
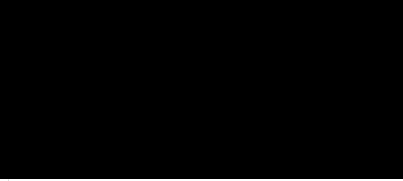


Project details

Report Title	Butt Lane / Gloucester Road / Morton Way Stage 1 Road Safety Audit Response Report
Date	12 August 2020
Document reference and revision	39209_5567_TN002
Prepared by	Stantec
On behalf of	South Gloucestershire Council

Authorisation sheet

Project	Land West of Park Farm, Thornbury
Report title	Butt Lane / Gloucester Road / Morton Way Stage 1 Road Safety Audit Response Report
Prepared by:	
Name	K. Stock
Position	Associate
Signed	
Organisation	Stantec
Date	12.08.2020
Approved by:	
Name	Myles Kidd
Position	Control Manager
Signed	
Organisation	
Date	Thursday 13th August 2020

TECHNICAL NOTE

Job Name: West of Park Farm, Thornbury
Job No: 39209
Note No: 5567_TN001
Date: 12 August 2020
Prepared By: K. Stock
Subject: **Road Safety Audit Response Report - Butt Lane / Gloucester Road / Morton Way**

1. Introduction

- 1.1. Stantec has been commissioned by Barwood Development Securities Ltd & North West Thornbury Landowner Consortium (Client) to provide transport advice in support of the proposed mixed-use development at West of Park Farm, Thornbury.
- 1.2. An updated outline planning application (application reference PT18/6450/O) was submitted to South Gloucestershire Council (SGC) in January 2020 for up to 595 dwellings and land for a primary school.
- 1.3. As part of the proposals, mitigation is required at the junction between Butt Lane, Gloucester Road and Morton Way. The scheme consists of the upgrade of the existing junction from a staggered priority junction to a signalised junction with improvements to pedestrian and cycle provision.
- 1.4. A Stage 1 Road Safety Audit (RSA) was requested by South Gloucestershire Council (SGC) to assess the proposals.

Stage 1 Road Safety Audit

- 1.5. TMS Consultancy (TMS) were commissioned by Stantec on behalf of our Client to undertake an RSA of the proposed mitigation scheme at the Butt Lane junction.
- 1.6. An RSA brief was submitted to TMS to inform the RSA. The brief was agreed by SGC prior to the RSA being undertaken.
- 1.7. As the audit has been carried out during the COVID-19 pandemic, a site visit has not been carried out. SGC issued guidance in April 2020 whereby a relaxation to the RSA Standard (GG119) was given, allowing audit teams to use online mapping in lieu of a site visit. The audit was carried out on 9th June 2020.
- 1.8. A copy of the RSA is provided in **Appendix A**.

Problems and Improvements Raised in the RSA

- 1.9. The RSA identifies a number of problems and recommendations which the audit team consider require action in order to improve the safety of the scheme and minimise collision occurrence. A scheme drawing showing the location of the specific problems is included in Appendix B of the RSA.

2. Key Personnel

- 2.1. The overseeing organisation is South Gloucestershire Council.

TECHNICAL NOTE

2.2. The RSA team were from TMS Consultancy and were as follows:

- Lee Williams – BSc (Hons), MIHE
Highways England Approved RSA Certificate of Competency
Principal Engineer, TMS Consultancy
- Richard Marriot – CertEd, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency
Road Safety Engineer, TMS Consultancy

2.3. The design organisation is Stantec.

3. Road Safety Audit Decision Log

3.1. **Table 3.1** sets out the RSA decision log.

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Table 3.1 – Road Safety Audit Decision Log

