

Appendix G. RSA Stage F

N53 Hackballscross to Rassan

Stage F Part 1 Road Safety Audit

Louth County Council

24/09/2019

Notice

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This document has 21 pages including the cover.

Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 0	Draft Issue	CJP	CJP	MD	MD	05/06/2019
Rev 1	Preferences Listed	CJP	CJP	MD	MD	01/07/2019
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Client signoff

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1. Introduction

Background

This report describes the findings of a Stage F Part 1 Road Safety Audit associated with the proposed improvement of the N53 from Hackballscross to Rassan scheme.

Five potential route options/sub-options were scrutinized as part of the audit process.

The scheme study area and route options are illustrated in the following Figure.

Figure 1.1 - Study Area and Route Options



The Audit has been completed by Atkins on behalf of Louth County Council.

The study included a desktop appraisal of the routes presented by the Design Team.

When the preferred option is chosen, a site visit will be undertaken by the relevant audit team and relevant observations added as part of the Stage F part 2 Road Safety Audit.

The Audit Team

The Audit Team members were as follows:

Team Leader: Martin Deegan, BEng (Hons) MSc CEng MICE

Team Members: Colin J Prendeville, BEng (Hons) CEng MIEI SoRSA CIHT

Liam Kiernan, BE (Hons) MIEI

Drawings

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

Table 2-1 Design Team Drawing List

Phase 2 Stage 2 Route Name	Drawing Number	Drawing Title	Date
-	5187353_HTR_SK_0017_STAT_I_REV_-	PHASE 2 - STAGE 2 ROUTE OPTIONS WITH CONSTRAINTS	24.05.19
Green Route	WH5302-03-002.23	Green Route Option (Ch0 to Ch1500) (Sheet 1 of 2)	14.05.19
	WH5302-03-002.24	Green Route Option (Ch1500 to Ch2993) (Sheet 2 of 2)	14.05.19
Blue Route	WH5302-03-002.25	Blue Route Option (Ch0 to Ch1500) (Sheet 1 of 2)	14.05.19
	WH5302-03-002.26	Blue Route Option (Ch1500 to Ch2990) (Sheet 2 of 2)	14.05.19
Red Route	WH5302-03-002.27	Red Route Option (Ch0 to Ch1500) (Sheet 1 of 2)	14.05.19
	WH5302-03-002.28	Red Route Option (Ch0 to Ch3062) (Sheet 2 of 2)	14.05.19
Purple Route (with alt. junction)	WH5302-03-002.33	Purple Route Option (Ch0 to Ch1670) with alternative junction layout (Sheet 1 of 2)	15.05.19
	WH5302-03-002.34	Purple Route Option (Ch0 to Ch1670) with alternative junction layout (Sheet 1 of 2)	15.05.19
Brown Route (with alt. junction)	WH5302-03-002.35	Purple Route Option (Ch1670 to Ch3340) with alternative junction layout (Sheet 2 of 2)	15.05.19
	WH5302-03-002.36	Brown Route Option (Ch0 to Ch1650) with alternative junction layouts (Sheet 1 of 2)	15.05.19

Documents

The following data was examined as part of the Stage F Part 1 Road Safety Audit process:

Table 2-2 Table of relaxations and departures

Route	No of Departures	Description	No of Relaxations	Description
Green	1	Overtaking value	0	-
Blue	2	- Overtaking value; - Junction on inside of bend (Ch 1055)	0	-
Red	2	- Overtaking value - 360m radii curve	0	
Purple	1	Overtaking value	2	- 510m radii; - Crest K of 50
Brown	1	Overtaking value	0	-

Table 2-3 Table of overtaking values

Route	Overtaking Value
Green Route	East 16.6% West 18.3%
Blue Route	East 17.5% West 25.8%
Red Route	East 20.7% West 20.7%
Purple Route (with alt. junction)	East 18.6% West 25.9%
Brown Route (with alt. junction)	East 15.7% West 28.0%

Compliance

This Road Safety Audit has been carried out in accordance with the procedures and scope set out in TII publication numbers GE-STY-01024 Road Safety Audit (formerly NRA DMRB, Volume 5, Section 2, Part 2 Standards HD 19) and GE-STY-01027 Road Safety Audit Guidelines (Formerly NRA DMRB, Volume 5, Section 2, Part 2 Standards HA 19).

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.

The 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.

These should be given consideration by the design team in the development of the final design and selection of the preferred option.

