

A14 Cambridge to Huntingdon Improvement Scheme

Bar Hill Junction

Stage 3 Road Safety Audit

A14 Cambridge to Huntingdon Improvement Scheme: Bar Hill Junction

Stage 3 Road Safety Audit 406395DS-TPN-ITD-117-A

October 2020

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Prepared for:
Highways England
Woodlands
Manton Lane,
Bedford MK41 7LW

Prepared by:
Mott MacDonald Sweco JV
Stoneham Place
Stoneham Lane
Southampton SO50 9NW
T: +44 (0) 23 8062 8800

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1 Introduction

This report is a Stage 3 Road Safety Audit undertaken on the completed works associated with Bar Hill Junction, which is located within Section 4 of the A14 Cambridge to Huntingdon Improvement Scheme. The proposed work comprises existing road improvements including widening, offline construction and traffic signal improvements.

The audit has been carried out at the request of the Design Organisation (A14 Integrated Delivery Team) and the Overseeing Organisation (Highways England).

The Road Safety Audit Team membership, approved by [REDACTED] from the Overseeing Organisation, was as follows:

The Road Safety Audit Team consisted of:

[REDACTED] BEng (Hons), CEng, MICE, FCIHT, MSoRSA
Audit Team Leader, Mott MacDonald

[REDACTED] MCIHT, MSoRSA
Audit Team Member, Mott MacDonald

[REDACTED] Audit Team Observer, Cambridgeshire County Council

The Road Safety Audit took place at the Southampton office of Mott MacDonald Sweco Joint Venture (MMSJV) in October 2020. The audit has been undertaken in accordance with the Road Safety Audit Brief and comprised an examination of the information provided in the documents and drawings, which are listed in **Appendix A**.

In-line with the UK Government and Highways England protocols put in place as a result of the current Covid-19 pandemic, the Audit Team visited the site of the works on Wednesday 21/10/2020 between 16:00hrs and 19:30hrs to observe the works in both daylight and darkness conditions. Video recording of the site visit was undertaken from one of the vehicles. During the site visits the weather conditions were overcast with rain showers and the road surface was wet.

A representative from Cambridgeshire Police was invited to the site visit but was unable to attend.

At the time of the audit site visit there were a number of elements that were incomplete. The Audit Team noted the following on site:

- The new A14 westbound SLTL was operational – however, TM signs (such as speed limits and ‘give way’) were still in place;
- The NMU route (a permissive bridleway) connecting with Saxon Way on the south-west side of the interchange was open / accessible to users, but works were incomplete. There was unfinished edging / verges, mud, debris and detritus present at various locations throughout the route and a vehicle protection track in place across the route, and;
- On the B1050, north of the traffic signals towards Northstowe, there were works still in progress, resulting in two-way running on one carriageway.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the Audit Team accept no responsibility for the design or construction of the scheme.

All problems and recommendations are referenced to the detailed design drawings and the locations have been indicated on the plans, in **Appendix B**.

All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. A Road Safety Audit Response Report should be produced collaboratively by the Design Organisation and the Overseeing Organisation and kept on file for future reference.

Scheme description

The A14 Cambridge to Huntingdon Improvement Scheme is located in the East of England and falls within the Area 8 maintenance area and the East of England Regional Control Centre (RCC). It involves the improvement and upgrading of a 34km length of the strategic highway network between Cambridge and Huntingdon running from the Alconbury Junction on the A1 to Junction 33 of the A14 near Milton.

The scheme is separated into six distinct sections; however, these are not separate works packages. Timescales for completion of each section vary, as do individual work elements within each section. Section 4 is detailed overleaf:

Section 4: Bar Hill Junction

The Bar Hill Junction improvement proposal incorporates a grade-separated elongated roundabout connected to the A14 through merging/diverging slip roads and connected to existing B1050 highway. The B1050 longitudinal profile is raised to match the new roundabout levels. As part of Bar Hill Junction improvement there is construction of a Local Access Road (LAR) running parallel to the A14 and crossing the B1050 via a new structure. This LAR takes local traffic away from the A14 and removes a number of connections to the mainline A14 to improve safety and throughflow. A separate bridge for non-motorised users (NMU) will be provided to allow them to cross the A14 away from motorised traffic. This will link to the footway/cycleway alongside the new local access road to the north of the A14 heading east towards Cambridge or west to Swavesey junction. The junction at Bar Hill will be designed to accommodate the increase in traffic, which is forecast as a result of the Northstowe development.

The original detailed design of Bar Hill Junction was completed in 2016 and has been through a previous Stage 2 RSA, with designers' responses defined and addressed. However, the traffic signal design for the LAR link road ('jug handle') was not included at the time.

Link Road (Jug Handle)

The final Bar Hill junction configuration includes a 200m long link road to connect the B1050 and the LAR through a fully signalised at-grade junction.

Permanent traffic signals will be constructed at both ends of the jug handle. There will be dedicated turning lanes along the B1050 on the north and south sides, with 2 lanes on the jug handle (increasing to 3 once the junction is complete) for drivers to wait at the traffic lights. The traffic signals will create an opportunity for safer turning manoeuvres on and off the jug handle.

The Stage 3 audit process aims to cover the Bar Hill Interchange works in its entirety. The extents of the completed scheme for this RSA3 audit comprise:

- The Bar Hill Roundabout (junction with Saxon Way);
- Link between Bar Hill Roundabout and Bar Hill Interchange (Bar Hill east and west bridges) and SLTLs onto A14 westbound and eastbound carriageways;
- B1050 north of the Bar Hill Interchange (to the access for New Close Farm);
- A1307 east and west approached to the traffic signal junction at Bar Hill;
- Jug handle link between A1307 and B1050;
- NMU routes, north and south of the A14 including Bar Hill NMU bridge, on the eastern side of the interchange; and
- A new NMU route (permissive bridleway) on the south-west side of the interchange.

Departures and relaxations from standard

No Design Strategy Records have been produced for this scheme.

Details of all approved and planned Departures and Relaxations from Standards are provided in HA528983-ACJV-GEN-SG_DFSTRACK-SH-C-0001.

Departures from Standard considered relevant or specific to this audit have not been listed in RSA Brief.

Design detail

The design detail for the scheme is detailed in the tables below and overleaf, which were taken directly from the RSA Brief:

Design speeds

<i>Section</i>	<i>Design Speed</i>
<i>A14 and A1 Mainline</i>	<i>120kph</i>
<i>Slip Roads</i>	<i>70kph</i>
<i>Interchange Links</i>	<i>85kph</i>

Mainline Cross Sections

	Section	Cross Section	Variation from TD27/05
A14 Mainline	Ch20000-24400	D2AP	N/A
	Ch24400-44000 and Ch 53800-57700	D3AP	Central reserve width 3.0m Nearside hard strip width of 0.5m Verge width reduced from 2.5m to 1.2m on River Great Ouse Viaduct (see note 2 below)
	Ch44000-46500	D4AP	Central reserve width 3.0m (see note 1 below)
A1 Mainline		D3AP	N/A

Notes

1. At overbridges with a central pier a verge width of 3.6m is needed to provide setbacks of 1.2m and a pier width of 1.2m.
2. Departure obtained for DCO proposal.

