SCOTTISH TRUNK ROAD NETWORK MANAGEMENT CONTRACT SOUTH EAST UNIT

A702 HILLEND JUNCTION

INSTALLATION OF TRAFFIC SIGNAL

ROAD SAFETY AUDIT RESPONSE REPORT

STAGE: 3

ROAD SAFETY AUDIT

SCHEME ID: 22-SE-0801-58

AUDIT REF NO: RSA-A702-009

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Project: **A702 at A703 Hillend Junction**

Report Title: **RSA-A702-009-Stage 3 Response Report**

PREPARED BY:

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Position: Design Team Leader

Signed: 11(2)

Organisation: **BEAR Scotland**

Date: **30/06/25**

APPROVED BY:

Name: 11(2)

Position: Overseeing Organisation Representative

Signed: 11(2)

Organisation: **Transport Scotland**

Date: **2/7/2025**

Project details

Provide:

Table 1 Project details

Report title:	RSA-A702-009-Stage 3 Response Report
Date:	30/06/25
Document reference and revision:	RSA-A702-009-Stage 3 Response Report Rev 0
Prepared by:	Ian Garner
On behalf of:	Transport Scotland

Introduction

The scheme involved the installation of new traffic signals at the junction known as Hillend Junction. This is the junction on the A702 which links the A702 to the A703 and Old Pentland Road

The trunk and side roads at junction are single carriageways that are subject to a 40mph speed limit and are lit. The junction sits in the settlement of Damhead, just south of Edinburgh. There are numerous residential properties located close to the junction.

The stage 3 RSA was undertaken on Thursday 3rd April 2025, this was done during light and dark conditions included the evening peak hours, between 15:00 to 17:45 and 20:30 to 20:45.

The report was compiled by 11(2) and was assisted by 11(2) .

Key personnel

Provide:

Table 2 Key personnel

Overseeing Organisation:	11(2) – Transport Scotland
RSA team:	11(2) - BEAR Scotland NW Unit
Design Organisation:	11(2) - BEAR Scotland SE Unit

Road safety audit decision log

Insert RSA decision log. This can be a spreadsheet appended to the RSA response report. Note: The decision log supersedes and replaces the exception report presented as part of the previous standard.

Table 3 Road safety audit decision log

RSA Problem from original Stage 3 Audit	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
Location B: A702 northbound approach to proposed signals. Summary: Inadequate forward visibility to signals increases risk of shunts on approach. Stage 3 comments Despite the installation of traffic signal warning signs on the A702 northbound approach to the junction, it was evident on a drive through of the site during the Stage 3 RSA site visit that the nearside signal head cannot be clearly seen by approaching drivers until they are very close to this, as shown below. Should the offside secondary signal head be blocked by large vehicles travelling in the opposite direction, this situation may leave a northbound driver with very little time to react to a red signal, potentially introducing the need to brake sharply and increasing of risk of a following vehicle colliding with them. This may result in injuries to the occupant of the vehicles involved.	**It is recommended that further measures to highlight the status of the signals to A702 northbound drivers over an appropriate distance in advance of these are installed. These could include, but are not limited to, the installation of a high-level signal head on the secondary (offside) signal pole.**	Agree with RSA – additional heads to be arranged	Agree	Additional high level signal heads to be installed.
Location A: Proposed signals stop line on Old Pentland Road Summary: Lack of carriageway width increases risk of vehicle turning right from A702(N) colliding with vehicles waiting at stop line on Old Pentland Road. Stage 3 comments Whilst not witnessed during the site visit, it has been reported by the local Community Council that vehicles entering Old Pentland Road from the A702 are encroaching into the advanced cycle dwell area whilst undertaking this movement. This situation may result in a stationary cyclist positioned within this dwell area being struck and injured by a right-turning vehicle.	**It is recommended that the current stop-line configuration is altered to remove the risk of a cyclist being struck by a right-turning vehicle whist sitting in the advance dwell area.**	Using the data from the journey time survey no HGV's made that turn and it has not been reported as a problem. The only vehicles which make that manoeuvre are cars and LGV's, therefore an auto track/Auto turn was completed using a LGV which was able to make the turn without going over the cycle box. Further, if the stop line is moved further back this would cause further delays and require programming of the lights to allow for extra inter-green times to allow vehicles from Old Pentland Road to move through the junction. If this becomes an issue after the second Journey time survey the cycle box could be halved instead to push cyclist closer to the nearside to reduced conflict	Agree – monitor the position from journey time survey	Continue to monitor impact on journey times and opportunity to reposition if required.

