

2.3.5 **PROBLEM**

Location: Pedestrian crossing location 2



Summary: Vegetation overhanging the west verge restricts visibility for pedestrians looking to the south when crossing at this point. This could result in pedestrians coming into conflict with vehicles approaching the Galalaw roundabout at speed.

RECOMMENDATION:

Cut back the vegetation overhanging the west verge to provide the maximum sightline for pedestrians crossing

2.3.6 **PROBLEM**

Location: Pedestrian crossing location 3



Summary: The new refuge island will be installed on a steep gradient and lies within a section of the trunk road where vehicle speeds would be expected to be high. To make drivers aware of the presence of the island particularly in poor light conditions it would be beneficial to have a beacon installed to aid visibility of pedestrians waiting at the refuge island.

RECOMMENDATION:

Install a refuge beacon at the new refuge island

2.3.7 PROBLEM

Location: Pedestrian crossing location 3



Summary: The new refuge island will not lie on the pedestrian desire line for users travelling from the east side of the trunk road. This may result in pedestrians crossing outwith the refuge island with the consequences that they could come into contact with motorised traffic turning at the two junctions.

RECOMMENDATION:

Position the new refuge island to meet the pedestrian desire line

2.3.8 **PROBLEM**

Location: Pedestrian crossing location 4



Summary: The proposed crossing point 4 is not on the desire line for users of the A7. This is likely to result in pedestrians crossing at the bell mouth of Guthrie Drive bringing them into conflict with vehicles turning at speed into the junction.

RECOMMENDATION:

Create a crossing point on the trunk road desire line incorporating a refuge island

3 Audit Team Statement

AUDIT TEAM LEADER

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Signed:

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Date: 16 August 2016

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Appendix A

List of Drawings used

Drawing No.	Revision	Title
16/SE/0801/003/100/031	P0	Location Plan/Scheme Extents
16/SE/0801/003/200/031	P0	A7 Guthrie Drive Site Clearance Plan
16/SE/0801/003/600/031	P0	A7 Guthrie Drive Earthworks Plan
16/SE/0801/003/600/032	P0	A7 Guthrie Drive Trial Hole Location Plan
16/SE/0801/003/700/031	P0	A7 Guthrie Drive General Arrangement of Surface Treatments
16/SE/0801/003/1100/031	P0	A7 Guthrie Drive Pedestrian Crossing and Footway Extension (Location 1)
16/SE/0801/003/1100/032	P0	A7 Guthrie Drive Pedestrian Crossing and Footway Extension (Location 2)
16/SE/0801/003/1100/033	P0	A7 Guthrie Drive Pedestrian Crossing and Footway Extension (Location 3)
16/SE/0801/003/1100/034	P0	A7 Guthrie Drive Kerb and Footway Detail
16/SE/0801/003/1100/035	P0	A7 Guthrie Drive Pedestrian Crossing and Footway Extension (Location 4)
16/SE/0801/003/1100/036	P0	A7 Guthrie Drive Pedestrian Refuge Island and Traffic Island Details
16/SE/0801/003/1100/037	P0	A7 Guthrie Drive Bus Stop Pedestrian Refuge Island Detail
16/Se/0801/003/1100/038	P0	A7 Guthrie Drive Pedestrian Refuge Island Location Details
16/SE/0801/003/1200/031	P0	A7 Guthrie Drive Road Markings Plan
16/SE/0801/003/1200/032	P0	A7 Guthrie Drive Sign Location Plan
16/SE/0801/003/1200/033	P0	A7 Guthrie Drive Pedestrian Crossing Warning Sign Detail - South of Guthrie Drive
16/SE/0801/003/1200/034	P0	A7 Guthrie Drive Pedestrian Crossing Warning Sign Detail - North of Guthrie Drive
16/SE/0801/003/1200/035	P0	A7 Guthrie Drive Speed Gateway Countdown Sign Detail
16/SE/0801/003/1200/036	P0	A7 Guthrie Drive Galalaw Roundabout Flag Sign

