A14 Integrated Delivery Team

A14 Cambridge to Huntingdon Improvement Scheme

IRSA3 SWAVESEY AND LAR LINK (SWAVESEY TO BAR HILL) RESPONSE REPORT

Status: For Information

03 August 2020

much more than a road

Working on behalf of highways england

Notice

This report was produced by IDT for Highways England for the specific purpose of the A14 Cambridge to Huntingdon Improvements Scheme.

This report may not be used by any person other than Highways England without Highways England's express permission. In any event, IDT accepts no liability for any costs, liabilities or losses arising as a result of the use of or reliance upon the contents of this report by any person other than Highways England.

Document History

PROJECT NUMBER: HA528983			DOCUMENT REF: HA528983-ACJV-HGN-S4_IRSA3-RP-C-0003			
P04	HE comments addressed. Signatures added	GJ	GJ	GJ	GJ	01/06/20
P03	HE comments addressed. Signatures added	GJ	GJ	GJ	GJ	07/07/20
P02	Updated following mtg with HE/CCC 28/05	GJ	GJ	GJ	GJ	18/06/20
P01	For HE Review	GJ	GJ	GJ	GJ	19/05/20
Revision	Purpose Description	Originated	Checked	Reviewed	Authorised	Date

Table of contents

Client signoff

Client	Highways England
Project	A14 Cambridge to Huntingdon Improvement Scheme
Document title	Section 4 –Swavesey And Lar Link (Swavesey To Bar Hill) Interim Road Safety Audit Stage 3 Response Report
Project No.	HA528983
Copy No.	
Document reference	HA528983-ACJV-HGN-S4_IRSA3-RP-C-0003
PCF Stage	

THIS PAGE IS BLANK

1. Introduction

1.1. This report is an Interim Stage 3 Road Safety Audit undertaken on the Section 4 Local Access Road (LAR) of the A14 Cambridge to Huntingdon Improvement Scheme and considers the works at Swavesey and LAR link between Swavesey junction and Bar Hill.

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

1.3. 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

[redacted] Audit Team Observer, Cambridgeshire County Council

1.4. 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 separately on Thursday 09/04/2020 between 14:00hrs and 21:00hrs 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 clear / sunny and the road surface was dry.

1.5. The Road Safety Audit Observers from Cambridgeshire County Council conducted their own visits separately and have discussed the items raised / contributed to this report via video conferencing.

1.6. The Audit Team were escorted / followed on-site by representatives of the A14 Integrated Delivery Team. A representative from Cambridgeshire Police was invited to the site visit but was unable to attend.

1.7. At the time of the interim Stage 3 RSA site visit there were a number of elements that were incomplete. The Audit Team noted the following on site:

- No flag sign present for the Swavesey Link at the Swavesey Northern Roundabout;
- Lane 1 closed southbound on Swavesey Link towards Swavesey Northern Roundabout;
- LAR between the Bucking Way Roundabout and the B1050 junction not open to traffic due to the continuation of construction works;
- Sections of the NMU route on the northern side of the LAR were incomplete;
- Temporary access to Robins Lane (from A14) in operation;
- Elements of regulatory and warning signs incomplete;
- Sections of environmental barrier and boundary fencing incomplete.

1.8. 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.

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

1.10. 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

1.11. 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 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.

1.12. 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 below:-.

Section 4: A14 Swavesey Junction

1.13. The new Swavesey junction is a vital part of the new A14 and where key parts of the scheme come together. Here local drivers will be able to join the new 5-mile local access road to travel east to Cambridge, join the old A14 to travel west to Huntingdon or join the new A14 to travel east or west on longer journeys.

1.14. A new local access road, approximately 8 km (5 miles) in length, will be constructed as a dual carriageway link between the existing A14 near Fen Drayton and Swavesey junction, and as a single carriageway between Swavesey and Girton.

1.15. This road will provide a route for local traffic between Cambridge and Huntingdon as well as providing access to properties and businesses along the route corridor.

Departures and relaxations from standard

1.16. No Design Strategy Records have been produced for this scheme.

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

Swavesey interchange

1.18. As per the traffic estimates, Swavesey interchange west bound diverge requires ghost island layout with a lane drop (Fig. 2/5, Layout D, DMRB TD 22/06) with three lanes upstream and two lanes downstream. However, a strategic decision has been taken to provide for the mainline, 3 lanes down stream of this diverge and so ghost island diverge without lane drop is proposed (Fig. 2/5, layout C DMRB TD 22/06).

Design detail

1.19. For the design details please refer to the tables within the RSA Brief:

Factors affecting road safety

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

> *"All factors were identified in the Stage 2 Road Safety Audit and discussed within the Designer's Responses."*

Strategic Decisions – Items Outside the Scope of this Audit

1.21. 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.

1.22. 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

2.1. It is understood that the following Road Safety Audits have been previously undertaken on this scheme:

2.2. Stage 1 Road Safety Audit

2.3. The scope of the Stage 1 Road Safety Audit included the area between A14 Ellington to Swavesey and A1/A14 Brampton Interchange to Alconbury (referred to at the time as 'Section 1') and are recorded in the Stage 1 Road Safety Audit report (Document. Ref. 264223GU/ITD/ITQ/160 Revision 003).

2.4. A Designers Response report to the Stage 1 Audit was provided by Jacobs in October 2014 (Document reference: A14-JAC-H0-E1-RP-C-00002).

2.5. Stage 2 Road Safety Audit

2.6. Section 4 was subject to the following Stage 2 Road Safety Audit, Designers Response and Exception Reports. These 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 – 21 of these items were related to the LAR section.
- Section 4 – RSA2 Exception Report (No document reference), February 2019. This related to Problems 007, 009, 013, 014, 015, 020, 036, 041, 049, 051, 052, 053, 054, 056, 059, 060, of the RSA2.
- Section 4 – Stage 2 RSA Designer's Response and Outcome report (HA528983-ACJV-HGN-S4_RSA2-RP-C-0003_P01.2.), September 2019.

2.7. All of the Designer's Response comments, and the list of subsequent actions are summarised in Table 1, overleaf.

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

Ref:	Location and Identified Issue	Response Comment / Action
S4 010	*Problem S4.010* *3.78. Location: Swavesey Junction – Northern Roundabout.* *3.79. Summary: Lack of spiral road markings on circulatory carriageway.* *3.80. Drawing No. HA528983-ACJV-HMK-SR397-DR-C-0005 shows the road markings for the Swavesey junction northern roundabout.* *3.81. These show a three-lane entry on the eastbound approach from the Fen Drayton – Swavesey LAR. Lane 1 appears to show 'SWA', Lane 2 'A14 (E)' and 'SWA' and Lane 3 'A14 (E)'.* *3.82. Furthermore, there are three lanes on the circulatory carriageway of the roundabout.* *3.83. The Audit Team consider that the left turn movement intended from Lane 2 is incorrect and could lead to conflicts on the roundabout.* *3.84. Furthermore, the arrangement of these lanes on the approaches and on the circulatory carriageway will require vehicles to change lanes on the roundabout itself - particularly for those heading for A14 (W). This is likely to result in side swipe collisions on the southern and eastern exits in particular.* *Recommendation* *3.85. It is recommended that the layout of the roundabout (and approaches) is reviewed such that lane destinations correspond with signed destinations on the respective ADSs.* *This may include the provision of spiral road markings in order to prevent / mitigate lane changing manoeuvres on the circulatory carriageway.*	*Designer Response* *3.87. Agreed – Design now amended. Action Closeout* *Agreed changes were incorporated into revision C01 of drawing HA528983-ACJV- HMK-S4_SR397-DR-C-0005, showing lane destination amendments. This revision has been issued to the Contractor.* *No further action is required.*
S4 011	*Problem S4.011* *3.88. Location: Swavesey Junction – Northern Roundabout.* *3.89. Summary: Two-lane exit onto Fen Drayton – Swavesey LAR.* *3.90. Drawing No. HA528983-ACJV-HMK-SR397-DR-C-0005 shows three lanes on the circulatory carriageway of the northern roundabout.* *3.91. There appears to be a two lane exit onto the westbound LAR, adjacent to the segregated left turn lane from the overbridge. On the southern part of the roundabout, there appears to be two lanes on the circulatory carriageway, marked for this exit.* *3.92. The Audit Team is of the opinion that this will lead to conflicts on the exit. This is likely to be amplified by road users' conscious of traffic joining nearside from the segregated left turn lane from the Swavesey over bridge.* *Recommendation* *3.93. It is recommended that the provision of spiral road markings in order to prevent / mitigate lane changing manoeuvres on the circulatory carriageway is investigated. This should ensure that the number of lanes on the circulator carriageway are commensurate with the proposed number of* *entry and exit lanes for the roundabout.*	*Designer Response* *3.94. Agreed – Design now amended. Action Closeout* *Revision C01 of drawing HA528983-ACJV-HMK-S4_SR397-DR-C-0005 was updated to show two lanes on the circulatory carriageway and was issued to the Contractor. The spiral road markings have since been reviewed and were updated in revision C04 of the same drawing for further clarity to road users; this has been issued to the Contractor.* *No further action is required.*