A14 Junction Types

Junction Name	Slip-road/ Interchange link	Junction Type	Slip-road Cross Section	Notes
Bar Hill Junction	Eastbound Diverge	A	DG1C	
	Westbound Merge	C	MG1C	
	Westbound Diverge	D (Option 1)	DG2E	
	Eastbound Merge	F (Option 1)	MG2E	

Side Roads

<i>DIS Appendix C Table Ref</i>	<i>Road Cross Section Details Carriageway Section</i>	<i>Road Type (TD27)</i>	<i>Design Speed (kph)</i>	<i>Carriageway Width (m)</i>	<i>C/R Width (m) *1</i>	<i>Hard-strip Width (m)</i>	<i>Min Verge Width (m) *2</i>	<i>NMU route *3</i>
A15	Section B: Swavesey Junction to Bar Hill Junction	S2	100	7.3	N/A	1.0	5.6 (N) 2.5 (S)	Yes-North side
A19	Swavesey Junction (link between northern dumbbell roundabout and roundabout on Bucking Way Road)	S2	85	7.3	N/A	1.0	5.6 (N) 2.5 (S)	Yes-North side
A20	Swavesey Junction (overbridge)	S2+1	70	NB 7.0 SB 3.5	N/A	1.0	2.5 (W) 2.5 (E)	None-Separate NMU bridge provided
A21	Swavesey Junction (Cambridge Services Link)	S2	85	7.3	N/A	1.0	2.5 (N) 2.5 (S)	None-Separate NMU bridge provided
A22	Bar Hill Junction LAR Link	S2	50	7.3	N/A	1.0	2.5 (W) 2.5 (E)	Yes-East side at base of embankment

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A23	Bar Hill Junction B1050 Hattons Road -South of LAR	D2AP	85	7.3	4.5	1.0	2.5 (O/V) 2.5 (E)	None- Separate NMU bridge provided
A24	Bar Hill Junction B1050 Hattons Road -North of LAR	D2AP	85	7.3	4.5	1.0	2.5 (W) 2.5 (E)	Yes- East side at base of embankm ent
A25	Bar Hill Junction (B1050 link to existing roundabout)	S2+2	60	NB 7.3 SB 7.3	N/A	None(as NMU route provided)	2.5 (O/V) 2.5 (E)	None - Separate NMU bridge provided

Notes

1. C/R width;
 - a. Central reserve width includes off-side hard-strips
 - b. Narrow central reserve minimum width is subject to visibility requirements and widening at structures if required.
2. Verge width;
 - a. N=North verge, S=South Verge, W=West Verge, E=East Verge.
 - b. Verge width quoted is total width of verge (but exclusive of any hard strips). For details of NMU path widths, segregation from carriageway refer to separate schedule
3. Widths on bridges are reduced subject to providing 1.2m minimum setback (unless otherwise noted) to the parapet and 0.5m minimum for edge shyness beyond rear of any NMU route

Factors affecting road safety

The RSA Brief has specified the following with respect to factors which may affect road safety:

“All factors were identified in the original Stage 2 Road Safety Audit undertaken in 2017 and discussed within the Designer’s Responses.”

Strategic Decisions – Items Outside the Scope of this Audit

A strategic decision has been made for the mainline scheme to be a dual three improvement with a section of dual four improvements between Bar Hill and Girton. Along the rural sections of the scheme however there is currently no justification for dual four improvements.

Additionally, horizontal and vertical alignment changes are restricted by the Limit of Deviation allowed by the Development Consent Order. This is a maximum vertical deviation of 0.5m upwards or downwards.

2 Previous Road Safety Audits

It is understood that the following Road Safety Audits have been previously undertaken on the constructed elements of this scheme:

2.1 Stage 1 Audit

The scope of the Stage 1 Road Safety Audit included the area between A14 Fen Drayton and Girton Interchange (referred to at the time as 'Section 2') and are recorded in the Stage 1 Road Safety Audit report (Document Ref. 264223GU/ITD/ITQ/161 Revision 003).

A Designers Response report to the Stage 1 Audit was provided by Arup in October 2014 (Document reference: A14-ARP-H0-E2-RP-C-00002).

2.2 Stage 2 Audits

Section 4 was subjected to a Stage 2 Audit in April 2017, which included some of the proposed works at Bar Hill. The following RSA2, Designers Response and Exception Reports were conducted in accordance with DMRB HD19/15:

- Section 4, RSA2 (Document reference: 264223LF-TPN-ITD-300-Rev-002), April 2017. 72 issues were identified – nine of these items were related to the scheme at Bar Hill.
- Section 4 – Stage 2 RSA Designer's Response report (HA528983-ACJV-HGN-S4_RSA2-RP-C-0003_P01.2.), December 2019.
- Section 4 – RSA2 Exception Report (No document reference), January 2019. This contained one exception to the RSA2 audit finding at Bar Hill (Problem S4.049).

The original detailed design of Bar Hill Junction was completed in 2016 and has been subject to the previous Stage 2 RSA process, detailed above. It is understood that all of the designer's responses were defined and addressed.

However, the traffic signal design for Local Access Road (LAR) link road ('jug handle') was not included at the time. Therefore, a separate Stage 2 RSA was undertaken on these elements of the scheme (in accordance with DMRB GG 119).

The following documents were produced for the RSA2 undertaken at Bar Hill / Jug Handle link (and traffic signal junction):

- Bar Hill Junction Traffic Signals, RSA2 (Document reference: 406395CC-TPN-ITD-065-B), February 2020. Seven issues were identified, and one of these was not accepted by the Design Organisation.
- RSA2 Bar Hill Jug Handle Designer's Response (Document reference: HA528983-ACJV-HGN-S4_RSA2_JUG-RP-C-0001_P02), August 2020.

2.2 Interim Stage 3 Audit

An Interim Stage 3 RSA was conducted by MMSJV in August 2020 (Document reference: 406395DJ-TPN-ITD-106-A_Rev 001). The scope of the audit covered the Bar Hill Interchange works in its entirety and **19 problems** were identified.

A Road Safety Audit Response Report to the Stage 3 Audit was provided by the A14 IDT in September 2020 (Document reference: HA528983-ACJV-HGN-S4_IRSA3-RP-C-0005 P02).

A summary of the actions relating to the problems identified in the previous iRSA3 report is provided in **Table 1** overleaf.