		Detail
16/SE/0801/003/1200/037	P0	A7 Guthrie Drive Keep Left Bollard Detail
16/SE/0801/003/1200/038	P0	A7 Guthrie Drive Temporary New Crossing Ahead Sign Detail - South of Guthrie Drive
16/SE/0801/003/1200/039	P0	A7 Guthrie Drive Temporary New Crossing Ahead Sign Detail - North of Guthrie Drive



Road Safety Audit Stage 2-Designer's Response **A7 Guthrie Drive Pedestrian Improvements**

RSA/16/005/RSA2 /001

August 2016



Document Control Sheet

Project Name:	A7 Guthrie Drive Pedestrian Improvements
Project Number:	RSA/16/005/RSA2
Report Title:	Road Safety Audit Stage 2-Designer's Response
Report Number:	001

Issue Status/Amendment	Prepared	Reviewed	Approved
PO	Name: <small>redacted</small> Signature: Date: 31 /8/16	Name: <small>redacted</small> Signature: Date: 31/8/16	Name: <small>redacted</small> Signature: Date: 31/8/16
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1 Introduction

1.1 Commission and Terms of Reference

- 1.1.1. This report results from a Stage 2 (Design Phase) Road Safety Audit (referred to as a Stage 2 Audit) carried out on the following scheme: installation of two new pedestrian refuge island crossings; extension of footpaths including new dropped kerbs and tactile paving; warning signs associated with the new crossings; and resurfacing works at A7 Guthrie Drive on the north side of Hawick.
- 1.1.2. The Audit was undertaken at the request of the Designer, Amey on behalf of the client Transport Scotland.
- 1.1.3. The Stage 2 Audit comprised an examination of the documents forming the Audit Brief and an inspection of the site during daylight hours. The documents forming the Audit Brief were provided by the Design Organisation and are listed in Appendix A.
- 1.1.4. The approved Audit Team membership is as follows:
- | | | |
|----------|--|--------------------------|
| redacted | BSc, MSc, C Eng, MICE | <u>Audit Team Leader</u> |
| | Amey Consulting, Edinburgh Office (Certificate of Competency in Road Safety Audit gained in November 2013) | |
| redacted | MCIHT | <u>Team Member</u> |
| | Amey Consulting, Eurocentral Office | |
- 1.1.5. A site visit was undertaken on the afternoon of Tuesday 2nd August 2016 when the weather was overcast and showery.
- 1.1.6. No other Road Safety Audit has been undertaken on the scheme.
- 1.1.7. The Terms of Reference are described in the Design Manual for Roads and Bridges document HD 19/15 'Road Safety Audit'.
- 1.1.8. The Audit Team has examined and reported only on the road safety implications of the proposed scheme as presented and has not examined or verified the compliance of the design to any other criteria. The audit has been carried out on the layout and does not comment on any other aspects of the scheme. The scheme has been examined and this report compiled only with regard to the safety implications for road users of the scheme as presented. It has not been examined or verified for compliance with any other Standards or criteria. However, in order to clearly explain a safety problem or the recommendation to resolve a problem, the Audit Team may on occasion have referred to a design standard for information only. Any audit comments should not be construed as implying that a technical audit has been undertaken in any respect.
- 1.1.9. Section 2 of this report describes the safety issues identified in the Stage 2 Audit together with recommendations for improvement to either remove or reduce the associated risk in connection with this temporary traffic management proposal.

- 1.1.10. Any recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem and in no way imply that a formal design process has been undertaken. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.
- 1.1.11. The Project Sponsor is advised of the following:
- 1.1.12. The purpose of this draft report is to allow discussion on the content between the Project Sponsor and the Audit Team Leader as required by the Design Manual for Roads and Bridges HD 19/15 Road Safety Audit standard before a final version of the report is submitted for consideration.
- 1.1.13. If any Problem or Recommendation is not accepted on submission of the final report, a signed Exception Report is to be approved by the Project Director. A copy of the signed Exception Report is to be sent to the audit Team Leader for record keeping purposes.

1.2 Purpose of the Highway Scheme

- 1.2.1 The scheme is located on the A7 between the Galalaw Roundabout and 300m south of Guthrie Drive, on the northern approach to Hawick.
- 1.2.2 To cater for pedestrian movements across the A7 at this point a number of crossing points are being either establish or enhanced. Refuge islands are being introduced along with tactile paving and resurfacing of part of the carriageway and footways. No Departures have been approved for the scheme.