Ref:	Location and Identified Issue	Response Comment / Action
S4 012	*Problem S4.012* *3.95. Location: Swavesey Junction – Swavesey to Bucking Link Road.* *Summary: Absence of lane lines on two-lane section towards Swavesey Northern Roundabout.* *3.97. Drawing No. HA528983-ACJV-HMK-SR397-DR-C-0006 shows what appears to be a two- lane cross-section for traffic between the Bucking Way Road roundabout and the Swavesey Junction northern roundabout.* *3.98. There are no lane lines, which is likely to lead to lane changing collisions, particularly on the approach to the northern roundabout.* *Recommendation* *It is recommended that appropriate lane markings are provided on this link.*	*Designer Response* *3.100. Agreed – Design now amended. Action Closeout* *Revision C01 of drawing HA528983-ACJV-HMK-S4_SR397-DR-C-0006 incorporated the designer's response to include lane lines on the approach to the northern roundabout. This was issued to the Contractor.* *No further action is required.*
S4 013	*Problem S4.013* *3.101. Location: Swavesey Junction - Bucking Way Road Roundabout.* *3.102. Summary: Absence of lane destination arrows and associated lane destination markings.* *3.103. Drawing No. HA528983-ACJV-HMK-SR397-DR-C-0006 and Drawing No. HA528983- ACJV-HSN-SR397-DR-C-0007 show the lane markings and road signs for the Bucking Way Roundabout.* *3.104. The absence of lane destination and lane arrows has the potential to result in road users travelling in the wrong lane, which may in turn result in side swipe / lane changing collisions. Recommendation* *It is recommended that corresponding lane markings and arrows are provided on the approach to this roundabout.*	*Designer Response* *3.106. Disagree – The lengths of the two-lane sections of each approach to this roundabout are too narrow and too short to be able to fit in any lane destinations and arrows.* *3.107. The Designer recommends no changes to the design. Action Closeout* *No changes are proposed to the design. This is recorded in the Exemption Report: A14 S4 Stage 2 RSA - Exemption Report.pdf.* *Exemption Report Technical Assurance Lead's Statement: "I agree with the Design Team and consider that the auditor's recommendations are not appropriate at this location".* *No further action is required.*
S4 015	*Problem S4.015* *3.115. Location: Swavesey Junction – southern roundabout.* *3.116. Summary: Absence of lane destination markings and arrows.* *3.117. Drawing No. HA528983-ACJV-HMK-SR397-DR-C-0003 shows the lane markings arrangements for the Swavesey southern roundabout.* *3.118. There are advanced direction signs provided on the principal approaches to the junction.* *3.119. However, the absence of corresponding lane destination markings and arrows can result in incorrect lane use, which has the potential to manifest itself in late lane changing manoeuvres. Recommendation* *It is recommended that lane destination markings and arrows are provided which correspond with the proposed ADSs on the approaches to the junction.*	*Designer Response* *3.121. Agree, but with an alternative recommendation - The exit slip road has lane markings indicating the A1307 in both lanes as shown on drawing HA528983- ACJV-HMK-S4-SR397-DR-C-0002. These markings can be included on the MSA link road, but the other approaches have lanes that are too narrow and too short to accommodate them.* *3.122. The markings included on the MSA link road. Action Closeout* *The addition of destination lane markings on the MSA has been included in revision C04 drawing HA528983-ACJV-HMK-S4_SR397-DR-C-0002, which has been issued to the Contractor.* *This is recorded in the Exemption Report: A14 S4 Stage 2 RSA - Exemption Report.pdf.* *Exemption Report Technical Assurance Lead's Statement: "I agree with the Design Team and consider that the proposals for road markings, on the MSA link road should mitigate the risk identified by the Road Safety Audit Team".* *No further action is required.*

Ref:	Location and Identified Issue	Response Comment / Action
S4 016	*Problem S4.016* *3.123. Location: Swavesey Junction – northern roundabout.* *3.124. Summary: Absence of lane destination markings and arrows.* *3.125. Drawing No. HA528983-ACJV-HMK-SR397-DR-C-0003 and Drawing No. HA528983- ACJV-HSN-SR397-DR-C-0005 show the lane marking arrangements for the Swavesey northern roundabout.* *Northbound on the Swavesey overbridge – there is a map-type ADS located at approximate Chainage 150m. This is supplemented by lane arrows and carriageway markings immediately prior to the junction.* *3.127. The development of the segregated left-turn lane (SLTL) commences at approximate Chainage 125m.* *3.128. The Audit Team is of the opinion that this layout will result in late lane changing manoeuvres, increasing the likelihood of collisions with other vehicles or street furniture. Recommendation* *3.129. It is recommended that the map-type ADS is moved further south in order to afford more decision time for drivers, and that the proposed arrow and destination markings at the entry to the roundabout are supplemented between the potentially re-sited ADS and the development of the* *SLTL.*	*Designer Response* *3.130. Agreed – The ADS will be moved further south. Action Closeout* *The Road Safety Auditor viewed the traffic signs drawing HA528983-ACJV-HSN- S4_SR397-DR-C-0003-P02.1.pdf as stated in Appendix A2 of RSA2. Their comments have been addressed in the drawing HA528983-ACJV-HSN-S4_SR397- DR-C-0003 (C03), where the ADS sign has been moved to Ch. 0+200. The Specification Appendix 12/1 Sign Schedule has been updated accordingly.* *It is unclear which revision of the road markings drawing was viewed by the Road Safety Auditor. However, their comments were addressed in the drawing HA528983-ACJV-HMK-S4_SR397-DR-C-0003 revision C05, which shows that the proposed arrow and destination markings at the entry to the roundabout have been supplemented between the ADS and the development of the SLTL. VRS has been provided at the new location of the post as shown in HA528983- ACJV-HRR-S4_SR397-DR-C-0003 (C01) and the signposts are not within the working width of the barrier, so do not need to be passively safe.* *No further action is required.*
S4 019	*Problem S4.019* *3.148. Location: Swavesey Junction – northern roundabout.* *3.149. Summary: Number of exit lanes from roundabout.* *3.150. Drawing No. HA528983-ACJV-HSN-S4-SR397-DR-C-0006 shows the proposed two lane exit onto the A1307 LAR (westbound).* *3.151. The Audit Team has also raised an issue concerning the number of traffic lanes on the circulatory carriageway (see Problem 010) which influences this.* *3.152. The absence of appropriate road markings at this exit can lead to merging conflicts for vehicles on this arm.* *Recommendation* *It is recommended that, if a two-lane exit is to be retained here, a merge / kicker arrow is provided on the westbound exit onto the A1307 LAR.*	*Designer Response* *3.154. Agreed – Design has now been amended. Action Closeout* *It is unclear which revision of the road markings drawing was viewed by the Road Safety Auditor. However, their comments were addressed in the drawing HA528983-ACJV-HMK-S4_SR397-DR-C-0006_P02.pdf, which shows that road markings have been provided on the westbound exit onto the A1307 LAR. This has carried through into the Construction issue drawings.* *No further action is required.*

Ref:	Location and Identified Issue	Response Comment / Action
S4 020	*Problem S4.020* *3.155. Location: Swavesey Junction – northern roundabout.* *3.156. Summary: Segregated left-turn lane onto A1307 LAR.* *3.157. There is a segregated left-turn lane from the Swavesey overbridge (northbound link) onto the westbound A1307 carriageway. The northbound link across the overbridge is subject to National Speed Limit. It is not clear as to the radius of this left-hand curve, but it does appear to be a sharp deviation.* *3.158. This layout has the potential for loss of control collisions at this location and may also lead to vehicles overrunning the hatched area into the adjoining exit from the roundabout.* *Recommendation* *3.159. It is recommended that the configuration of the lane destination markings on this approach are reviewed.* *Furthermore, the provision of a bend warning sign (to TSR&GD Diag. No.512) with accompanying 'SLOW' road marking (TSR&GD Diag. No.1058) is investigated on this approach.*	*Designer Response* *3.161. Agree, but with an alternative recommendation - As this link is very short it is unlikely that speeds will be high and the ADS (moved further south) showing the dedicated left is visible to traffic leaving the roundabout to the south of the A14. It is considered that the bend ahead sign is unnecessary.* *3.162. SLOW road markings added.* *Action Closeout* *'SLOW' road marking has been added to the segregated left turn lane (SLTL) from Swavesey overbridge to the A1307; this can be seen in revision C04 of drawings HA528983-ACJV-HMK-S4_SR397-DR-C-0005, which has been issued to the Contractor.* *Refer to S4.016 for details of the change relating to the ADS on approach to SLTL. This is recorded in the Exemption Report: A14 S4 Stage 2 RSA - Exemption Report.pdf.* *Exemption Report Technical Assurance Lead's Statement: "I agree with the Design Team and consider that the auditor's recommendation to add a 'bend warning sign' is not appropriate. By using appropriate road markings, the risk identified by the Road Safety Audit Team should be reduce to a level that is as low as reasonably practicable".* *No further action is required.*
S4 033	*Problem S4.033* *3.252. Location: Robins Lane Junction, eastern access road.* *3.253. Summary: Visibility for right turning vehicles.* *On the southern side of Robins Lane junction there is an access road situated on the eastern side. Whilst access to and from this is likely to be periodic, the Audit Team is concerned as* *to whether there is sufficient visibility to the right for vehicles making the right turn from the access road.* *3.255. The Audit Team consider that conflicts with right turning vehicles may arise, resulting in side impact collisions.* *Recommendation* *It is recommended that adequate visibility is provided for vehicles intending to turn right from this access.*	*Designer Response* *3.257. Agreed – The alignment of the accommodation access do not adopt DMRB standards as this would have been an overprovision of the design requiring more onerous geometry. In addition, the traffic flows along Robins Lane are very low* *with the 2035 DS+ scenario giving a peak AM and PM flow of 4 Passenger Car* *Units. With this in mind, it was felt that the visibility provided is adequate for the layout and level of use of this link.* *3.258. The Designer recommends no changes to the design. Action Closeout* *The design was reviewed at the time of the receipt of the RSA2 report, as per Road Safety Audit Team recommendation, and no further action is required.*