2. Road Safety Hazards Identified

Overview of Green Route

The overall route length is 2.992 km. The route includes approximately 600m of online and 2.4 km of offline sections.

The plans allow for new and existing junction upgrades. Pedestrian and cyclist facilities are proposed along the hard shoulders of the scheme and along the existing N53 as required.

2.1. Side Road Junctions

Location: Chainage 1000m mainline

The side road junctions are positioned in close proximity to each other relative to some other options. Drivers may 'take chances' to cut across the mainline failing to properly give-way to mainline drivers in each direction. Additionally, mainline drivers may have increased difficulty managing the movement of opposing traffic in this area.

Hazard

Shunt, side-swipe and side-impact collisions due to increased traffic movements in isolated location.

2.2. VRU Demand

Location: Chainage 1000m mainline

The proposed layout may be an attractive option for vulnerable road users to cross the new N53. This could lead to conflict with high speed through vehicles on the mainline.

Hazard

VRU collisions with mainline drivers.

2.3. Junctions on Curves

Location: Chainage circa 2350m

A junction is provided between 2 curved alignments and at the end of the curve transitions. Visibility may be affected by the curves and limit driver's ability to safely join the mainline. The gradients coming from the west may exacerbate the problem where drivers have difficulty in assessing approaching driver's speed.

Hazard

Junction visibility and pull-out issues.

2.4. Higher Downhill Speeds

Location: Chainage circa 1750m to 2200m

A gradient of circa 3.8% is indicated in the location outlined above. Drivers are effectively travelling downhill over more than 1km. This may lead to higher driving speeds on the downgrade and potential conflict. Higher gradients may pose challenges for heavy-goods vehicles and which may also lead to conflict.

Hazard

Higher speed and challenges for heavy goods vehicles on gradient.

2.5. Curved Junction Approach

Location: Chainage circa 100m along L3117

A curved alignment is proposed along the L3117 linking the N53 to Crossmaglen. The curved alignment may pose challenges to drivers leading to loss-of-control. Additionally, drivers may not have adequate visibility at the junction from the old N53 (Annaghvacky) that meets the curved alignment.

Hazard

Junction visibility issues and loss-of-control due to provision of curved alignment.

Overview of Blue Route

The overall route length is 2.990 km. The route includes approximately 1.4km of online and 1.6 km of offline sections.

The plans allow for new and existing junction upgrades. Pedestrian and cyclist facilities are proposed along the hard shoulders of the scheme and along the existing N53 as required.

2.6. Side Road Junctions

Location: Chainage 1040m mainline

The junctions are positioned in proximity to each other relative to some other options. Drivers may 'take chances' to cut across the mainline failing to properly give-way to mainline drivers in each direction. Additionally, mainline drivers may have increased difficulty managing the movement of opposing traffic in this area.

Hazard

Shunt, side-swipe and side-impact collisions due to increased traffic movements in isolated location.

2.7. VRU Demand

Location: Chainage 1040m mainline

The proposed layout may be an attractive option for vulnerable road users to cross the new N53. This could lead to conflict with high speed through vehicles on the mainline.

Hazard

VRU collisions with mainline drivers.

2.8. Junctions on Curves

Location: Chainage 1040m mainline

The junctions are positioned within a curved alignment. Visibility may be affected by the curved alignment and limit driver's ability to safely join the mainline.

Hazard

Junction visibility issues.

2.9. Errant Vehicles Traversing Embankment

Location: Chainage circa 2450m

The junction is proposed to be positioned considerably above the existing alignment (in excess of 6.0m above). This significant level difference will pose a hazard for mainline drivers if they were to exit the mainline. Additionally, drivers from the minor road may have a steep gradient to overcome in order to tie-into the new alignment potentially creating issues.

Hazard

Increased injury severity and steep gradients due to significant level difference through junction.

2.10. Curved Junction Approach

Location: Chainage circa 100m along L3117

A curved alignment is proposed along the L3117 linking the N53 to Crossmaglen. The curved alignment may pose challenges to drivers leading to loss-of-control. Additionally, drivers may not have adequate visibility at the junction from the old N53 (Annaghvacky) that meets the curved alignment.

Hazard

Junction visibility issues and loss-of-control due to provision of curved alignment.

Overview of Red Route

The overall route length is 3.062 km. The route includes approximately 0.55km of online and 2.5 km of offline sections.