KEY PERSONNEL

Design Organisation - Amey

Design Team Leader - ^{redacted}

2 Items Raised at This Stage 2 Audit

Design Change

Following comments raised as part of the departure from standards process for the installation of pedestrian refuge islands, the southern crossing (located to the south of Guthrie Drive) has been removed from the scheme in order to promote the use of the wider northern refuge crossing.

2.1 General

2.1.1 PROBLEM

Location: A7 between Guthrie Drive and B6359 Junctions

Summary: Drawing 0700/031 shows areas of new surfacing with differing properties (PSV values) over the width of the carriageway. This could result in vehicles having different levels of grip to the wheels during poor weather conditions depending upon the manoeuvre being undertaken with the potential for loss of control.

RECOMMENDATION:

Ensure that the carriageway surface has consistent properties over the full width of the carriageway

DESIGN TEAM RESPONSE

Agreed – Resurfacing design has been modified to have consistent surface properties across full width of carriageway and along full length of scheme.

2.2 Junctions

2.2.1 PROBLEM

Location: Pedestrian crossing location 3



Summary: There is clear evidence of vehicles overrunning the existing central hatching when turning right into the B6359 road. The scheme will introduce a refuge island where the markings currently exist resulting in the potential of it being stuck by vehicles.

RECOMMENDATION:

Ensure that the central hatched markings reflect vehicle swept paths and the stacking length required for the two side road junctions

DESIGN TEAM RESPONSE

Agreed – A traffic survey was undertaken during the peak hour between 08:30 and 09:30, at the start of August term time, to observe traffic volume and maximum queuing on both turning lanes. It was observed that traffic turning into both minor roads was able to turn with relative ease as there were sufficient gaps in mainline traffic. The maximum observed queue was 3 vehicles long and therefore the installation of an island within central hatching will not present an issue with vehicle stacking.

The design for pedestrian refuges includes advanced warning, reboundable keep left bollards and will now include lighting beacons following RSA recommendations. Therefore this will provide drivers with adequate warning about the presence of the new refuge islands and will reduce the risk of vehicle strikes.

2.2.2 PROBLEM

Location: Pedestrian crossing location 2

Summary: Drawing 1200/031 shows varying lane widths on the approach to the Galalaw roundabout which could result in vehicles coming into contact.

RECOMMENDATION:

Ensure that the lane widths are of a consistent width

DESIGN TEAM RESPONSE

Agreed – Drawing has been updated to reflect comments

2.3 Non-Motorised User Provision

2.3.1 PROBLEM

Location: Pedestrian crossing location 1

Summary: Drawing 1100/031 shows the tactile paving will be of different widths over the new crossing point, it is shown as 1.838m wide at the kerb edge and 2m within the refuge island. To avoid confusion for visually impaired users of the crossing facility the paving widths should be consistent.

RECOMMENDATION:

Ensure that the width of the tactile paving is consistent over the crossing

DESIGN TEAM RESPONSE

Agreed – Width of central refuge has been reduced to 1.82m to match width of drop crossing facilities on footpaths.

2.3.2 PROBLEM

Location: Pedestrian crossing location 1

Summary: Drawing 1100/036 shows the refuge island layout with the tactile paving in line with the edge of the new physical island. This could result in pedestrians with visual impairments stopping in close proximity to live traffic with the risk of them being struck.

RECOMMENDATION:

Set back the edge of the tactile paving from the face of the new refuge island

DESIGN TEAM RESPONSE

Pre-fabricated pedestrian island has been removed from design to accommodate lighting beacons. New design fully highlights required tactile setback

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2.3.3 **PROBLEM**

Location: Pedestrian crossing location 1

Summary: The new refuge island will be installed on a steep gradient and lies within a section of the trunk road where vehicle speeds would be expected to be high. To make drivers more aware of the presence of the island particularly in poor lighting conditions it would be beneficial to have a beacon installed to aid visibility of pedestrians waiting at the refuge island.

RECOMMENDATION:

Install a refuge beacon at the new refuge island

DESIGN TEAM RESPONSE

Agreed – The installation of 2 new lighting beacons have been incorporated into the designs for pedestrian refuges.