Ref:	Location and Identified Issue	Response Comment / Action
S4 034	*Problem S4.034* *3.259. Location: A1307 LAR on northern side ofA14.* *3.260. Summary: Headlight glare between opposing traffic flows* *3.261. There is a median to be provided between the A14 main carriageway and the A1307 LAR to the north. The Audit Team is of the opinion that at night this could result in headlight glare between opposing traffic streams on the nearside. This in turn, may confuse motorists as to which side of the road they are driving, causing sharp braking / loss of control collisions.* *Recommendation* *It is recommended that there is adequate screening between LAR (to the north of theA14) and the A14 mainline carriageway such that, at night, oncoming vehicles are not impeded / confused by approaching headlights on the wrong side.*	*Designer Response* *3.263. Agreed – A review of the fencing drawings through this location illustrates that Post and Rail fencing retrofitted with an anti-dazzle feature is proposed. This is aimed at preventing glare from headlights in both directions from the LAR and the mainline carriageway.* *3.264. No design changes proposed. Action Closeout* *During design development, the specification for the use of concrete barrier with anti- dazzle paddles has been removed because the barrier is too wide for the available cross-section. Instead, the solution proposes a steel VRS to be provided in both the adjacent LAR and A14 mainline nearside verges, with 2m high palisade fencing in between.* *Further details can be found in the response to RFI 4872. The fencing and road restraint drawings have been updated and issued to the Contractor; refer to transmittal number: A14-TR-04155.* *No further action required.*
S4 035	*Problem S4.035* *3.265. Location: Robins Lane Junction.* *3.266. Summary: Junction arrangement with LAR.* *3.267. Drawing No. HAS528983-ACJV-HSN-S4-SR418-DR-C-0003 shows the Robins Lane access onto the LAR.* *3.268. On Robins Lane, for vehicles traversing the left-hand bend, the Audit Team consider that there is potential for motorists failing to stop at the give-way and potentially overshoot into Lane 1.* *3.269. In addition, for the opposing movement, there is the potential for rear end shunt type collisions as there is no deceleration provision on the A14 for eastbound traffic making this left turn into Robins Lane.* *Recommendation* *It is recommended that this junction layout is reviewed with a view to providing appropriate acceleration and deceleration lanes on the A1307 LAR in order to enable improved access / egress to / from Robins Lane.*	*Designer Response* *3.271. Agreed – The layout of the junction between the Local Access Road (LAR) and Robins Lane was designed in accordance with Layout 3 of TD41/95. Table 2/2 suggests this is an appropriate layout in situations where up to 30 dwellings are served and the traffic using the access is less than 300 vehicles AADT. The junction is to standard in terms of geometry and visibility from the junction along the LAR. Furthermore, the LAR is of a straight alignment with standard forward visibility.* *3.272. A review of the traffic model for Robins Lane associated with the 2035 DS+ scenario gives a peak AM and PM flow of 4 Passenger Car Units. The volume of traffic accessing and egressing Robins Lane is very low.* *3.273. Given that the junction is designed in accordance with the DMRB with no requirements for a departure and the traffic flow to and from the junction is low, it is considered that the provision of acceleration and deceleration lanes at the junction would not present best value at this location.* *3.274. The Designer recommends no changes to the design. Action Closeout* *Since traffic flow to and from the junction is low, the layout proposed is appropriate in accordance with TD 41/95. The junction is to-standard in terms of geometry and visibility from the junction along the LAR, and the LAR has standard forward visibility; hence, acceleration and deceleration lanes are not required.* *No further action required.*

Ref:	Location and Identified Issue	Response Comment / Action
S4 036	*Problem S4.036* *3.275. Location: Robins Lane Bridge.* *3.276. Summary: Barrier on curve – provision of bike guard.* *3.277. Drawing HAS528983-ACJV-HRR-S4-41970-DR-C-0010 shows the provision of a VRS on the curve for Robins Lane Bridge. It is not clear as to what specific barrier system is proposed.* *3.278. Whilst the local speed limits, proposed traffic signing and the geometry of the road should mitigate vehicle speeds, motorcyclists may be prone to loss of control collisions at this location, particularly in wet weather. This can lead to an increased risk of severity in terms of injury, if an unseated rider collides with the barrier.* *Recommendation* *It is recommended that the designers investigate the provision of 'bike friendly' barrier systems (EN1317 compliant) in order to reduce the injury severity of riders colliding with the VRS at this location.*	*Designer Response* *3.280. Disagree - A review of the barrier provision along Robins Lane was carried out. The section of road in question comprises a 20mph design speed and would therefore not necessarily be subject to a RRRAP assessment. However, the design team have proposed a safety barrier on the outside of the bend at Robins Lane due to the height of the embankment.* *3.281. Furthermore, the traffic modelling associated with the 2035 DS+ scenario gives a peak AM and PM flow of 4 Passenger Car Units.* *3.282. Given the low speeds expected and volume of vehicles predicted, the Designer is of the opinion that the provision of mitigation measures for motorcyclists to be excessive when considered against the likelihood of the risk.* *3.283. The Designer recommends no changes to the design. Action Closeout* *This is recorded in the Exemption Report: A14 S4 Stage 2 RSA - Exemption Report.pdf.* *Exemption Report Technical Assurance Lead's Statement: "I agree with the Design Team and consider that the auditor's recommendations are not appropriate at this location".* *No further action required.*
S4 037	*Problem S4.037* *3.284. Location: Robins Lane Bridge.* *3.285. Summary: VRS – P1 ramped terminal on departure side.* *3.286. Drawing HAS528983-ACJV-HRR-S4-41970-DR-C-0010 shows a P1 on the departure side on the LAR eastbound carriageway just east of Robins Lane Bridge.* *3.287. The provision of P1 terminals can increase the severity of head on impact collisions, as the ramped end arrangement may cause vehicles to launch / overturn.* *Recommendation* *It is recommended that this P1 terminal is replaced with a P4 terminal.*	*Designer Response* *3.289. Agree – The pointer [on the RSA sketch] seems to point to the upstream not downstream side of the bridge. However, this is immaterial as, due to the single carriageway nature of the LAR, the hazard identified by the auditor is valid.* *3.290. The P1 terminal proposed on the departure end of the barrier therefore needs to be changed to P4.* *3.291. The design will be amended accordingly. Action Closeout* *The agreed change from P1 to P4 terminal at this location was updated in revision C01 of drawing HA528983-ACJV-HRR-S4_41970-DR-C-0010, which has been issued to the Contractor.* *No further action required.*