The plans allow for new and existing junction upgrades. Pedestrian and cyclist facilities are proposed along the hard shoulders of the scheme and along the existing N53 as required.

2.11. Loss of Control on Curve

Location: Chainage 250m mainline

The scheme has a curved alignment of 360m proposed. Drivers may lose control as they travel through this curve.

Hazard

Loss-of-control due to provision of relatively tight curve.

2.12. Visibility at Curve

Location: Chainage 250m mainline

A junction is proposed within the 360m curve. The curved alignment may create difficulty for drivers limiting their visibility. Additionally, drivers travelling through the curve may have difficulty managing merging and diverging drivers as they travel through the curve.

Hazard

Various collisions due to provision of junction along curved alignment.

2.13. Errant Vehicles Traversing Embankment

Location: Chainage circa 2480m

Junction 5 is proposed to be positioned considerably above the existing alignment (in the region of 6.0m). This significant level difference will pose a hazard for mainline drivers if they were to exit the mainline. Additionally, drivers from the minor road may have a steep gradient in order to tie-into the new alignment potentially creating issues.

Hazard

Increased injury severity and steep gradients due to significant level difference through junction.

2.14. See-Through Effect

Location: Chainage circa 500m at L3117

A T-junction is proposed at the L3117 linking the N53 to Crossmaglen. The proposed junction is located at the intersection of the existing alignment. The proposed layout may create a see-through affect and lead to driver confusion.

Hazard

See-through affect due to location of proposed junction.

2.15. Proximity of School to Junction

Location: Chainage circa 500m

A school is located in proximity to where the route intersects the L3117 linking to Crossmaglen. The proximity of the junction to the school and where adequate provision is not made could lead to difficulty for vulnerable road users and school goers.

Hazard

Conflict for school goers due to proximity of junction.

Overview of Purple Route

The overall route length is 3.340 km. The route includes approximately 0.45km of online and 2.9 km of offline sections.

The plans allow for new and existing junction upgrades. Pedestrian and cyclist facilities are proposed along the hard shoulders of the scheme and along the existing N53 as required.

2.16. Side Road Junctions

Location: Chainage 1250m mainline

The junctions are positioned in proximity relative to some of the other options. Drivers may 'take chances' to cut across the mainline failing to properly give-way to mainline drivers. Additionally, mainline drivers may have increased difficulty managing the movement of opposing traffic in this area.

Hazard

Shunt, side-swipe and side-impact collisions due to increased traffic movements in isolated location.

2.17. VRU Demand

Location: Chainage 1250m mainline

The proposed layout may be an attractive option for vulnerable road users to cross the new N53. This could lead to conflict with high speed through vehicles.

Hazard

VRU collisions with mainline drivers.

2.18. Forward Visibility Through Curves

Location: Chainage circa 2710m

A junction is provided between 2 curved alignments and at the end of the curve transitions. Visibility may be affected by the curves and limit driver's ability to safely join the mainline. The gradient coming from the west may exacerbate the problem where drivers have difficulty in assessing approaching driver's speed.

Hazard

Junction visibility issues.

2.19. Higher Downhill Speeds

Location: Chainage circa 2250m to 2700m

A downhill section with a gradient of circa 3.8% is indicated at the location outlined above. This may lead to higher driving speeds on the downgrade and potential conflict. Higher gradients may pose challenges for heavy goods vehicles and may also lead to conflict.

Hazard

Higher speed and challenges for heavy goods vehicles.

2.20. Acute Side Road Angle

Location: Chainage circa 270m along connection to L3117

T-junctions 1a and 1b appear to connect at acute angles. Various conflicts may arise where drivers fail to adequately merge and diverge through the junction.

Hazard

Various conflicts due to poor alignment through junction.

Overview of Brown Route

The overall route length is 3.335 km. The route includes approximately 0.45km of online and 2.9 km of offline sections.

The plans allow for new and existing junction upgrades. Pedestrian and cyclist facilities are proposed along the hard shoulders of the scheme and along the existing N53 as required.

2.21. Visibility Through Curvature

Location: Chainage 350m mainline

The junction is provided in proximity to a curved alignment. It is unclear if adequate visibility is provided and may lead to drivers merging when unsafe to do so.

Hazard

Shunt, side-swipe and side-impact collisions due to restricted visibility.