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Table 1: Items raised at the previous Interim Stage 3 Road Safety Audit

Ref	iRSA3 Location and Problem	iRSA3 Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action	Audit Team comment at RSA3
Problem 001	Approach to Bar Hill NMU bridge, northern side. There are raised service covers (2 no.) within the NMU route between Bar Hill and the LAR, to the north of the A14. These may present a risk to NMUs (cyclists in particular) who may become injured from trips, falls or become unseated.	It is recommended that the surface level of these covers / the surface course is adjusted to suit.	Agreed This is considered a Construction defect and should be added to the DOWLs list.	OO agree Designers Response	OO to add to DOWLs list.	No further comments at RSA3 Corrective actions appeared to have been taken– these were observed during the RSA3 site inspection.
Problem 002	Bar Hill NMU bridge, southern side. There are no measures in place to slow cyclists, in particular descending the NMU route (on both sides of the NMU bridge), particularly those descending southwards on the southern side. This has the potential for an increased risk of conflicts between other NMUs (pedestrians) on the route.	It is recommended that additional measures to slow cyclists, such as signing, lining and / or chicanes (or similar) are provided on the downhill grades from the NMU bridge.	Agreed This issue has been raised in a previous RSA for the ramps associated with the NMU bridge at Swavesey. The solutions proposed in that RSA [but yet to be verified by the IDT or CCC] comprised the following changes to encourage users to maintain safe speeds: - <input type="checkbox"/> Staggered hoop barriers [demountable to facilitate maintenance vehicle access to the bridge abutments. <input type="checkbox"/> "SLOW" road markings installed on downhill approach to the staggered hoops <input type="checkbox"/> Pedestrian guardrail to prevent direct access for the ramps onto the highway. and highway. The design of the staggered hoop barriers should take into consideration accessibility of equestrians.	OO agree Designers Response	Designer to review with IDT/CCC options to minimise cycle speeds on the ramps and amend IFC documentation as necessary.	The action has not been completed. Remedial measures had not been installed / were not evident during the RSA3 site visit.
Problem 003	Bar Hill NMU bridge, southern side. NMUs (cyclists in particular) may be at risk of falling down the offside embankment / slope located between the shared-use route and the roundabout at the southern	It is recommended that the fencing at this location is extended on the western side, between the roundabout and the NMU route.	Agreed The Designer needs to review the hazards present and extent of fencing.	OO agree Designers Response	Designer to review IFC documentation and amend as necessary.	The action has not been completed. Remedial measures had not been installed / were not evident during the RSA3 site visit.

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	<i>termination of the timber fencing.</i>					
<i>Problem 004</i>	<i>Saxon Way, eastbound approach to roundabout. On Saxon Way, eastbound approach to the roundabout, the (local) map-type ADS is obscured by vegetation and the lane arrow markings on the carriageway are faded / worn. This has the potential to increase the likelihood of shunt type / overshoot collisions at the roundabout, particularly at night or in poor weather conditions.</i>	<i>It is recommended that the vegetation is cut back, and that existing road markings are refreshed where necessary.</i>	<i>Agreed This is an existing sign. Due changes to the layout of the roundabout it is, according to the IFC documentation, to be replaced. It is considered that this should be added to the DOWLS list.</i>	<i>OO agree Designers Response</i>	<i>OO to raise a DOWL for signs yet to be installed.</i>	<i>The action has not been completed. The existing sign was in-situ during the RSA3 site visit. A new / replacement map-type ADS has been provided, but this was also obscured by overhanging vegetation. This issue is raised at Problem 001 in this RSA3 report.</i>
<i>Problem 005</i>	<i>Saxon Way, eastbound approach to roundabout. On the eastbound approach to Saxon Way roundabout, there is a maintenance access to the substation on the northern side. This is obscured by overgrown / low hanging trees and may make it difficult for maintenance operatives to manoeuvre from this junction safely and could increase the risk of side impact collisions.</i>	<i>It is recommended that appropriate vegetation clearance is undertaken to improve the sight lines at this junction.</i>	<i>Agreed This is an existing access. The Designer considers that as the scheme contains no changes to the road layout or infrastructure on the approach to this access this issue should be referred to the maintaining Highway Authority [Cambridgeshire County Council] for resolution</i>	<i>OO agree Designers Response</i>	<i>OO to advise CCC.</i>	<i>The action has not been completed. Remedial measures had not been installed / were not evident during the RSA3 site visit.</i>
<i>Problem 006</i>	<i>Saxon Way, uncontrolled crossing point at the roundabout. A formalised, uncontrolled, crossing point has been provided for (north-south) NMU movements across Saxon Way. Users from the northern side are expected to cross two traffic lanes in order to reach a central refuge island. The crossing is situated within a derestricted speed limit.</i>	<i>It is recommended that the nearside vegetation on approach to the roundabout is cut back to improve inter-visibility between NMUs and approaching motor traffic. Furthermore, warning signs to highlight the presence of NMUs (cyclists in particular) crossing at this location would be of benefit provided.</i>	<i>Agreed The Designer is currently in discussions with CCC regarding this layout.</i>	<i>OO agree Designers Response</i>	<i>Designer to conclude discussions with CCC and amend IFC documentation as necessary.</i>	<i>The action has not been completed. Remedial measures had not been installed / were not evident during the RSA3 site visit.</i>

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	<p>The Audit Team is of the opinion that the inter-visibility (between eastbound traffic and NMUs) at this location is reduced because of overgrown vegetation, exacerbated by the existing curvature of the road (a slight left-hand bend on the eastbound approach to the roundabout) and the requirement for NMUs to cross to two lanes.</p> <p>There may be an increased risk of collisions with NMUs at this crossing point as a result.</p>					
Problem 007	<p>Bar Hill roundabout and southern extents of the scheme, various locations. During the site visit, the Audit Team noted the absence of wayfinding signs for pedestrians and cyclists on the NMU routes. At the southern extents of the scheme, where there is intended connectivity to the remainder of the Cambridgeshire County Council NMU / PROW network, there is no signing to direct users to the appropriate routes, including those seeking the northern side of the A14 (via the NMU bridge). The Audit Team is of the view that users may seek to attempt alternative routes and places to cross, that are not suitable.</p>	<p>It is recommended that sufficient NMU wayfinding signing is provided throughout the scheme, particularly at the key decision-making points.</p>	<p>Agreed Wayfinding signage was agreed with CCC and is shown on Drg No HA528983-ACJV-HKF-S4_B1050-DR-C-1001_C02. However, this was limited to signing of the new bridleway heading northwards and then west south of A14 from Saxon Way. There are no proposals to provide signing of the NMU routes over the new NMU bridge or on the north side of the A14 along the new Local Access Road. The Designer to review IFC documentation and consider any changes needed to ensure clear signage of wayfinding is provided. OO to raise a DOWL for signs yet to be installed.</p>	<p>OO agree Designers Response</p>	<p>Designer to review IFC documentation and amend as necessary. OO to raise a DOWL for signs yet to be installed</p>	<p>No comment at RSA3. Corrective actions appeared to have been taken – these were observed during the RSA3 site inspection.</p>
Problem 008	<p>Bar Hill roundabout, eastern side, at the access road to the health club. On the eastern side of the roundabout, at the access road for the health club, the shared-use signing appears to</p>	<p>It is recommended that all new sign assemblies are installed with a sufficient horizontal clearance from the edge of the highway.</p>	<p>Agreed Designer to review IFC Documentation to verify appropriate setbacks are defined.</p>	<p>OO agree Designers Response</p>	<p>Designer to review IFC documentation and amend as necessary.</p>	<p>The action has not been completed. Remedial measures had not been installed / were not evident during the RSA3 site visit.</p>