Ref:	Location and Identified Issue	Response Comment / Action
S4 038	*Problem S4.038* *3.292. Location: Swavesey to Bar Hill – LAR.* *3.293. Summary: Lack of right-turn lane provision on LAR.* *3.294. Drawing HAS528983-ACJV-HSN-S4-41250-DR-C-0008 to Drawing HAS528983-ACJV- HSN-S4-42700-DR-C-0012 shows a number of accesses on the northern side of the LAR.* *3.295. The LAR is predominantly straight in its alignment and it is understood that it is not lit.* *3.296. As a consequence, the Audit Team consider that there is a potential propensity for shunt type collisions with vehicles waiting to turn right into side roads, particularly at night or during conditions of poor visibility.* *Recommendation* *3.297. It is recommended that further measures are investigated to mitigate the impacts of shunt type collisions with vehicles waiting to turn right.* *This may include 'side road ahead' warning signs, flag direction signs at each junction and the provision of right-turn lanes/pockets on the LAR.*	*Designer Response* *3.299. Agree - The need for provision of specific right turning measures, in accordance with TD41/95, has been reviewed. The following side roads are accessed off the local road access (LAR) between Swavesey & Bar Hill:* • *Ch.2450-Pond access* • *Ch.2650-Access road to sewage plant* • *Ch.2800-Pond access* • *Ch.3050-Robin's Lane* *3.300. The majority of the side roads on the LAR provide access to ponds, where the vehicle movements are occasional. The side roads at Ch. 2650 and at Ch.3050 have low traffic volumes and therefore would not warrant dedicated turning lanes as per TD 41/95.* *3.301. Robin's Lane junction, which is a major junction on the LAR, shown on drawing HAS528983-ACJV-HSN-S4-41250-DR-C-0010 is provided with flag directional signs and lighting.* *3.302. The Designer recommends no changes to the design. Action Closeout* *The Road Safety Auditor viewed the traffic signs drawing HA528983-ACJV-HSN-S4_41970-DR-C-0010.pdf (P02.1) as stated in Appendix A2 of RSA2. Their comments were addressed in the drawing HA528983-ACJV-HSN-S4_41970-DR-C- 0010_P02.pdf, where Robin's Lane junction is provided with flag directional signs. The other side roads are private accesses which are not generally signed, due to the low traffic movements as discussed in the Designer's Response. All drawings associated with these locations have been issued for Construction.* *No further action required.*
S4 050	*Problem S4.050* *3.393. Location: Bar Hill to Girton LAR.* *3.394. Summary: Priority junction with Cambridge Crematorium.* *3.395. Drawing No. HA528983-ACJV-HSN-A1307-DR-C-0004 shows the proposed LAR alignment and priority junction for Cambridge Crematorium.* *3.396. The orientation of the 'side-road ahead' warning sign (to TSR&GD Diag.505.1) on the LAR eastbound approach to the junction is incorrect.* *3.397. The Audit Team is of the opinion that this may be misleading to road users and could result in an increased risk of collisions.* *Recommendation* *3.398. It is recommended that the type and positioning of this warning sign is reviewed and corrected.*	*Designer Response* *3.399. Agreed – A diagram 506.1 will be provided in the design and located 180m back from the junction.* *Action Closeout* *The location of the Crematorium access road has moved during design development, therefore, the action identified by the Designer is no longer applicable.* *The signs associated with the junction have been removed as they are no longer suitable at the revised access location.* *No further action required.*

Ref:	Location and Identified Issue	Response Comment / Action
S4 051	y 3.400. Location: Bar Hill to Girton LAR. 3.401. Summary: Pedestrians crossing near Cambridge Crematorium. 3.402. Drawing No. HA528983-ACJV-HSN-A1307-DR-C-0004 shows the proposed LAR alignment and the priority junction for Cambridge Crematorium. 3.403. There is a bus stop located on the northbound carriageway and a pedestrian refuge island immediately behind this to assist pedestrians in crossing the road at this location. 3.404. Whilst pedestrian activities may well be low, users may be elderly and experience greater difficulty in crossing. This could lead to potential collisions between passing vehicles and pedestrians attempting to cross. Recommendation 3.405. It is recommended that further measures are investigated to manage speeds through this section. 3.406. This could typically include a localised reduction in speed limit, change in carriageway surface type and localised road lighting to aid pedestrians in crossing.	y 3.407. Agree - Proposals associated with the bus stop and associated pedestrian crossings are under review due to changes to the access at Cambridge Crematorium. The new proposal will need to be reviewed by the auditor in the next phase. 3.408. The NMU crossings will be considered as part of this review. Action Closeout There is a potential pedestrian- vehicle conflict at this uncontrolled crossing. The locations of Priority junction for the Cambridge Crematorium is now changed. The location is now moved further south on the A1307. However, there is no change in the configuration of the junction configuration, bus stop or the pedestrian crossing. The designs were submitted to the Cambridgeshire County Council and has gone through the formal review process of the Council. The issues were discussed during the meetings with the County Council & Cambridgeshire Constabulary. No speed management measures were considered necessary at this stage. The requirements of mitigation measures will be further considered at the Post Opening Project Evaluation (POPE), also during the design stage 4 audit and operation of the highway. This is recorded in the Exemption Report: A14 S4 Stage 2 RSA - Exemption Report.pdf. Exemption Report Technical Assurance Lead's Statement: "I agree with the Design Team and consider that the auditor's recommendation to investigate speeds at this location can be considered later, once the highway is operational". No further action required.
S4 052	Problem S4.052 Location: Bar Hill to Girton LAR. Summary: Alignment may encourage high speeds. Drawing No. HA528983-ACJV-HSN-A1307-DR-C-0007 shows the proposed LAR alignment for significant sections, its alignment is predominantly straight. The route is subject the National Speed Limit and is understood to have a design speed of 100kph. The combination of these factors lends themselves to a high-speed environment. This may manifest itself in loss of control or run off collisions. Recommendation It is recommended that further measures are investigated to manage speeds through this section. This could typically include a localised reduction in speed limit. This should be discussed with Cambridgeshire Police.	Designer Response 3.415. Agree - This will be discussed with Cambridge County Council and Police in the next design phase. Action Closeout Excessive speeds and overtaking are a concern. The alignment was reviewed for any possible modifications. No appreciable improvements could be done to this stretch of road, within the design constraints. The designs were submitted to the Cambridgeshire County Council and has gone through the formal review process of the Council. The issues were discussed during the meetings with the County Council & Cambridgeshire Constabulary. No speed management measures were considered necessary at this stage. The requirements of speed management measures will be considered at the Post Opening Project Evaluation (POPE), also during the design stage 4 audit and operation of the highway. This is recorded in the Exemption Report: A14 S4 Stage 2 RSA - Exemption Report.pdf. Exemption Report Technical Assurance Lead's Statement: "I agree with the Design Team and consider that the auditor's recommendation to investigate speeds at this location can be considered later, once the highway is operational". No further action required.

Ref:	Location and Identified Issue	Response Comment / Action
S4 053	*Problem S4.053* *Location: Bar Hill to Girton LAR.* *Summary: Crossroads junction on LAR.* *Drawing No. HA528983-ACJV-HSN-A1307-DR-C-0008 shows a crossroads junction on the A1307 to Dry Drayton LAR at approximate Chainage 0375. The Audit Team has previously identified issues pertaining to this link in terms of vehicle speeds.* *There is no right-turn facility at this junction in either direction.* *Table 2/1 of HD42/95 states that a rural S2 crossroads is permissible. It also states that the provision of a right turn facility should be considered where vehicles waiting on the major road (LAR eastbound in particular) may impede traffic flow and create a hazard.* *The Audit Team are of the opinion that without the provision of right-turn lanes, there is an increased risk of shunt type collisions on the LAR at this crossroads.* *Recommendation* *It is recommended that the design is reviewed with a view to providing a right-turn facility at this location for each direction on the LAR.*	*Designer Response* *3.423. Agreed. Right turn lane facility will be considered, only for the traffic approaching eastbound from LAR and turning right into the Avenue, in the Design Phase 2. In the opposite direction the fourth arm is a field access and will be only used intermittently.* *Action Closeout* *Traffic data was reviewed. The designers consider right turn lanes at this junction is not necessary. The eastern arm is not a through road and is providing access to properties only. Traffic expected on the western arm is also very low.* *This is recorded in the Exemption Report: A14 S4 Stage 2 RSA - Exemption Report.pdf.* *Exemption Report Technical Assurance Lead's Statement: "I agree with the Design Team and consider that the auditor's recommendation to review the design and add a right turn facility is not appropriate at this location".* *No further action required.*
S4 054	*Problem S4.054* *Location: Bar Hill to Girton LAR – eastern link to A1307.* *Summary: NMU Crossing Point.* *Drawing No. HA528983-ACJV-HSN-A1307-DR-C-0009 shows the proposed alignment of the LAR adjacent to the new A14 westbound link road.* *The Audit Team understands that the intention is for NMUs to cross the LAR immediately to the east of the A14 link. However, there is no formal crossing point shown.* *Without a formalised crossing facility there is an increased risk of collisions between NMUs and vehicular traffic.* *Recommendation* *3.429. It is recommended that if an NMU crossing point is proposed at this location, then appropriate formal provision is made (i.e. dropped kerbs, tactile paving, appropriate way-finding signing etc).*	*Designer Response* *3.430. Agree with alternative provision – There is no proposed NMU crossing provision as described by the audit team. A crossing point is proposed on the roundabout gyratory to cross NMU's across the maintenance access track. This crossing point is a formal provision.* *3.431. The Designer recommends no changes to the design. Action Closeout* *There is no proposed NMU crossing provision as described by the audit team. A crossing point is proposed on the roundabout gyratory to cross NMU's across the maintenance access track. This crossing point is a formal provision.* *This is recorded in the Exemption Report: A14 S4 Stage 2 RSA - Exemption Report.pdf.* *Exemption Report Technical Assurance Lead's Statement: "I agree with the Design Team and consider that the auditor's recommendation to investigate speeds at this location can be considered later, once the highway is operational".* *No further action required.*