2.22. Errant Vehicles Traversing Embankment

Location: Chainage circa 2500 to 2900m

Junction 4 is proposed to be positioned considerably above the existing alignment (in the region of 6.0m). This significant level difference will pose a hazard for mainline drivers if they were to exit the mainline. Additionally, drivers from the minor road may have a steep gradient in order to tie-into the new alignment potentially creating issues.

Hazard

Increased injury severity and steep gradients due to significant level difference through junction.

2.23. Loss of Control

Location: Chainage circa 100m along connection to old N53

The proposed alignment appears relatively tight and may lead to loss-of-control. Additionally, drivers may be confused by the old alignment due to a see-through effect.

Hazard

Loss-of-control and driver confusion.

3. Route Comparison & Ranking

3.1. Vulnerable Road Users – All Route Options

Pedestrian and cyclist provision are proposed within the hard shoulder on all options reviewed. Additionally, pedestrian and cyclist movements shall continue on the existing N53 as required.

3.1.1. Green Route

The Green Route is effectively the shortest route along with the Blue Route at 2992m. It has second lowest overtaking route traveling east (16.6%) and the lowest traveling west (18.3%). This route has 4 new junctions proposed.

The option has one departure which relates to a shortfall in overtaking value.

This option has 9 private access onto the route which is effectively the average for all the options. The green route has 6 agricultural accesses.

3.1.2 Blue Route

The Blue Route is similar in length to the Green as outlined above with a length of 2990m. It has the third lowest overtaking route traveling east (17.5%) and the third highest traveling west (25.8%) suggesting it is in the middle range for overtaking provision for all the options.

The option has one departure which relates to a shortfall in overtaking value and one departure relating to the provision of a junction on the inside of a curve.

The route matches the Green Route from chainage 0m to circa 1200m where it then deviates back and sooner to the existing N53 at chainage 1800m. This route has 4 new junctions.

The route utilises 1.4km of the existing N53 which is the highest percentage at 48% of all the options. This option has the highest number of private access connecting directly to it (a total of 14). The blue route has 6 agricultural accesses which is the same as the green route

3.1.2 Red Route

The Red Route has a total length of 3.062km. It has the highest overtaking value for eastbound traffic at 20.7%. Its overtaking value for westbound traffic is the second lowest at 20.7%. This route has 5 new junctions which is the highest of all options. The route utilises 550m of the existing N53 which is the second lowest at 18%. This option has 10 private accesses onto the route which is effectively the average for all the options. The red route has 5 agricultural accesses.

The proposal contains the smallest curve radius of all options (360m), which is located towards the start of the scheme. The option has one departure which relates to a shortfall in overtaking value and one departure relating to the provision of the 360m curve.

There is a school located in proximity to this option at chainage circa 480m which may result in higher vulnerable road user movements across the proposed N53 compared to other options.

3.1.2 Purple Route (with alt. junction)

The Purple Route is the longest route at of all options at 3340m. It has the second highest overtaking value for eastbound traffic (18.6%) the second highest for westbound (25.9%). This route has 3 new junctions which is the lowest of all the options. The route utilises 450m (13.5%) of the existing N53, the lowest of all routes. This option has the lowest number of private access connecting directly to it at 6. The purple route has 6 agricultural accesses

The option has one departure which relates to a shortfall in overtaking value and two relaxations relating to the provision of the 510m curve and reduced K value.

3.1.2 Brown Route (with alt. junction)

The Brown Route is the second longest route at 3335m. It has the lowest overtaking value for eastbound traffic (15.7%) and the highest for westbound(28.0%).

This route has 4 new junctions connecting to the N53. The route utilises 1250m of the existing N53 which is the second highest percentage at 37.5%.

This option has the second highest number of private access connecting directly to it with a total of 9 and 7 agricultural accesses.

The option has one departure which relates to a shortfall in overtaking value.

3.2. Ranking of Route Options

The main safety considerations in comparing the routes at this feasibility stage included:

- overtaking opportunities
- overall horizontal and vertical alignment
- impacts on vulnerable road users
- number of junctions
- number of private accesses

A summary of the comparative items reviewed has been provided in the Table 3-1.

3.2.1. Overtaking Opportunities

The 'Overtaking Opportunities' column is a measure of opportunities given to drivers to overtake. Low = Limited options / poor, Medium = Moderate options, High being over the desired amount of 50%.

The assessment of the overtaking opportunities considers the options relative to each other and the desired threshold of 50%.