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	<p>have been installed too close to the highway. At the time of the audit, the shared-use sign on the southern side of the access appeared to have been struck and was leaning over. There is a likelihood of further vehicles passing close to where NMUs may be waiting to cross, striking these signs and in turn, leading to injuries to motorists and NMUs alike.</p>					
Problem 009	<p>Bar Hill roundabout, eastern side, at the access road to the health club. Currently there is no signing to warn of the potential for pedestrians / cyclists crossing the access road to the health club, and this is exacerbated by a large sign for the health clubs, which impleads on visibility to those crossing from the northern side. As a consequence, the presence of NMUs crossing at this location may not be evident to motorists entering / exiting the roundabout. There is an increased risk of conflicts and potential injury to NMUs traversing the NMU route on the eastern side of the Bar Hill roundabout.</p>	<p>It is recommended that measures are provided to increase driver awareness of the potential for NMUs crossing here. This may include new traffic warning signing and improvements to the existing forward visibility of the crossing point.</p>	<p>Agreed This is a short access road to the hotel/golf club/health centre and vehicle speeds are constrained by the nearby car park and therefore likely to be very low The Designer should consider options to raise driver awareness of this crossing for NMUs. These may include:</p> <ul style="list-style-type: none"> - <input type="checkbox"/> Road marking [e.g. Elephant's feet's] to define crossing route <input type="checkbox"/> Give way road markings on NMU routes at access points to Hotel Access Road; <input type="checkbox"/> Enhanced signing. 	<p>OO agree Designers Response</p>	<p>Designer to review IFC documentation and amend as necessary.</p>	<p>The action has not been completed. Remedial measures had not been installed / were not evident during the RSA3 site visit.</p>
Problem 010	<p>Jug Handle Link, on the northbound approach to the B1050 junction. The traffic splitter island, separating Lane 1 (left turn only) and Lanes 2 & 3 (right turn only) has a traffic bollard. The sign on the bollard instructs drivers to 'keep left' of the island, which is incorrect.</p>	<p>It is recommended that the bollard is provided with a plain face (i.e. no traffic sign).</p>	<p>Agreed The bollard should be provided with a plain face The IFC drawings have been reviewed and the bollard is shown as provided. IFC documentation is to be amended.</p>	<p>OO agree Designers Response</p>	<p>Designer to amend IFC documentation [Drg No. HA528983-ACJV-HSN-S4_B1050-DR-C-0005_C03].</p>	<p>The action has not been completed. Remedial measures had not been installed / were not evident during the RSA3 site visit.</p>

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	<i>This may result in driver confusion on approach to the junction, increasing the risk of collisions due to sudden lane changing.</i>					
<i>Problem 011</i>	<i>B1050 'jug handle' link, southbound approach to junction with A1307 LAR. At the southern end of the jug handle link, connecting the B1050 with the LAR, there is an absence of route continuity signing. No flag type direction signs for destinations (east and west) have been provided. As result motorists may be prone to making sudden / late manoeuvres at the junction, which in turn, could increase the risk of collisions.</i>	<i>It is recommended that flag type direction signs are provided at the junction for road users approaching in all directions.</i>	<i>Agreed This is a repeat of the RSA2 Bar Hill Jug Handle Problem 003. The Designers Response stated: - "Need for additional flag type signs should be reviewed".</i>	<i>OO agree Designers Response</i>	<i>Designer to amend IFC documentation to ensure sign provision is made.</i>	<i>The action has not been completed. Remedial measures had not been installed / were not evident during the RSA3 site visit.</i>
<i>Problem 012</i>	<i>B1050 'jug handle' link, southbound approach to the junction with the A1307 LAR. Although there is a segregated NMU route provided from the north, towards the crossing facilities at the A1307 LAR signalled junction, cyclists approaching on carriageway (downhill) from the B1050 (in Lane 1, left turn lane) are not provided with any transition (dropped/flush kerb) to access the shared-use path on the nearside. This may result in cyclists either becoming unseated or conflicting with other vehicles travelling towards the junction.</i>	<i>It is recommended that a suitable transition (and path) is provided for southbound cyclists approaching the junction, so that they may access the shared-use path on the nearside. This may be accompanied by appropriate cycle markings (with an arrow) to highlight the transition.</i>	<i>Disagree As a segregated NMU route is provided at the toe of the embankment and continuing northwards towards Northstowe and Longstanton it is considered there is sufficient provision for cyclists who wish to use the segregated facilities. Whilst it is acknowledged that some experienced cyclists would prefer, and have the legal right, to use the highway, it is considered such users are unlikely to avail themselves of the LAR NMU facility. It is considered that further measures to encourage use of the NMU route from the Jug Handle are not justifiable.</i>	<i>OO agree Designers Response</i>	<i>No further action considered necessary.</i>	<i>No further comments at RSA3</i>
<i>Problem 013</i>	<i>A1307 LAR, westbound and eastbound approaches to the junction with the B1050 'jug handle' link. On both approaches to the A1307 LAR junction with the</i>	<i>It is recommended that flag type direction signs are provided at the junction for road users approaching the junction, in particular on the westbound carriageway.</i>	<i>Disagree There is no requirement for a flag sign and in this case the stack positioned approximately 120m in advance of the stop line enables drivers to get in the correct lane.</i>	<i>OO agree Designers Response</i>	<i>No further action considered necessary.</i>	<i>No further comments at RSA3</i>

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	<p>jug handle link, there is an absence of route continuity signing.</p> <p>No flag type direction signs for destinations (either ahead for the A1307 or right for the B1050) have been provided. This may result in motorists making sudden / late manoeuvres at the junction, which in-turn could increase the risk of collisions.</p>		<p>A flag sign would need to be so large as it would need to incorporate all the destinations on the ADS that it wouldn't fit on the traffic island opposite.</p> <p>Alternatively, the flag sign could be placed on the far side of the junction for westbound traffic, but it wouldn't be in the drivers' easy field of vision and therefore unlikely to provide any benefit. It is considered that there is nowhere sensible to put a left turn flag for eastbound traffic as the island with signals [on the Jug Handle approach] is too small and too far round the corner and placing it on the far kerb may result in vehicles going the wrong side of the island thinking it's a one way road</p> <p>NB Refer Problem 011 for the Designers Response relating to flags facing the approach from the Jug Handle arm.</p>			
Problem 014	<p>B1050, southbound approach to the 'jug handle' link junction. Under the current TTM layout, the new stack type ADS, showing destinations for the A1307 LAR, is set too far back from traffic nearside, making it difficult for motorists to see. This is due to the continuing works taking place on the eastern side of the B1050, resulting in the sign being located approximately 15 metres from the highway. This has the potential to result in late lane changing as road users approach the junction, increasing the risk of side swipe and rear end shunt type collisions.</p>	<p>It is recommended that a temporary direction sign is provided whilst the works are continuing. There may be a requirement to review the location of the permanent sign, once the works are completed.</p>	<p>Agreed</p> <p>As the sign has been positioned in the new verge assuming completion of the dual carriageway northwards to the Northstowe development, and this link is close to opening, then the sign will not need to be re-located in the permanent works.</p> <p>The position of the sign during the handover may need to be reconsidered by the relevant parties [e.g. the 2 highway authorities].</p>	OO agree Designers Response	OO to raise the need for temporary arrangements [e.g. temporary signs on A frames] with their Contractors and CCC.	<p>The action has not been completed.</p> <p>Remedial measures had not been installed / were not evident during the RSA3 site visit.</p>
Problem 015	<p>B1050 southbound, at its junction with the 'jug handle' link. On the northern side of the B1050, there is an absence of</p>	<p>It is recommended that a flag type direction sign is provided at the junction for road users approaching from the north.</p>	<p>Disagree</p> <p>The Designer considers there is no requirement for a flag sign as the left turn is adequately signed in advance</p>	OO agree Designers Response	No further action considered necessary.	No further comments at RSA3