Ref:	Location and Identified Issue	Response Comment / Action
S4 063	*Problem S4.063* *Location: Roundabout at Oakington Road – Bar Hill to Girton LAR.* *Summary: Conflicts between approaching vehicles and crossing NMUs.* *Drawing No. HA528983-ACJV-HSN-A1307-DR-C-0003 shows the proposed roundabout for the Oakington Road junction with the Bar Hill to Girton LAR.* *The eastbound approach to the roundabout from Dry Drayton Road appears to form a two-lane entry at the roundabout, however, only one traffic lane appears to be marked.* *On this approach, there is NMU crossing route (also on the western side of the roundabout). There is a traffic splitter island with hatched markings which may encourage pedestrians to stand in the carriageway (hatched area) when waiting to cross.* *This arrangement could potentially result in conflicts between NMUs waiting to cross and vehicles approaching the junction.* *Recommendation* *It is recommended that the layout of this approach is reviewed in terms of forming two lanes at the entry and the hatched road markings adjacent to the traffic splitter island.*	*Designer Response* *3.496. Agreed – Hatch markings will be removed and marked as two lanes.* *Action Closeout* *The road marking proposals have been reviewed at this location in line with design development, and hatch road markings have been applied to clearly demarcate the single lane approach to the roundabout. A two-lane approach is not required at this location.* *Drawing HA528983-ACJV-HMK-S4_A1307-DR-C-0003, revision C05, shows that the hatch markings have been amended on the western arm of the roundabout south of Dry Drayton overbridge. There is now a gap in the hatching at the NMU crossing location. The updated drawing has been issued to the Contractor.* *No further action required.*
S4 066	*Problem S4.066* *Location: A1307 Swavesey to Bar Hill LAR Westbound.* *Summary: End treatment for barriers.* *Drawing HAS528983-ACJV-HRR-S4-42350-DR-C-0012 shows the barrier provision in the median between the A14 carriageway and the LAR.* *At approximate Chainage 42625 there is a P1 terminal on the approach side to the barrier.* *The provision of P1 terminals can increase the severity of head on impact collisions, and cause vehicle launching / overturning with this barrier arrangement.* *Recommendation* *It is recommended that this P1 terminal is replaced with a P4 terminal.*	*Designer Response* *3.518. Agree – The pointer [on the RSA sketch] seems to point to the upstream not downstream side of the bridge. However, this is immaterial as, due to the single carriageway nature of the LAR, the hazard identified by the auditor is valid.* *3.519. The P1 terminal proposed on the departure end of the barrier therefore needs to be changed to P4.* *3.520. The design will be amended accordingly. Action Closeout* *Drawing HA528983-ACJV-HRR-S4_42700-DR-C-0012 shows barrier terminal P1 changing to P4 at revision C01. This update has been issued to the Contractor. No further action is required.*

Source: Road Safety Audit Response Report to the Interim Stage 3 RSA, Document reference: HA528983-ACJV-HGN-S3A_RSA3-RP-C-0001 Revision P01.

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. A Reference Key Plan is shown at **Appendix B.**

Swavesey Roundabout

Problem 001

Location: *A14 eastbound, Swavesey northern roundabout.*

Summary: *Lane markings on the entry arm approaches and circulatory carriageway markings may result in conflicts.*

3.1. Vehicles turning right from the A14 Swavesey eastbound exit slip road, onto the LAR towards Swavesey and the Bucking Way roundabout would ordinarily be in Lane 2.

3.2. Similarly, vehicles turning right from Swavesey Link Road, west onto the A1307, would be in Lane 2 on the approach to the roundabout.

3.3. The Audit Team is of the opinion that the lane marking on the approaches and on the circulatory carriageway require motorists to change lanes in order to exit their intended destination.

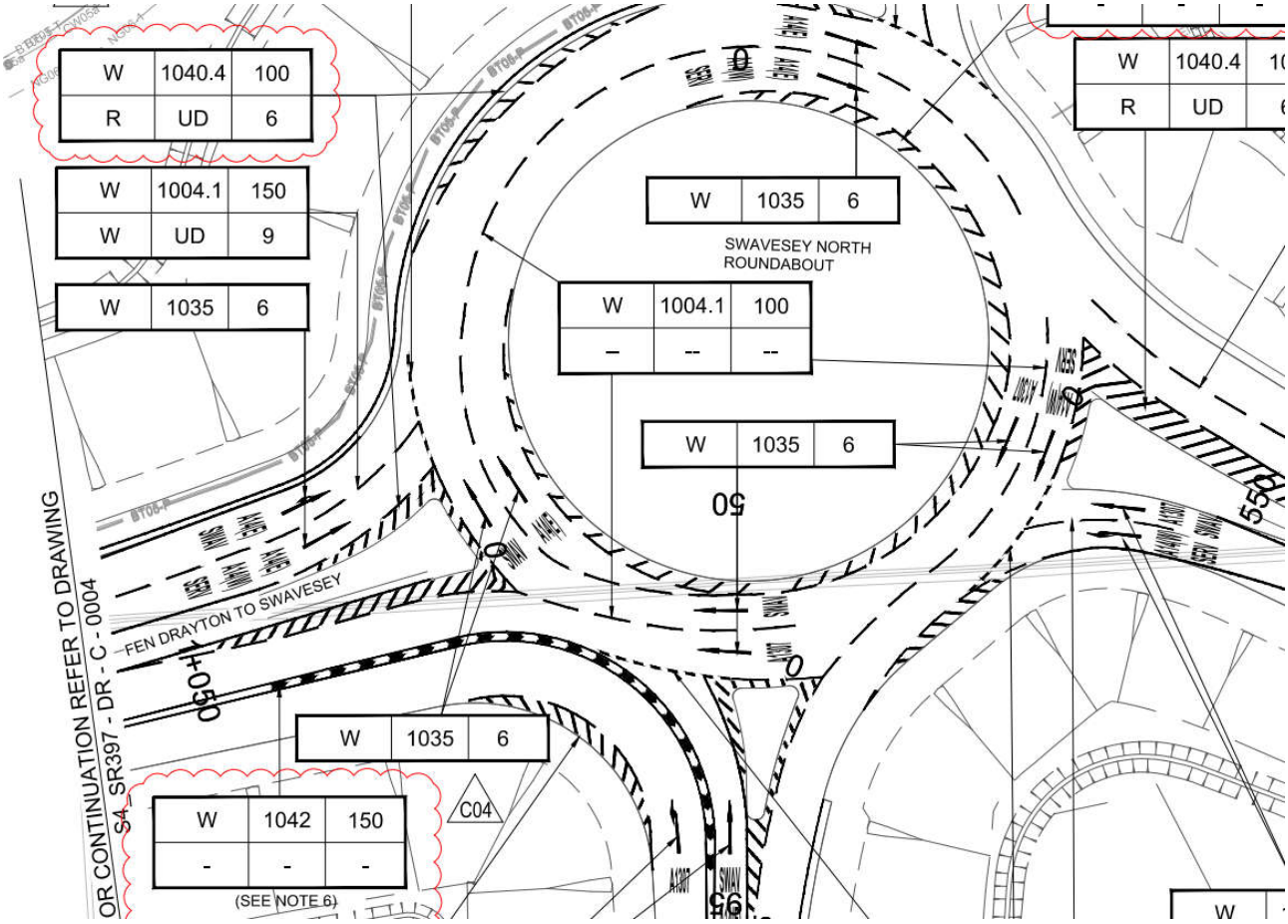
3.4. This is likely to result in conflicts / side-swipe collisions on the roundabout.

Recommendation

3.5. It is recommended that the configuration of entry arm approach lanes and traffic lanes on the circulatory carriageway are reviewed and amended.

Designer Response

3.6. **Agreed** – The Designer has reviewed Drg No HA528983-ACJV-HMK-S4_SR397-DR-C-0005 - C04 [refer snapshot below] and is content there is no confusion in the configuration of road marking provision



3.7. Potentially this could be an incomplete installation. Construction details should be verified against the IFC information.

Overseeing Organisation Comment

3.8. OO agree Designers Response - arrows and destination markings on the circulatory carriageway were missing at the time of audit - to be raised as DOWLS.

Agreed RSA Action

3.9. OO to raise DOWLs for incomplete items.

Problem 002

Location: *Bucking Way Roundabout.*

Summary: *Absence of traffic bollards.*

3.10. At the time of the site visit, there were no reflective traffic bollards present on the traffic splitter islands.

3.11. The Audit Team is of the opinion that their absence may result in drivers colliding with the traffic splitter islands, particularly at night or in poor weather conditions.

Recommendation

3.12. It is recommended that plain-faced reflective bollards are provided on all traffic splitter islands at the roundabout.

Designer Response

3.13. **Disagree** – The Designer notes that Drawing Number Drg No HA528983-ACJV-HSN-S4_SR397-DR-C-0006_C04 does not show plain faced bollards on the splitter islands facing traffic on the circulatory traffic. However, there is a flag type sign on each splitter island, and it is considered that this represents sufficient provision to highlight the presence of the splitter island.

3.14. The Designer has reviewed the proposals for all the roundabouts in Section 4 along the Local Access Road and found they're consistent with the proposal at Bucking Way roundabout – i.e. plain faced bollards are not provided on any splitter islands facing traffic approaching on the circulatory carriageway.