RSA Problem from original Stage 3 Audit	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
PROBLEM B3.1 Location: All approaches to proposed signal-controlled junction. Summary: Increased risk of rear-end-shunt type collisions involving vehicles colliding with stationary traffic Stage 3 comments THE RSA Team understands that there have been recorded instances of extensive queuing on the A702 northbound approach to the junction since the signals have been installed. These have been occurring during the morning traffic peak, between 07:30am and 08:30am. Whilst such queuing was not witnessed during the site visits (as these occurred during the PM traffic peak and in the evening), the Google Maps screenshot shown below appears to reflect the long queue lengths. The RSA Team has been advised that signal timings have been altered since installation to reduce the A702 northbound queue lengths (and others) as much as possible. However, the RSA Team are still concerned that this queue may extend periodically beyond the installed queue warning sign shown below on this high-speed approach. Such a situation may increase the risk of vehicle approaching stationary vehicles at an inappropriately high speeds as they may unaware of the potential for queuing traffic. This may increase the likelihood of them colliding with the back of the queue, resulting in injuries to the occupants of the vehicles involved. In addition, whilst a queue warning sign has been installed on this approach, the horizontal geometry of the A702 between the sign and the junction includes sharp bends that severely limit forward visibility. Consequently, despite the presence of the warning sign, drivers may have very little reaction time to stop when confronted by stationary traffic around these bends and therefore there is still a heightened risk of rear-end shunt type collisions occurring in this area.	It is recommended that measures to warn approaching A702 northbound vehicles of the potential for stationary vehicle are installed in advance of the observed queue lengths. It is also recommended that measures to dynamically warn drivers of the presence and extent of stationary/slow-moving traffic is provided at locations within the anticipated queuing area where forward visibility is severely limited. In addition, means to simplify the junction operation in order to minimise queue lengths on all approaches should be investigated.	Since the commissioning of the traffic lights at the junction there has been good progress with the timings of the lights which now show the junction to be flowing at a good rate without the major queuing which was noted when they were first activated. For installing Vehicle Activated Signs it would be better to wait to see if there is a problem in the future, at this time when the traffic is high there is a constant flow of traffic which is nose to tail. If it is busy, you would be traveling slowly and likely not be surprised by a queue as you go around the corner and, when it is quiet, that issue should not occur unless you are travelling above the prescribed speed limit. Further the installation of VAS at this location without evidence of a proven issue could dilute the effectiveness of VAS at different locations which may require them more than in this area. There are also the significant cost implications, along with a potential requirement to add an additional power supply to the site.	Agree	Further consideration of additional measures to be monitored and revisited on completion of after journey time surveys, including Queue length surveys.

RSA Problem from original Stage 3 Audit	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
Location: All approaches to proposed traffic signals Summary: Vegetation reducing visibility to signals increase the risk shunts, side impact and head on collisions. On all approaches to the proposed signalised junction there is significant foliage and vegetation growth. This may reduce visibility to the proposed signals and any signing associated with it. Reduction in visibility to these items will reduce driver awareness of the junction type and layout and increase the risk of various collision types at, and on approach to the junction. Stage 3 comments There are numerous locations throughout the site where signs and/or signal heads are masked by shrubbery, the visual impact of which will increase are the vegetation blooms in the coming months. This restriction in visibility may reduce drivers' awareness of the junction type and layout, increasing the risk of rear-end shunt type collisions, due to sudden/erratic braking and/or side-on collisions that may result if a vehicle travels through a red signal. In all cases, this may result in injuries to the occupants of the vehicles involved.	It is recommended that vegetation be removed as required to provide adequate visibility to all new signs and signals.	This area has now been included within the cyclic maintenance, and the hedges will be cut back as required throughout the growing season. However, to manage the vegetation better it is recommended that land purchase is undertaken, and investigation into removing the trees. This will remove the need for ongoing maintenance and reduce the risk of the maintenance teams being on the road and closing the road for future vegetation removal.	Agree. Include for out of cyclic cutting where required to maintain visibility of signal heads.	Vegetation clearance to be included within cyclic maintenance, along with any appropriate cutting. Investigation into land purchase and tree removal to be undertaken.

RSA Problem from Stage 3 Audit	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
PROBLEM St 3 RSA - B3.1 Location: A702 northbound and A703 direct approaches to the signalised junction Summary: Increased risk of rear-end shunt or side-on/head-on collisions due to driver confusion caused by multiple signal heads being visible. On both approaches the signals heads from other legs are visible to approaching drivers, as shown in Figure 1 and Figure 2 below. This may confuse drivers, potentially resulting in them mistakenly driving through a red signal and colliding with other vehicles or realising that they should stop at a late stage and braking sharply, increasing the risk of them struck from behind by following traffic. In both situations, injuries may be sustained by the occupants of the vehicles involved.	It is recommended that measures are installed to ensure that drivers approaching the junction cannot see the signal heads associated with other legs.	Agreed we will install Louvres to reduce light from the A703 traffic heads	Agree	Louvres to be added
PROBLEM St 3 RSA - B3.2 Location: A702 build-out between the junction mouths of Old Pentland Road and the A703. Summary: Risk of a driver colliding with the buildout and losing control as they travel from the A702 southbound to the A703. This buildout acted historically as a separation between the A703 and Old Pentland Road junction mouths as shown in Figure 3. Historically, give-way lines from each junction would have run from this build-out across both junctions to meet the A702 channel to the north and south, defining the edge of the trunk road. However, as these give-ways are no longer present, this definition is diminished and consequently southbound A702 drivers turning left into the A703 may miss the presence of this buildout and attempt to travel straight into the side road (Figure 4). This may lead to them colliding with the build-out and losing control, which may result in injuries to themselves and/or nearby pedestrians, cyclist, or other car occupants they may subsequently strike.	It is recommended that measures to greater highlight the presence of this build-out are installed.	Agree with the auditor, install new admiral bollards at the junction with updated reflectivity to highlight the build out.	Agree	Bollards to be installed

Design Organisation and Overseeing Organisation statements

Table 4 Design Organisation statement

On behalf of the Design Organisation I certify that: **1) the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation.**	
Name:	11(2)
Signed:	11(2)
Position:	Engineer
Organisation:	BEAR Scotland
Date:	30/06/25

Table 5 Overseeing Organisation statement

On behalf of the Overseeing Organisation I certify that: **1) the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the design organisation; and 2) the agreed RSA actions will be progressed.**	
Name:	11(2)
Signed:	11(2)
Position:	Road Safety Manager
Organisation:	Transport Scotland
Date:	2/7/25