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	<p>route continuity signing at the junction for traffic approaching the junction, seeking the A1307, via the 'jug handle' link.</p> <p>No flag type direction signs for destinations on the A1307 have been provided. As a result, this may lead to motorists making sudden / late manoeuvres at the junction, which in-turn could increase the risk of collisions.</p>		<p>with both a stack sign and a lane discipline sign.</p>			
Problem 016	<p>B1050 southbound approach to Bar Hill Interchange, SLTL to A14(E).</p> <p>The Audit Team is of the opinion that the traffic splitter island for the segregated left-turn lane (SLTL) on the southbound approach to the Bar Hill Interchange is not sufficiently conspicuous. This is exacerbated during the hours of darkness.</p> <p>The Audit Team is of the opinion that there is an increased risk of vehicles inadvertently striking the island.</p>	<p>It is recommended that measures to further highlight the presence of this island are provided (such as bollards and / or hazard delineators on the island).</p>	<p>Agreed</p> <p>The works in this area are incomplete; the IFC drawings include a bollard and also hatched markings</p>	<p>OO agree</p> <p>Designers</p> <p>Response</p>	<p>No further action considered necessary.</p>	<p>The action has not been completed.</p> <p>Remedial measures had not been installed / were not evident during the RSA3 site visit.</p>
Problem 017	<p>B1050 northbound approach to Bar Hill Interchange.</p> <p>On the northbound approach to Bar Hill interchange there are lane destination markings at the interchange for Lane 2 ('B1050') and Lane 3 ('A14E'). There is no information provided in Lane 1 (development of the SLTL for A14(W)).</p> <p>Furthermore, the ADS sign on approach to the interchange, shows 'Other routes' for the ahead movement from Lane 2.</p>	<p>It is recommended that:</p> <ul style="list-style-type: none"> •The ADS is changed from 'Other Routes' to 'B1050'. •That Lane 1 is delineated as 'A14(W)', Lane 2 as 'B1050' and Lane 3 as 'A14(E) / M11' in advance of the interchange (to complement the ADS). 	<p>Agreed</p> <p>The Designer should review the content of the ADS sign and consider changing 'Other Routes' to 'B1050'.</p> <p>It is unclear from the photograph if all the road markings had been provided. The IFC documentation comprises the following: -</p> <ol style="list-style-type: none"> 1. A bifurcation arrow to denote the commencement of the SLTL; and 2. Subsequently the provision of lane markings 'B1050' in Lane 1 and 'A14(E)' in Lane 2 once the SLTL is fully segregated. 	<p>OO agree</p> <p>Designers</p> <p>Response</p>	<p>No further action considered necessary other than Overseeing Organisation to add any missing road markings to DOWLS list.</p>	<p>The action has not been completed.</p> <p>Remedial measures had not been installed / were not evident during the RSA3 site visit.</p>

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	<i>The lack of this and conflicting information may lead to lane changing conflicts, either on the approach to, or on the circulatory carriageway of the interchange.</i>					
<i>Problem 018</i>	<i>B1050 northbound, at its junction with the 'jug handle' link. Similar to Problem 015, on the southern side of the B1050 / jug handle link, there is also an absence of route continuity signing at the junction. No flag type direction signs for destinations on the A1307 LAR (right) have been provided. As a result, this may lead to motorists making sudden / late manoeuvres at the junction, which in-turn could increase the risk of conflicts.</i>	<i>It is recommended that a flag type direction sign is provided at the junction for road users approaching from the south.</i>	<i>Disagree The Designer considers there is no requirement for a flag sign as the left turn is adequately signed in advance with both a stack sign and a lane discipline sign. The Designer considers that there would be insufficient room to locate a flag sign in the central reserve facing the right turn lane.</i>	<i>OO agree Designers Response</i>	<i>No further action considered necessary.</i>	<i>No further comments at RSA3</i>
<i>Problem 019</i>	<i>B1050 northbound, departure side of traffic signal junction for the Jug Handle link. For northbound motorists continuing ahead through the traffic signal junction, the road narrows from two lanes to a single lane, from the offside. Two signs to warn of 'Road Narrows Ahead' have been provided on either side of the carriageway. The signs may not adequately convey the road layout ahead, particularly the requirement for motorists in Lane 2 to merge with traffic in Lane 1. This may increase the risk of side swipe collisions and / or rear end shunt type collisions at this location.</i>	<i>It is recommended that warning signs to convey 'Road Narrows from the right' (or similar) are provided.</i>	<i>Agreed, with a different solution On completion of the dual carriageway link northwards to the new Northstowe development these signs become redundant. These signs were originally only required if the proposed works were to be completed significantly prior to those associated with the Northstowe development. It is understood that these works are soon to be completed. It is recommended that the signs be taken down and their posts removed.</i>	<i>OO agree Designers Response</i>	<i>Designer to review and amend IFC documentation to remove the road narrows sign provision.</i>	<i>The action has not been completed. Remedial measures had not been installed / were not evident during the RSA3 site visit.</i>

3 Items raised at this Stage 3 Audit

This section describes road safety related issues identified by the Audit Team that are associated with the constructed works. Reference Key Plans are shown at **Appendix B**.

Saxon Way approach to Bar Hill Roundabout

3.1 Problem 001

Location: Saxon Way, eastbound approach to roundabout.

Summary: Obscured direction signing and road markings (new and existing).

On Saxon Way, eastbound approach to the roundabout, the existing (local) map-type ADS is obscured by vegetation and the lane arrow markings on the carriageway are faded / worn.

A new map-type ADS has been installed (showing '(M11)' and '(A14)'), beyond the existing sign, but this too was obscured by the low hanging tree canopy.

This has the potential to increase the likelihood of shunt type / overshoot collisions at the roundabout, particularly at night or in poor weather conditions.

Photo 1: Obscured map-type ADSs on approach to roundabout



Source: Mott MacDonald

Recommendation

It is recommended that the existing ADS is removed, and that the vegetation is cut back, so that the new map-type ADS can be seen.

Furthermore, the road markings are refreshed where necessary.

3.2 Problem 002

Location: Saxon Way, eastbound approach to roundabout.

Summary: Excess binder in surface course.

On the eastbound approach to Bar Hill Roundabout, Lane 1 was closed under temporary traffic management at the time of the site visit and therefore had not been trafficked.