Overseeing Organisation Comment

3.15. OO agree Designers Response.

Agreed RSA Action

3.16. No further action considered necessary.

Problem 003

Location: *LAR westbound, between approximate Ch.1+400 and 1+300.*

Summary: *Conspicuousness of the change in alignment.*

3.17. On the westbound carriageway of the LAR towards the Bucking Way roundabout, the horizontal alignment comprises a right-hand curve before the NMU bridge, at approximate Ch 1+650.

3.18. This may not be readily anticipated by motorists who have been travelling some distance on a straight alignment, particularly at night (although the Audit Team were unable to verify this during the hours of darkness due to road closures).

3.19. There may be an increased risk of loss of control / vehicles leaving the carriageway to the nearside if this bend is not well defined.

Recommendation

3.20. It is recommended that conspicuousness of the bend is increased using hazard marker posts, or similar.

Designer Response

3.21. **Agreed** – Signing provision on the approach should be re-considered and amendments made, as required, to increase conspicuity of the bend on the approach to the roundabout.

Overseeing Organisation Comment

3.22. OO agree Designers Response.

Agreed RSA Action

3.23. Designer to review and amend IFC documentation to ensure sufficient warning is given on the approach to the bend

Problem 004

Location: *LAR, northern side, approximate Ch.1+375*

Summary: *Risk of cycle conflicts with pedestrians and motor traffic.*

3.24. The Swavesey NMU bridge has a continuation of the NMU route that descends towards the northern side of the LAR. There are no measures at the bottom of the ramp to mitigate speeds of cyclists.

3.25. This has the potential for cyclists to either exit rapidly onto the LAR, potentially conflicting with vehicles traversing along it, or to collide with pedestrians traversing along the NMU route on the northern side of the LAR.

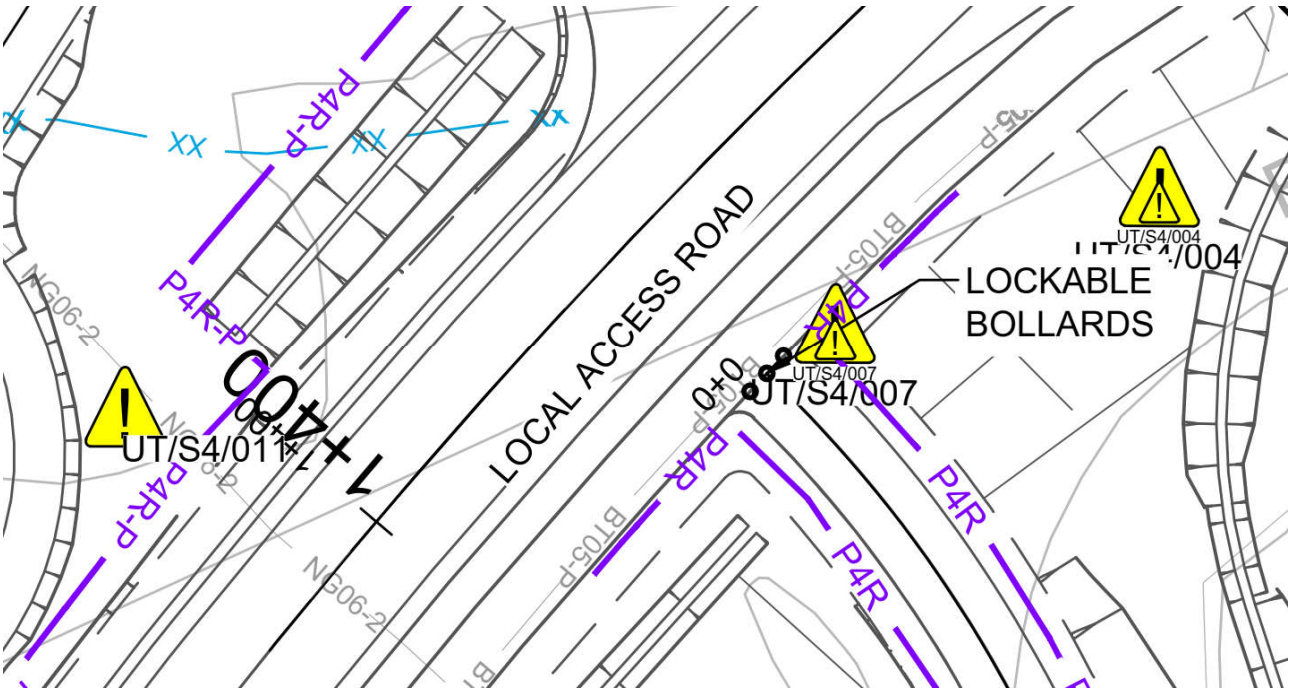
Recommendation

3.26. It is recommended that measures are introduced to reduce cycle speeds on the descent from the NMU overbridge.

Designer Response

3.27. **Agreed** – The Designer agrees that measures to control cycle speeds on the ramp should be considered and implemented where considered appropriate.

3.28. The Designer notes that the AIP for the associated footbridge requires provision to be made for vehicular access; Drg No HA528983-ACJV-HFE-S4_SR397-DR-C-1007-C04 shows the proposals for lockable bollards [refer snapshot below].



Overseeing Organisation Comment

3.29. OO agree Designers Response.

Agreed RSA Action

3.30. Designer to determine provision of suitable measures to both manage cycle speeds AND allow vehicular access for maintenance to the footbridge.

Problem 005

Location: *LAR, south-east of Bucking Way Roundabout.*

Summary: *No formalised pedestrian crossing points between the NMU route and nearby bus stops.*

3.31. There are two bus stops situated either side of the LAR, between the Swavesey NMU bridge and the Bucking Way Roundabout. There are no formal pedestrian crossing points provided.

3.32. This may result in pedestrians seeking to cross at inappropriate locations, increasing the risk of injury from either trips and falls or collisions with motor traffic.

Recommendation

3.33. It is recommended that the provision for a formal pedestrian crossing facility is investigated and provided where appropriate.

Designer Response

3.34. **Agreed** – The design includes provision for pedestrians to cross this link in two stages using a defined crossing point [with tactile paving] across the splitter island at the roundabout.

3.35. Approximate Chainages of pedestrian features are:-

- Crossing point at roundabout Chainage 1+165m.
- Alighting point at Bus Stop Chainage 1+260m
- Toe of ramp from NMU bridge over A14 Chainage 1+380m

3.36. Given the proximity of the crossing point at the roundabout to the bus lay-by it is considered a suitable provision for pedestrians to safely cross the LAR has been proposed.

Overseeing Organisation Comment

3.37. OO agree Designers Response.

Agreed RSA Action

3.38. No further action proposed.

Problem 006

Location: *LAR, northern side, between approximate Ch.1+900 and 2+000*

Summary: *Entry / exit arrangement from fuel filling station.*

3.39. On the northern side of the LAR, east of the Swavesey NMU bridge, there is an existing fuel filling station (currently not in operation at the time of the site visit).

3.40. Whilst not delineated from the highway, the absence of signed entry and exit points ('IN' and 'OUT') has the potential for vehicles to collide in the opposite direction.

Recommendation

3.41. It is recommended that the Overseeing Organisation liaises with the owner / proprietor of the filling station to agree entry and exit points for access and provide the necessary signing.

Designer Response

3.42. **Agreed** – The Designer notes the recommendation for the OO to consult with the owner s/ proprietors of this site.

3.43. The proposals comprise 2 simple t- junction designs with the removal of the diverging/merging tapers provided as part of the existing layout.

Overseeing Organisation Comment

3.44. OO agree Designers Response.

Agreed RSA Action

3.45. Overseeing Organisation is to liaise with the owners / proprietors of the filling station to agree entry and exit points for access and provide the necessary signing

Problem 007

Location: *LAR, southern side, between approximate Ch.2+000 and 1+850*

Summary: *Risk of collisions due to headlight glare.*

3.46. At the time of the site visit, there was a noted absence of screening between the A14 eastbound carriageway and the LAR.

3.47. The Audit Team is of the opinion that this has the potential for drivers on both carriageways to be distracted / blinded by vehicles on the adjoining carriageway, leading to loss of control collisions.

Recommendation

3.48. It is recommended that appropriate screening is provided between the two carriageways.

Designer Response

3.49. **Agreed** – The Designer notes that provision of screening is included in the IFC documentation and is already substantially installed between the LAR and the A14.

3.50. The Designer should review the IFC documentation in order to verify the extents of screening are appropriate.

3.51. The OO should then verify that works have been completed in accordance with the IFC documentation and raise DOWLs where there are gaps.

Overseeing Organisation Comment

3.52. OO agree Designers Response.

Agreed RSA Action

3.53. Designer to review the IFC documentation and amend as appropriate to ensure no gaps in provision.

3.54. OO to verify that works have been completed in accordance with the IFC documentation and raise DOWLs where there are gaps

Problem 008

Location: *LAR, between the fuel filling station and Robins Lane junction.*

Summary: *Risk of high traffic speeds / inappropriate overtaking manoeuvres.*

3.55. There are sections of long straight alignment on the LAR. The links are subject to the National Speed Limit (NSL).

3.56. The Audit Team is concerned that there is a propensity for high speed, overtaking manoeuvres and subsequent head-on collisions.