2.3.4 **PROBLEM**

Location: Pedestrian crossing location 2



Summary: The surface of the western footway at crossing point 2 is uneven and presents a trip hazard for users. To effectively remove this hazard and ensure that the footway has a consistent gradient the existing manhole could be lowered to avoid issues for the mobility impaired.

RECOMMENDATION:

Reduce the level of the existing manhole so that a consistent surface level is provided

DESIGN TEAM RESPONSE

Agreed – Upon further inspection the footpath surrounding the manhole chamber can be reprofiled to remove the trip hazard



2.3.5 **PROBLEM**

Location: Pedestrian crossing location 2



Summary: Vegetation overhanging the west verge restricts visibility for pedestrians looking to the south when crossing at this point. This could result in pedestrians coming into conflict with vehicles approaching the Galalaw roundabout at speed.

RECOMMENDATION:

Cut back the vegetation overhanging the west verge to provide the maximum sightline for pedestrians crossing

DESIGN TEAM RESPONSE

Agreed – This will be passed onto route engineer in to be incorporated into routine maintenance works

2.3.6 **PROBLEM**

Location: Pedestrian crossing location 3



Summary: The new refuge island will be installed on a steep gradient and lies within a section of the trunk road where vehicle speeds would be expected to be high. To make drivers aware of the presence of the island particularly in poor light conditions it would be beneficial to have a beacon installed to aid visibility of pedestrians waiting at the refuge island.

RECOMMENDATION:

Install a refuge beacon at the new refuge island

DESIGN TEAM RESPONSE

Agreed – The installation of 2 new lighting beacons have been incorporated into the designs for pedestrian refuges.

2.3.7 **PROBLEM**

Location: Pedestrian crossing location 3



Summary: The new refuge island will not lie on the pedestrian desire line for users travelling from the east side of the trunk road. This may result in pedestrians crossing outwith the refuge island with the consequences that they could come into contact with motorised traffic turning at the two junctions.

RECOMMENDATION:

Position the new refuge island to meet the pedestrian desire line

DESIGN TEAM RESPONSE

Agreed – The positioning of the refuge has been modified to better meet the desire line for pedestrians using the bus stops, and allows for it to be fully contained within the existing hatched area. The footpath at the back of the east crossing will be reprofiled to meet the new crossing location.

Pedestrians will have the option of crossing at two locations approximately 100m apart. This will meet the desire lines of pedestrians and provide safer crossing opportunities for all NMUs and vulnerable pedestrians, using either bus stop or travelling from the east towards Hawick and Guthrie Drive.

2.3.8 **PROBLEM**

Location: Pedestrian crossing location 4



Summary: The proposed crossing point 4 is not on the desire line for users of the A7. This is likely to result in pedestrians crossing at the bell mouth of Guthrie Drive bringing them into conflict with vehicles turning at speed into the junction.

RECOMMENDATION:

Create a crossing point on the trunk road desire line incorporating a refuge island

DESIGN TEAM RESPONSE

Disagree –

A crossing located at the bell mouth of the junction, assuming a straight line between footpaths, would require pedestrians to cross approximately 35m of carriageway (kerb to kerb). This would result in pedestrians coming into close proximity to traffic travelling on the mainline with a speed limit of 60mph, and entering Guthrie Drive at speed due to the generous bend and carriageway width.

At the proposed location, a crossing will meet the needs of users travelling to/from the Guthrie Drive area. Whilst this location may not be on the exact desire line for pedestrians travelling alongside the A7 northbound carriageway, the location has been selected based on criteria outlined in Transport Scotland design standards and DMRB (Volume 6, Section 2, Part 6 TD42/95 paragraph 5.15) which states "*Defined at-grade pedestrian crossing points on the minor road should be a minimum of 15m back from the "Give Way" line, and should be sited so as to reduce to a minimum the width to be crossed by pedestrians provided they are not involved in excessive detours from their desired paths.*" This would result in a deviation of approximately 20m from the auditor's desire line, which is not considered to be excessive.

A drawing of the proposed crossing and images of the existing crossing is contained within Appendix B.

Appendix A

List of Drawings used

Drawing No.	Revision	Title
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Appendix B

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