Following an inspection of the new surfacing, the Audit Team is of the opinion that there is too much binder in the surface course of Lane 1 and this may not provide the level of PSV as intended. This can result in vehicles skidding and subsequent overshoot or rear-end shunt type collisions at the roundabout.

Photo 2: Showing new surface course in Lane 1 (closed under TTM)



Source: Mott MacDonald

Recommendation

It is recommended that the surface course in Lane 1 is reviewed / inspected, and that adequate PSV is provided for the surface course on this approach.

3.3 Problem 003

Location: Bar Hill Roundabout, at NMU crossing points.

Summary: Ponding / surface water in the vicinity of crossing areas.

The Audit Team observed surface water that was not draining sufficiently, notably on the northern side of the NMU crossing point on Saxon Way, on the eastbound approach to Bar Hill Roundabout.

This has the potential to result in NMU injury from slips and falls, particularly if the water freezes during colder conditions. Furthermore, the ponding may cause NMUs to seek alternative (less appropriate) locations when crossing Saxon Way, increasing the risk of collisions with motor traffic.

Photo 2: Ponding in front of crossing area



Source: Mott MacDonald

Recommendation

It is recommended that the highway surface water drainage at this location is amended to ensure that surface water can drain sufficiently.

NMU route (permissive bridleway), south-west of Bar Hill Interchange

3.4 Problem 004

Location: Throughout new NMU route, at various locations.

Summary: Various hazards observed within NMU route.

The new NMU route (signed as a public bridleway), on the western side of the junction, was accessible to pedestrians, cyclists and horse-riders. However, throughout the route there were a number of hazards due to ongoing / incomplete works. These included:

- Mud and detritus, presenting a slip, trip and fall hazard;
- Surface water ponding / not draining sufficiently, increasing the risk of NMU slips and falls;
- A temporary vehicle track (surface protection boards), resulting in a significant upstand and trip hazard or a rider becoming unseated.

The above risks are likely to become exacerbated during the hours of darkness, especially as there is no street lighting and no temporary traffic management in place to highlight these hazards to users.

Photo 4: Example of hazards observed throughout the new NMU route



Source: Mott MacDonald

Recommendation

It is recommended the route is temporarily closed to NMUs until works are completed and the hazards removed / mitigated, as soon as practicable.

Bar Hill Roundabout

3.5 Problem 005

Location: Bar Hill Roundabout, eastern circulatory carriageway.

Summary: Ponding / surface water in the carriageway.

On the eastern quadrant of Bar Hill Roundabout (on the northern side of the health club access), the Audit Team observed a significant accumulation of surface water in the circulatory carriageway.

This may result in an increase of vehicles skidding and losing control as they negotiate the roundabout. The greatest risk of injury is likely to be to motorcyclists who may be more susceptible should loss of control occur at this location.

Photo 5: Surface water ponding on eastern side of roundabout



Source: Mott MacDonald

Recommendation

It is recommended that the highway surface water drainage at this location is amended to ensure that surface water can drain sufficiently.

B1050 northbound approach to Bar Hill Interchange

3.6 Problem 006

Location: SLTL to A14 westbound, approach to give-way with entry slip road.

Summary: Insufficient signing to warn of the requirement to 'give way'.

There is no permanent traffic signing provided to warn drivers of the requirement to 'give way' where the segregated left turn lane (SLTL) intersects with the A14 westbound entry slip road.

At the time of the site visit, only a nearside temporary 'give way' sign was in place, which was positioned in advance of the give way line. The vertical alignment on the approach to the give way point is on a crest curve, and as such, drivers may not readily appreciate the form of control at the junction.

This may in turn result in shunt type collisions from close following vehicles.

Photo 6: Showing temporary give-way sign on approach to intersection



Source: Mott MacDonald

Recommendation

It is recommended that measures to provide motorists with additional warnings about the requirement to 'give way' are provided.

This may include an advanced 'give way', with a distance plate, on approach to the junction.

3.7 Problem 007

Location: SLTL to A14 westbound, at the give-way with entry slip road.

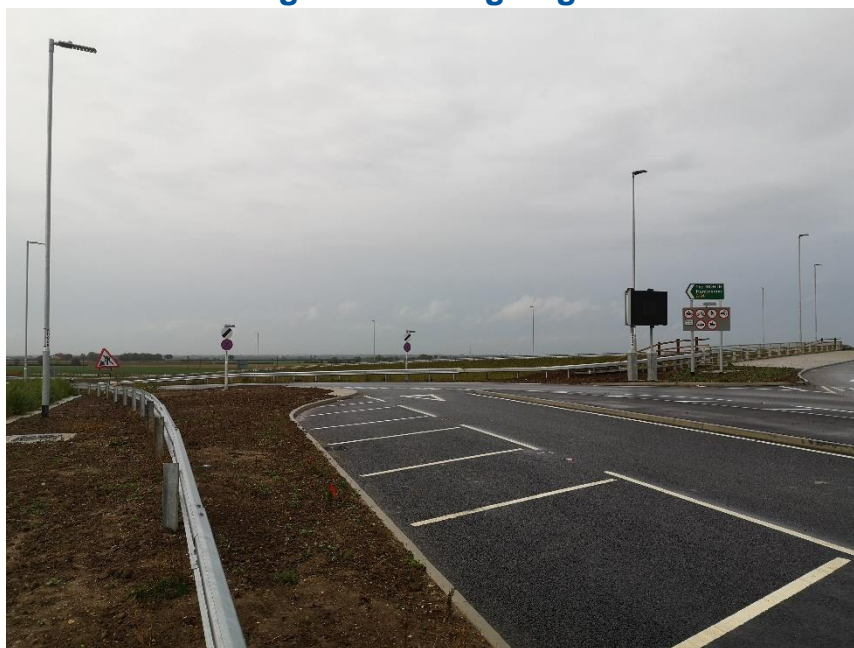
Summary: Alignment of the SLTL and intersecting angle of the give way point.

The alignment of the segregated left-turn lane / approach on to A14 westbound entry slip road is such that it creates a small entry angle (at approximately 30°).

This requires the driver to come to a stop and look over their shoulder or use their mirrors to gauge a suitable gap to allow them to join the circulating traffic. It was observed that some drivers were experiencing difficulty when undertaking this manoeuvre.

There is a risk that this continued behaviour may increase the risk of rear end shunt type collisions at the give way line or has the potential for drivers to misjudge vehicles exiting the roundabout, resulting in conflicts.

Photo 7: Showing intersecting angle of SLTL with slip road



Source: Mott MacDonald

Recommendation

It is recommended that measures to create a larger entry / intersecting angle with the slip road are investigated.

3.8 Problem 008

Location: Bar Hill Interchange, at A14 westbound entry slip road.

Summary: Provision and location of Entry Slip Signals (ESS)

There is an ESS at the exit arm of the roundabout for the A14 westbound entry slip road. The Audit Team understands that the A14 is subject to a Variable Mandatory Speed Limit (VMSL), however, there are national speed limit (NSL) roundel signs on either side of the entry slip road beyond the ESS.