3.2.2 Horizontal and Vertical Alignment

The 'Horizontal and Vertical Alignment' column is a measure of the overall proposed alignment and whether there are aspects in the proposals that may lead to conflict and difficulty for drivers such as tight curves and steep crests.

In reviewing this criterion, the audit team reviewed the expected departures and relaxations and consideration was given to the likely impact of these on overall safety.

3.2.3 VRU Impacts

The 'VRU Impacts' (Vulnerable Road User) column considers the likely impact on pedestrians and cyclists.

Pedestrian and cyclist provision are proposed within the hard shoulder on all options reviewed. Additionally, pedestrian and cyclist movements shall continue on the existing N53 as required. The red route has a school located in proximity to the proposed mainline at chainage circa 480m and may have increased vulnerable road user activity at this location compared to other options.

3.3. Route Comparison and Ranking

Table 3-1 Route Comparison table

Option	Length (m) (Online)	Overtaking Opportunities	Horiz. & Vert. Alignment	VRU Impacts	No. of Junctions	No. Private Accesses	No. Agri.al Accesses
Green	2992 (600)	East 16.6% West 18.3%	Neutral	Neutral	4	9	6
Blue	2990 (1400)	East 17.5% West 25.8%	Neutral	Neutral	4	14	6
Red	3062 (550)	East 20.7% West 20.7%	Less Preferred	Less Preferred	5	10	5
Purple Route (with alt. junction)	3340 (450)	East 18.6% West 25.9%	Neutral	Neutral	3	6	6
Brown Route (with alt. junction)	3335 (1250)	East 15.7% West 28.0%	Neutral	Neutral	4	9	7

3.3.1 Comparison of Existing Road Environment to Proposed Routes

All the proposed options represent a significant improvement to the existing N53 and a potentially significant improvement to safety on the route.

3.3.2 Ranking Options Based on Road Safety

The ranking provided in the following table represents a relative grading of the route options with respect to each other.

Table 3-2 Option Ranking

Option	Preference
Green	3
Blue	4
Red	5
Purple Route (with alt. junction)	1
Brown Route (with alt. junction)	2

4. Audit Team Statement

- 4.1. We certify that we have examined the drawings and data listed in Chapter 1 of this Report.
- 4.2. 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.
- 4.3. No one on the Audit Team has been otherwise involved with the design of the measures audited.

Road Safety Audit Team

Martin Deegan

Audit Team Leader
Road Safety Engineering Team

ATKINS

Signed:



Date: 24/09/2019

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N53 Hackballscross to Rassan

Stage F Part 2 Road Safety Audit

Louth County Council

January 2019



Notice

This document and its contents have been prepared and are intended solely for Louth County Council's information and use in relation to the N53 Hackballscross to Rassan road scheme.

Atkins 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

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 0	Draft Issue	CJP	CJP	MD	MD	29.11.2019
Rev 1	Final	CJP	CJP	MD	MD	13.01.2020

Client signoff

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1. Introduction

1.1. Background

This report describes the findings of a Stage F Part 2 Road Safety Audit associated with the N53 Hackballscross to Rassan road scheme.

The Audit has been completed by Atkins on behalf of Louth County Council.

1.2. Site Inspection

The site inspection was carried out on Wednesday 20th of November 2019 by the Audit Team.

Weather conditions during the site inspection were cool and damp with occasional heavy rainfall. Road surfaces were typically damp or wet.

1.3. The Team

The Road Safety Audit Team members were as follows:

- Team Leader: Martin Deegan BEng (Hons) MSc CEng MICE
- Team Member: Colin J Prendeville BEng (Hons) PCert (RSA) CEng MIEI, MSoRSA
- Team Observers: Daniel Pentony, CEng MIEI PGDipPM
Boris Miskovic, BEng(Hons) Msc

1.4. The Design

The following drawing was examined as part of the Stage 3 Road Safety Audit process:

Table 1-1 – Design Team Drawing List

Drawing No.	Drawing Title	Revision
WH5302-03-004	Emerging Preferred Route	-

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: Treatment of Existing N53 at Termination

Location: Western End of existing N53 chainage circa 300m

The existing N53 carriageway is wide and straight which could lead to anti-social behaviour and vehicles driving at inappropriate speeds on approach to the new cul-de-sac.

