:

**Table 3.0: Ranking of Route Options.**

<b>Rank</b>	<b>Route Option</b>
<b>1</b>	Route Option 3
<b>2</b>	Route Option 2



#### 4.0 Audit Team Statement.

We certify that we have examined the drawings and other information listed in Appendix A and visited the site during the day of the 12<sup>th</sup> October 2017. We further certify that we are independent from the design team for the scheme. This examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified to improve the safety of the scheme. The problems that we have identified have been noted in the report, together with suggestions for a preferred option.

Signed:  **Audit Team Leader**      Date: 13-12-17  
**Tracy Smith**

Signed:  **Audit Team Member**      Date: 13-12-17  
**Ronnie Basquill**

Signed:  **Audit Team Member**      Date: 13-12-17  
**Owen Duffy**

a. **SAFETY AUDIT FORM – Feedback on Audit Reports**

**Scheme:** N77 Ballyragget Village to Ballynaslee Improvement Scheme,

**Audit Stage:** F1

**Date Audit Completed:** 20<sup>th</sup> November 2017

FEEDBACK SHEET				Page 1 of 2
Para. No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative Measures accepted by Auditors (yes/no)
2.1	Yes	n/a		
2.2	Yes	n/a		
2.3	Yes	n/a		
2.4	Yes	n/a		
2.5	Yes	n/a		
2.6	Yes	n/a		

Signed  Project Team Leader Date: 24/01/2018

Signed  Safety Audit Team Leader Date: 20/11/2017

Signed  Client Date: 20/11/17

## APPENDIX A

### List of Drawings and Reports Examined.

▪ **Drawings:**

- KK1613402-P2-RS-008 Preliminary Route Options – Option 2 Key Map (Sheet 1 of 7)
- KK1613402-P2-RS-009 Preliminary Route Options – Option 2 Ch0-Ch700 (Sheet 2 of 7)
- KK1613402-P2-RS-010 Preliminary Route Options – Option 2 Ch700-Ch1400 (Sheet 3 of 7)
- KK1613402-P2-RS-011 Preliminary Route Options – Option 2 Ch1400-Ch2100 (Sheet 4 of 7)
- KK1613402-P2-RS-012 Preliminary Route Options – Option 2 Ch2100-Ch2800 (Sheet 5 of 7)
- KK1613402-P2-RS-013 Preliminary Route Options – Option 2 Ch2800-Ch3500 (Sheet 6 of 7)
- KK1613402-P2-RS-014 Preliminary Route Options – Option 2 Ch3500-End (Sheet 7 of 7)
- KK1613402-P2-RS-015 Preliminary Route Options – Option 3 Key Map (Sheet 1 of 7)
- KK1613402-P2-RS-016 Preliminary Route Options – Option 3 Ch0-Ch700 (Sheet 2 of 7)
- KK1613402-P2-RS-017 Preliminary Route Options – Option 3 Ch700-Ch1400 (Sheet 3 of 7)
- KK1613402-P2-RS-018 Preliminary Route Options – Option 3 Ch1400-Ch2100 (Sheet 4 of 7)
- KK1613402-P2-RS-019 Preliminary Route Options – Option 3 Ch2100-Ch2800 (Sheet 5 of 7)
- KK1613402-P2-RS-020 Preliminary Route Options – Option 3 Ch2800-Ch3500 (Sheet 6 of 7)
- KK1613402-P2-RS-021 Preliminary Route Options – Option 3 Ch3500-End (Sheet 7 of 7)

**Reports:**

Brief for Stage F Road Safety Audit ,  
KK/16/13402-P2.003  
22/09/2017