The provision of the NSL roundels for this link is considered to be contradictory to the operation of the VMSL and this may result in reduced speed limit compliance by motorists joining the A14. There is a concern that could result in an increased risk of collisions, particularly with slow / stationary traffic on the slip road.

Photo 8: Showing NSL signs and the ESS in contradiction



Source: Mott MacDonald

Recommendation

It is recommended that the NSL signs are removed and replaced with signs informing road users of the VMSL in operation.

4 Audit Team Statement

We certify that this audit has been carried out in accordance with Departmental Standard DMRB GG 119.

Road Safety Audit Team Leader

■■■■■■■■■■ BEng (Hons), CEng, MICE, FCIHT, MSoRSA

Holder of approved Certificate of Competency in Road Safety Audit, May 2011

Technical Specialist
Mott MacDonald
Stoneham Place
Stoneham Lane
Southampton
SO50 9NW

Signed:

Date: 27th October 2020

Road Safety Audit Team Member

■■■■■■■■■■ MCIHT, MSoRSA

Holder of approved Certificate of Competency in Road Safety Audit, Sep 2012

Senior Engineer
Mott MacDonald
Stoneham Place
Stoneham Lane
Southampton
SO50 9NW

Signed:

Date: 27th October 2020

Others Involved (Such as an observer, Police/Network Management representative or specialist advisor)

■■■■■■■■■■ Audit Team Observer, Cambridgeshire County Council

Appendix A Documents and Drawings

The following drawings and documentation have been examined as part of this audit:

Table A1: Drawings

Drawing Number	Document Title	Revision
HA528983-ACJV-HFE-S4_B1050-DR-C-1001_C06.pdf	Bar Hill Side Road Permanent Fencing – Section 4 – Sheet 1 of 5	C06
HA528983-ACJV-HFE-S4_B1050-DR-C-1002_C04.pdf	Bar Hill Side Road Permanent Fencing – Section 4 – Sheet 2 of 5	C04
HA528983-ACJV-HFE-S4_B1050-DR-C-1003_C03	Bar Hill Side Road Permanent Fencing – Section 4 – Sheet 3 of 5	C03
HA528983-ACJV-HFE-S4_B1050-DR-C-1004_C03.pdf	Bar Hill Side Road Permanent Fencing – Section 4 – Sheet 4 of 5	C03
HA528983-ACJV-HFE-S4_B1050-DR-C-1005_C02.pdf	Bar Hill Side Road Permanent Fencing – Section 4 – Sheet 5 of 5	C02
HA528983-ACJV-HKF-S4_B1050-DR-C-0001_C05.pdf	Bar Hill Side Kerbs, Footways & Paved Areas – Section 4 – Sheet 1 of 5	C05
HA528983-ACJV-HKF-S4_B1050-DR-C-0002_C06.pdf	Bar Hill Side Kerbs, Footways & Paved Areas – Section 4 – Sheet 2 of 5	C06
HA528983-ACJV-HKF-S4_B1050-DR-C-0003_C02.1.pdf	Bar Hill Side Kerbs, Footways & Paved Areas – Section 4 – Sheet 3 of 5	C02.1
HA528983-ACJV-HKF-S4_B1050-DR-C-0004_C05.pdf	Bar Hill Side Kerbs, Footways & Paved Areas – Section 4 – Sheet 4 of 5	C05
HA528983-ACJV-HKF-S4_B1050-DR-C-0005_C03.pdf	Bar Hill Side Kerbs, Footways & Paved Areas – Section 4 – Sheet 5 of 5	C03
HA528983-ACJV-HLG-S4_B1050-DR-C-1001 - Version C06 - 11102019.pdf	Bar Hill Side Road Detailed Lighting Design – Sheet 4 – Sheet 1 of 5	C06
HA528983-ACJV-HLG-S4_B1050-DR-C-1002 - Version C06 - 26042019.pdf	Bar Hill Side Road Detailed Lighting Design – Sheet 4 – Sheet 2 of 5	C06
HA528983-ACJV-HLG-S4_B1050-DR-C-1004.pdf	Bar Hill Side Road Detailed Lighting Design – Sheet 4 – Sheet 4 of 5	Z01

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Drawing Number	Document Title	Revision
HA528983-ACJV-HLG-S4_B1050-DR-C-1005.pdf	Bar Hill Side Road Detailed Lighting Design – Sheet 4 – Sheet 5 of 5	Z01
HA528983-ACJV-HMK-S4_B1050-DR-C-0001 - C06.pdf	Bar Hill Side Road Markings – Section 4 – Sheet 1 of 5	C06
HA528983-ACJV-HMK-S4_B1050-DR-C-0002_C10.pdf	Bar Hill Side Road Markings – Section 4 – Sheet 2 of 5	C10
HA528983-ACJV-HMK-S4_B1050-DR-C-0003 - C06.pdf	Bar Hill Side Road Markings – Section 4 – Sheet 3 of 5	C06
HA528983-ACJV-HMK-S4_B1050-DR-C-0004 - C07.pdf	Bar Hill Side Road Markings – Section 4 – Sheet 4 of 5	C07
HA528983-ACJV-HMK-S4_B1050-DR-C-0005 - C05.pdf	Bar Hill Side Road Markings – Section 4 – Sheet 5 of 5	C05
HA528983-ACJV-HRR-S4_B1050-DR-C-0001_C02.pdf	Bar Hill Road Restraint- Section 4 – Sheet 1 of 5	C02
HA528983-ACJV-HRR-S4_B1050-DR-C-0002_C02.pdf	Bar Hill Road Restraint- Section 4 – Sheet 2 of 5	C02
HA528983-ACJV-HRR-S4_B1050-DR-C-0003_C01.pdf	Bar Hill Road Restraint- Section 4 – Sheet 3 of 5	C01
HA528983-ACJV-HRR-S4_B1050-DR-C-0004_C02.pdf	Bar Hill Road Restraint- Section 4 – Sheet 4 of 5	C02
HA528983-ACJV-HRR-S4_B1050-DR-C-0005_Z01.pdf	Bar Hill Road Restraint- Section 4 – Sheet 5 of 5	Z01
HA528983-ACJV-HSC-S4_B1050-DR-C-0001 - C01.pdf	Bar Hill Side Road Site Clearance – Section 4 – Sheet 1 of 5	C01
HA528983-ACJV-HSC-S4_B1050-DR-C-0002 - C01.pdf	Bar Hill Side Road Site Clearance – Section 4 – Sheet 2 of 5	C01
HA528983-ACJV-HSC-S4_B1050-DR-C-0003 - C01.pdf	Bar Hill Side Road Site Clearance – Section 4 – Sheet 3 of 5	C01
HA528983-ACJV-HSC-S4_B1050-DR-C-0004 - C01.pdf	Bar Hill Side Road Site Clearance – Section 4 – Sheet 4 of 5	C01
HA528983-ACJV-HSC-S4_B1050-DR-C-0005 - C01.pdf	Bar Hill Side Road Site Clearance – Section 4 – Sheet 5 of 5	C01
HA528983-ACJV-HSN-S4_B1050-DR-C-0001_C04.pdf	Bar Hill Side Traffic Signs – Section 4 – Sheet 1 of 5	C04