Recommendation

The Designer should consider measures to:

1. Inform drivers that they are approaching a cul-de-sac
2. Reduce speeds
3. Facilitate vehicles turning

2.2. Problem: Vulnerable Road User Provision

Location: Junction 1 – chainage circa 1350m

Vulnerable road users from the local community who live along the L7120 and wish to access various amenities in the village will have to cross the new high-speed alignment. This could lead to conflicts between vulnerable road users and general traffic.

Recommendation

The Designer should investigate the likely demand for vulnerable road users and therefore the merit of providing formal crossing facilities.

2.3. Problem: Side Road Tie-In

Location: Junction 1 - Side Road – chainage circa 1350m

The proposed road cross section appears to be wider than the existing local road. This could lead to an increase in vehicle speeds on approach to the stop line.

Recommendation

The Designer should ensure that all side road tie-ins are designed to be seamless and in character with the existing local road.

2.4. Problem: Loss of Control on Approach to Mainline

Location: Junction 2A – chainage circa 1950m

The side road approach consists of a long straight terminating in a relatively small radius curve and a priority-controlled junction. This could lead to loss-of-control type collisions. Potential also remains for approaching drivers to be confused by the possible 'see-through' to the old alignment.

Recommendation

The Designer should provide warning signage to highlight the hazards described coupled with measures to limit the 'see-through' effect such as landscaping features / vegetation.

2.5. Problem: Over-Shooting the Stop Line

Location: Junction 2B – chainage circa 1350m / old N53 Road

The side road approach consists of a long straight terminating in a relatively small radius curve and a priority-controlled junction. This could lead to drivers over-shooting the stop line.

Recommendation

The Designer should provide warning signage to highlight the hazards described.

2.6. Problem: Farm Traffic Crossing Mainline

Location: Farm Access at Chainage circa 2200

Slow moving farm traffic crossing both the proposed N53 mainline to access the existing N53 may lead to conflicts with high speed traffic leading to side-impact collisions.

Recommendation

The Designer should consider:

1. Extinguishing the mainline direct access in favour of a local road alternative
or
2. Providing an over/under bridge in lieu of an at-grade crossing

2.7. Problem: Direct Access onto Mainline Carriageway

Location: House Access in Proximity Junction 3

The proximity of the direct access to the adjacent side road could lead to driver confusion. The minor road approach serving a property to the direct access will traverse an embankment which will lead to vehicles attempting to join the mainline at slower speeds which may lead to pull-out collisions with mainline traffic.

Recommendation

The Designer should consider moving connecting the property access to the adjacent side road rather than the mainline as indicated on the drawings. A dwell area should be incorporated into the access approach road and its gradient should be minimized where constraints allow.

3. Audit Team Statement

3.1. Certification

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

3.2. Sole Purpose

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.

3.3. 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.

3.4. 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.

3.5. Road Safety Audit Team Sign-Off

Martin Deegan

Audit Team Leader
Road Safety Engineering Team

Signed:



ATKINS

Date: 29th November 2019

Colin J Prendeville

Audit Team Member
Road Safety Engineering Team

Signed:



ATKINS

Date: 29th November 2019

Daniel Pentony

Audit Team Member
Road Safety Engineering Team

Signed:



ATKINS

Date: 29th November 2019

Boris Miskovic

Audit Trainee
Road Safety Engineering Team

Signed:



ATKINS

Date: 29th November 2019

4. Designers Response

4.1. Preparing a Response 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.

4.2. Returning the Feedback Form

Please return the completed Road Safety Audit Feedback Form attached in Appendix A of this report to the following email or postal address:

Email address: martin.deegan@atkinsglobal.com

Postal address: Road Safety Engineering Team
Atkins
150 Airside Business Park
Swords
Co Dublin
K67 K5W4

Telephone: 00 353 (0)1 810 8000

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

4.3. 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.

Appendices

Appendix A. Road Safety Audit Feedback Form

Scheme: N53 Hackballscross to Rissan
Audit Stage: Stage F Part 2 Road Safety Audit
Date Audit Completed: 29th November 2019

Problem 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	-	-
2.2	yes	yes	-	-
2.3	yes	yes	-	-
2.4	yes	yes	-	-
2.5	yes	yes	-	-
2.6	no	no	There will be no crossing traffic, as no access will be provided on the north side.	
2.7	no	yes	It is proposed to close the existing house access onto the N53 and provide an access unto the side road as recommended.	-

Signed by the Designer: 

Date: 10/1/2020

Signed by the Audit Team Leader: 

Date: 13/01/2020

Colin Prendeville
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