Recommendation

3.57. This matter was raised in the previous RSA2 for Section 4 (albeit for the section east of the B1050 at Bar Hill). Nonetheless, it is recommended again that additional measures are investigated on this link to mitigate the occurrence of high traffic speeds.

Designer Response

3.58. **Agreed** – This issue was raised as Problem S4.052 in the Section 4 RSA2. The conclusion at that time, as reported in the EXCEPTION report [dated 28/02 2019], was:-

- Excessive speeds and overtaking are a concern. The alignment was reviewed for any possible modifications. No appreciable improvements could be done to this stretch of road, within the design constraints.
- The designs were submitted to the Cambridgeshire County Council and has gone through the formal review process of the Council. The issues were discussed during the meetings with the County Council & Cambridgeshire Constabulary. No speed management measures were considered necessary at this stage.
- The requirements of speed management measures will be considered at the Post Opening Project Evaluation (POPE), also during the design stage 4 audit and operation of the highway.
- Exception Report Technical Assurance Lead's Statement: "I agree with the Design Team and consider that the auditor's recommendation to investigate speeds at this location can be considered later, once the highway is operational".

3.59. A new standard [GG 119] has been introduced since the previous audit was undertaken and this incorporates the following changes to the above responses regarding POPE and Road Safety Audit Stage 4:-

- The Post Opening Project Evaluation (POPE), the Designer to confirm whether this applies to local as well as Trunk Roads.

Road Safety Audit Stage 4 is now only undertaken after at least 12 months of collision data is available on the new and only if this data indicates problems. The timescale for this assessment is beyond the scope of the current A14 Contract.

Overseeing Organisation Comment

3.60. OO agree Designers Response.

Agreed RSA Action

3.61. Designer to confirm whether remit of POPE exercise would include consideration of new local roads.

3.62. OO to confirm to CCC who would be responsible for determining the need for and if necessary, undertaking a Road Safety Audit Stage 4

4. Road safety audit decision log

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
Problem 001 Lane markings on the entry arm approaches and circulatory carriageway markings may result in conflicts	the configuration of entry arm approach lanes and traffic lanes on the circulatory carriageway are reviewed and amended.	**Agreed**	OO agree Designers Response - arrows and destination markings on the circulatory carriageway were missing at the time of audit - to be raised as DOWLS	OO to raise DOWLs for incomplete items
Problem 002 Absence of traffic bollards	plain-faced reflective bollards are provided on all traffic splitter islands at the roundabout	**Disagree**	OO agree Designers Response	No further action proposed
Problem 003 Conspicuousness of the change in alignment	conspicuousness of the bend is increased using hazard marker posts, or similar.	**Agreed**	OO agree Designers Response	Designer to review and amend IFC documentation to ensure sufficient warning I given on the approach to the bend
Problem 004 Risk of cycle conflicts with pedestrians and motor traffic	measures are introduced to reduce cycle speeds on the descent from the NMU overbridge	**Agreed**	OO agree Designers Response	Designer to determine provision of suitable measures to both manage cycle speeds AND allow vehicular access for maintenance to the footbridge
Problem 005 No formalised pedestrian crossing points between the NMU route and nearby bus stops	the provision for a formal pedestrian crossing facility is investigated and provided where appropriate	**Agreed**	OO agree Designers Response	No further action proposed
Problem 006 Entry / exit arrangement from fuel filling station	the Overseeing Organisation liaises with the owner / proprietor of the filling station to agree entry and exit points for access and provide the necessary signing	**Agreed**	OO agree Designers Response	Overseeing Organisation is to liaise with the owners / proprietors of the filling station to agree entry and exit points for access and provide the necessary signing
Problem 007 Risk of collisions due to headlight glare	appropriate screening is provided between the two carriageways	**Agreed**	OO agree Designers Response	Designer to review the IFC documentation and amend as appropriate to ensure no gaps in provision. OO to verify that works have been completed in accordance with the IFC documentation and raise DOWLs where there are gaps
Problem 008 Risk of high traffic speeds / inappropriate overtaking manoeuvres	This matter was raised in the previous RSA2 for Section 4 (albeit for the section east of the B1050 at Bar Hill). Nonetheless, it is recommended again that additional measures are investigated on this link to mitigate the occurrence of high traffic speeds	**Agreed**	OO agree Designers Response	Designer to confirm whether remit of POPE exercise would include consideration of new local roads. OO to confirm to CCC who would be responsible for determining the need for and if necessary, undertaking a Road Safety Audit Stage 4

5. Design organisation and Overseeing Organisation statements

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:	[redacted]
Signed	[redacted]
Position:	DESIGN MANAGER
Organisation:	ACJV
Date:	07.07.20

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:	[redacted]
Signed:	[redacted]
Position:	TECHNICAL ASSURANCE LEAD
Organisation:	HIGHWAYS ENGLAND
Date:	07/07/20.

Adopting Highway Authority [Cambridgeshire County Council] statement

On behalf of the Adopting Highway Authority 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:	
Signed:	
Position:	
Organisation:	
Date:	

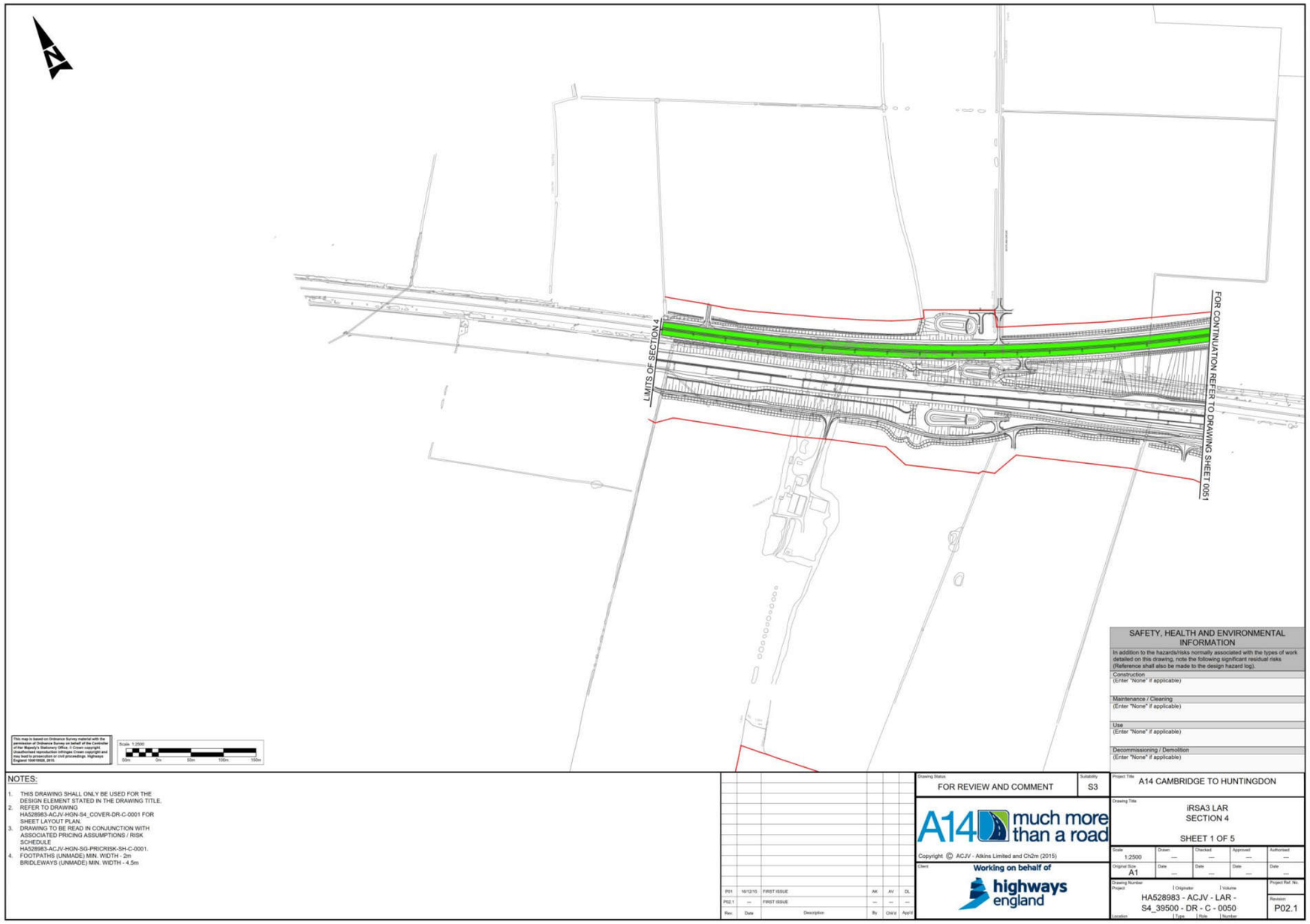
.