Drawing Number	Document Title	Revision
HA528983-ACJV-HSN-S4_B1050-DR-C-0002_C06.pdf	Bar Hill Side Traffic Signs – Section 4 – Sheet 2 of 5	C06
HA528983-ACJV-HSN-S4_B1050-DR-C-0003_C04.pdf	Bar Hill Side Traffic Signs – Section 4 – Sheet 3 of 5	C04
HA528983-ACJV-HSN-S4_B1050-DR-C-0004_C02.pdf	Bar Hill Side Traffic Signs – Section 4 – Sheet 4 of 5	C02
HA528983-ACJV-HSN-S4_B1050-DR-C-0005_C03.pdf	Bar Hill Side Traffic Signs – Section 4 – Sheet 5 of 5	C03

Table A2: Documents

Document Number	Document Title	Revision
AUDITS		
HA528983-ACJV-HGN-S4_RSA2-RP-C-0003_P01.2.pdf	RSA2 Report Safety Audit Designers Response	P01.2
HA528983-ACJV-HGN-S4_RSA2-RP-C-0003	Stage 2 Road Safety Audit Designer's Response with IFC outcomes defined	P01
A14 S4 Stage 2 RSA - Exemption Report.pdf	Exemption Report	P01.1
A14 S4 Stage 2 RSA - Exemption Report.pdf	Exemption Report	P01.1
406395CC-TPN-ITD-065-B.pdf	RSA2 – Traffic Signals Report	P01.1
DEPARTURE FROM STANDARDS		
HA528983-ACJV-GEN-SG_DFSTRACK-SH-C-0001	MASTER Departures from Standards Tracker	P03.2
[HA528983-ACJV-GEN-S1_DFS-DS-C-0014.pdf] APPLICATION FOR DEPARTURE FROM STANDARDS 78029 rev1	Existing carriageway width is less than that currently required for single lane slip roads with hard shoulders and off-side hard strips	
TRAFFIC FLOW DATA		
<i>Existing and forecast traffic flows documents are not included in this application. If needed, they can be found in the previous section RSA2 application pack.</i>		
OTHER DOCUMENTS		
HA528983-ACJV-EBD-SG_ECOSCH-SH-C-0001_C01_22122016	A14 Ecology Schedule	C01

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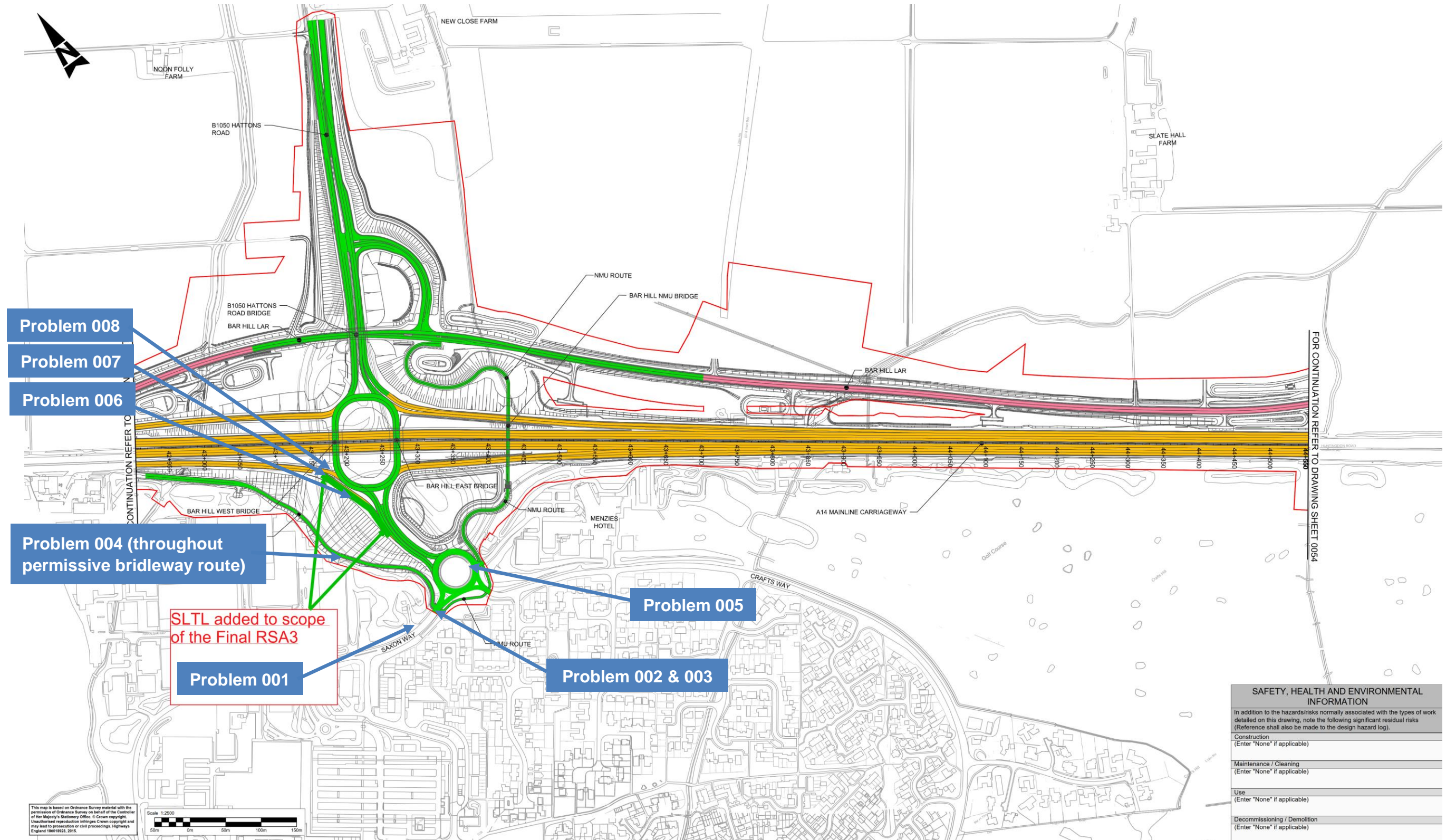
Document Number	Document Title	Revision
HA528983-ACJV-GEN-SG NMU-RP-C-0001 - Version P01 - 05052016.pdf	NMU Audit Report	P01

Appendix B Reference Key Plan

B-1 Key Plan: Section 4 Bar Hill Interchange - Sheet 1 of 3

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B-1 Key Plan, Section 4 Bar Hill Interchange – Sheet 1 of 1



Problem 008

Problem 007

Problem 006

Problem 004 (throughout permissive brideway route)

SLTL added to scope of the Final RSA3

Problem 001

Problem 005

Problem 002 & 003

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION	
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the design hazard log).	
Construction	(Enter "None" if applicable)
Maintenance / Cleaning	(Enter "None" if applicable)
Use	(Enter "None" if applicable)
Decommissioning / Demolition	(Enter "None" if applicable)

Source: A14 Integrated Delivery Team, HA528983-ACJV-HKF-S4_RSA3 - DR - C - 0053_P01.2 (Not to scale)

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