Appendix A - Not used

Appendix B Reference Key Plans

Project Support Framework (Consultancy) 2011 – 2015
A14 Cambridge to Huntingdon Improvement Scheme:
Section 4 – Swavesey and LAR link from Swavesey to Bar Hill
Interim Stage 3 Road Safety Audit

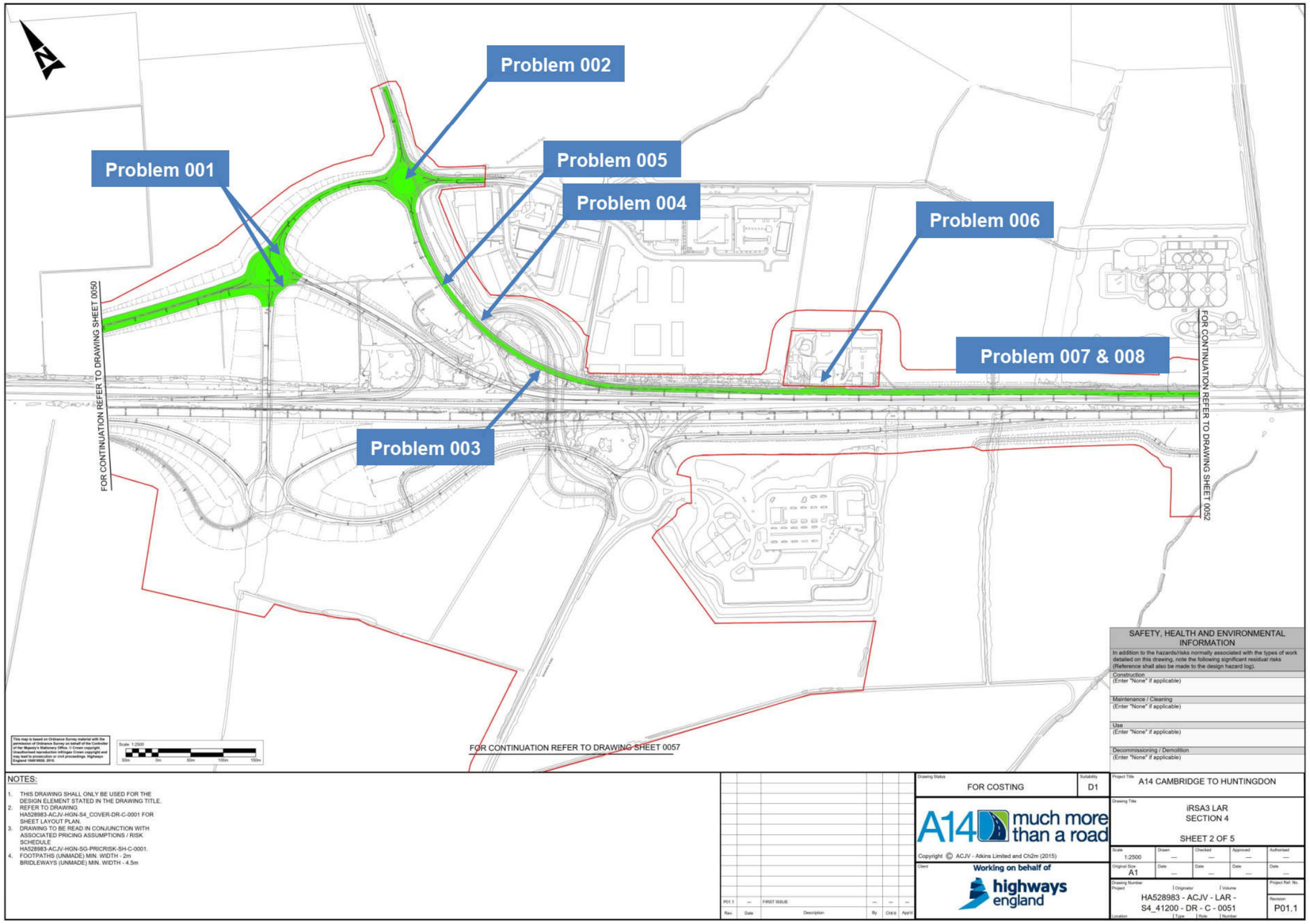
B-1 Key Plan, Section 4 – Swavesey and LAR link from Swavesey to Bar Hill: Sheet 1 of 3



Source: A14 Integrated Delivery Team, HA528983-ACJV-LAR-S4_39500-DR-C-0050_P02.1 (Not to scale)

Project Support Framework (Consultancy) 2011 – 2015
A14 Cambridge to Huntingdon Improvement Scheme:
Section 4 – Swavesey and LAR link from Swavesey to Bar Hill
Interim Stage 3 Road Safety Audit

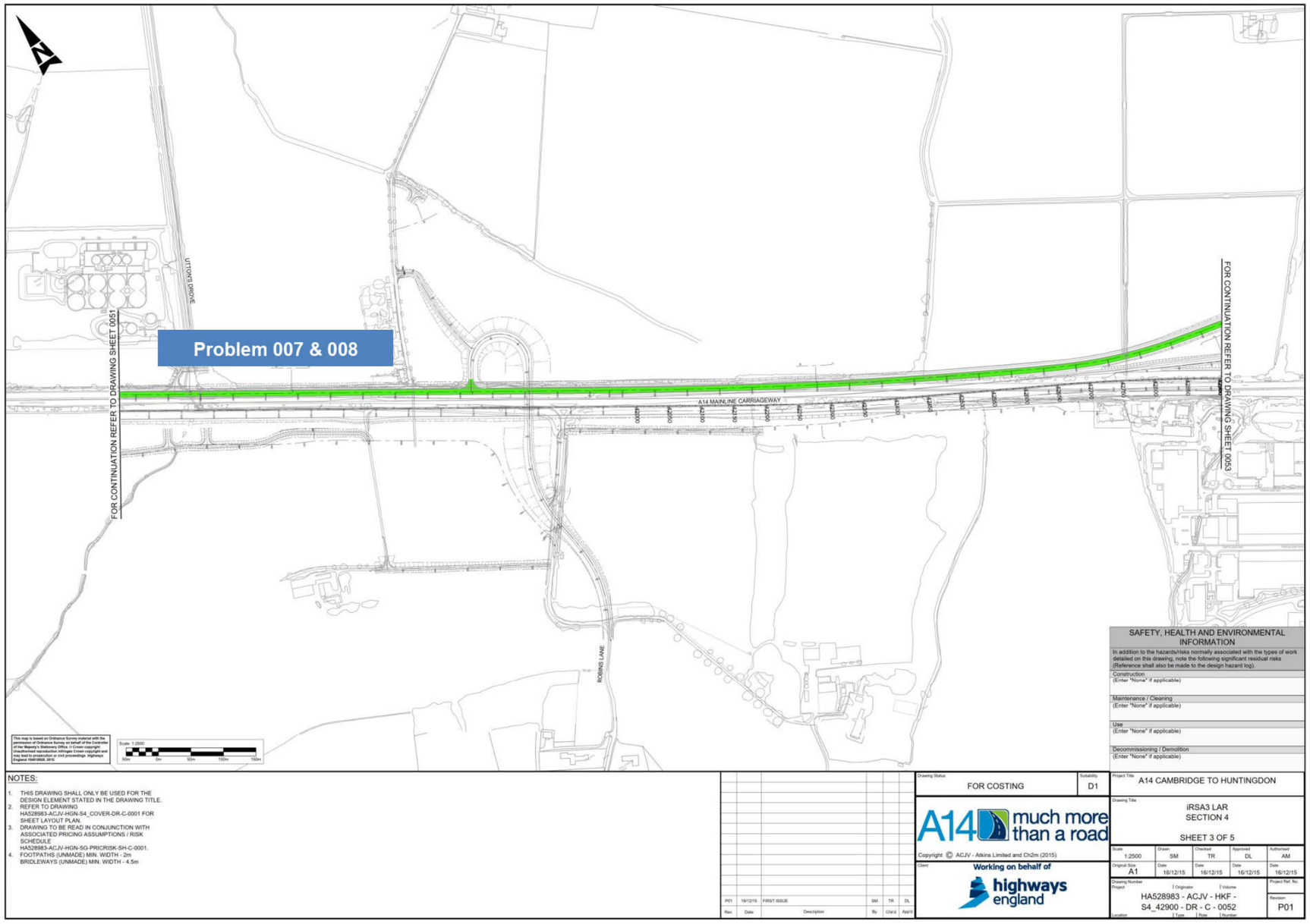
B-2 Key Plan, Section 4 – Swavesey and LAR link from Swavesey to Bar Hill: Sheet 2 of 3



Source: A14 Integrated Delivery Team, HA528983-ACJV-LAR-S4_41200-DR-C-0051_P01.1 (Not to scale)

Project Support Framework (Consultancy) 2011 – 2015
A14 Cambridge to Huntingdon Improvement Scheme:
Section 4 – Swavesey and LAR link from Swavesey to Bar Hill
Interim Stage 3 Road Safety Audit

B-3 Key Plan, Section 4 – Swavesey and LAR link from Swavesey to Bar Hill: Sheet 3 of 3



Source: A14 Integrated Delivery Team, HA528983-ACJV-HKF-S4_39500-DR-C-0052_P01 (Not to scale)