Ref	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
2.1	<p>Location – Extents of signalised junction Summary: Cyclist collisions at the junction</p> <p>The proposed scheme features no cycle facilities aside from advanced stop lines on each approach to the signalised junction. With multi lane approaches, right turn lanes and the staggered nature of the junction, this could increase the risk of side swipe cyclist collisions with traffic filtering into different lanes and turning collisions with traffic in the right turn lanes within the signalised junction. This could be further exacerbated with the introduction of a new primary school at the development and other existing schools in the area, where there could be an increase in less experienced child cyclists using the junction.</p>	<p>Additional off carriageway cycleway facilities should be installed with Toucan crossings to negotiate the signalised junction and assist younger cyclists.</p>	<p>Off carriageway facilities are not considered necessary at this junction. Existing cycle movements at the junction (taken from the 2017 survey) show only 2 cycle movements using this junction across the 6 hours of both peaks (0700 – 1000 and 1600 – 1900). At this time, parts of the development north of Morton Way and Butt Lane / Park Farm were already occupied. Whilst additional development has occurred since the survey was undertaken, it is unlikely cycle movement has increased materially. As part of the DWH Gloucester Rd development, a committed scheme to provide an off-carriageway cycle facility on the northbound approach to the junction was agreed to be removed for arboricultural reasons. The junction is in a 30mph area, and this will be reinforced by the s278 works agreed as part of the DWH scheme, including the provision of improved street-lighting, which will be repositioned through the detailed design of the proposed scheme, as necessary. The ASL's will provide the opportunity for cyclists to position themselves at the stop-line for right-turn movements.</p>	<p>Whilst the provision of off-road cycleway facilities is desirable at this location the site constraints are such that there is insufficient width available to provide any off-road facilities on Butt Lane. There are no existing off-road cycle facilities on Gloucester Road or Morton Way. Alternative cycle routes via off road cyclepaths and quieter residential streets to the local primary and senior schools, town centre and employment areas are or will be available once the under construction Park Farm development has been built out. These routes are via Parklands Way, Barley Fields and Alexandra Way and in the case of the Post Farm, Park Farm and West of Park Farm developments provide shorter and more direct routes to these key destinations.</p>	<p>Agreed - No changes required.</p>
2.2	<p>Location – Morton Way approach to signalised junction Summary: Pulling out / turning collision</p> <p>With the proposed advanced stop line at this approach, the inter-visibility at the junction will be compromised due to the tall boundary wall for a third-party owned property. This will mean that drivers approaching from this side will be relying solely on the status of the signal heads to traverse the junction safely, where if should the signals fail or there is a red light jumper from the other approaches they might not have clear view of the oncoming vehicles, increasing the risk of pulling out and turning collisions at the junction.</p>	<p>The stop line should be brought forward to ensure the visibility splay for the Morton Way approach and alternative cycle facilities provided as per Problem 2.1.</p>	<p>This issue was known prior to the RSA and discussed with SGC. The RSA does not raise any other issues in this respect that were not foreseen. It was agreed at the time that the preference would be to accept this small relaxation in intervisibility to provide the straight-across pedestrian crossing at the stop-line. (SGC Position: "The requested pedestrian crossing on Morton Way forming part of the design: we appreciate from your designs and explanation that this will involve a departure from DMRB guidance of the intervisibility envelope, but unless the required safety audit suggests otherwise, would like the fourth arm to be Included"). Should the lights fail, there is ample room for vehicles to manoeuvre to observe oncoming traffic. The alternative solution would be to remove the pedestrian crossing at this location, enabling pedestrians to cross at the existing crossing on Morton Way. The scheme provides crossings on all other arms to satisfy desire lines, should this now need to be removed to enable full vehicular intervisibility.</p>	<p>The controlled pedestrian crossing on the Morton Way arm should be retained as previously recommended by the Council's Traffic Signal Engineer. The departure from the DMRB standard is agreed on the basis that should the signals fail, vehicles will be able to safely approach the junction and see traffic approaching on all the other arms without encroaching onto the Gloucester road carriageway.</p>	<p>Agreed - No changes required.</p>
2.3	<p>Location – Gloucester Road (southbound approach) Summary: Speed related junction collisions</p>	<p>Additional speed reducing measures should be installed for this approach in line with a 30mph speed limit.</p>	<p>This issue is addressed through the agreed s278 works proposed as part of the DWH Gloucester Road scheme (Drawing Number: ES043-ES-00-XX-GA-C-0620 Rev T3), which have been designed to 30mph, with relocated speed limit change to the north.</p>	<p>It is agreed that the S278 works currently being implemented as part of the DWH Land West of Gloucester Road development will extend the 30mph speed limit north of that sites access and will include the provision of street lighting. This will reduce current approach speeds from the north. Additional</p>	<p>Agreed - No changes required.</p>


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	<p>For the Gloucester Road approach where there is currently a change in speed limit from 40mph to 30mph, there is the proposal to extend the 30mph limit further north. Given the currently rural nature of the area, with no frontages or property adjacent to the carriageway, drivers might not slow down and adhere to the posted 30mph limit. This could increase the risk of speed related shunt collisions with queuing traffic at the junction and overshoot collisions, where they could also impact with pedestrians crossing.</p>			<p>speed reducing measures at the 30mph gateway could be introduced through the S278 technical approval and RSA stage 2 phases.</p>	
2.4	<p>Location – Gloucester Road (southbound approach) and junction extents Summary: Darkness related junction collisions</p> <p>The street lighting at the existing site stops abruptly just north of the junction. With the new proposals, the stop line, crossing and signal heads will be located further north of this. Drivers approaching in a southbound direction will have little time for their eye site to adjust from dark to light conditions, where they might not view the signalised junction ahead or pedestrians crossing which could result in shunt collisions, overshoots and pedestrian collisions.</p> <p>Additionally, the existing street lighting might not be sufficient to ensure good inter-visibility and illumination at the junction in the hours of darkness also increasing the risk of vehicle junction collisions and collisions with pedestrians using the crossings.</p>	<p>Street lighting should be extended sufficiently north of the junction to allow for a driver's eye site to adjust between dark to light conditions as per street lighting 'five second lighting rule'. Ref: BS 5489. The existing lighting around the junction should also be reviewed and upgraded to ensure it is well illuminated.</p>	<p>This issue is addressed through the agreed s278 works proposed as part of the DWH Gloucester Road scheme (Drawing Number: ES043-ES-00-XX-GA-C-0620 Rev T3), which provides for street-lighting through the proposed access to the north and at the junction. The street lighting will be reviewed at the detailed design stage.</p>	<p>Designers Response agreed.</p>	<p>Agreed - No changes required.</p>
2.5	<p>Location – Junction crossing point on Butt Lane approach Summary: Pedestrian collisions / junction collision</p> <p>For the Butt Lane approach to the junction the crossing width is 16m wide, with no stagger or central island. This could be an intimidating distance for pedestrians to cross, especially the mobility impaired, who may decide not to utilise it and cross at a different uncontrolled location, where they are more at risk of being struck by oncoming vehicles.</p> <p>Furthermore, this wide crossing could increase the signal cycle time at the junction, with potential pedestrian all red phases and long inter-greens following these, increasing delays for traffic and pedestrians crossing on the other junction arms. These could cause driver frustration and pedestrians not complying with the signal phasing, increasing the risk of red-light jumping collisions and pedestrian collisions if they do not wait for the pedestrian crossing phase to commence.</p>	<p>A staggered crossing should be introduced, or signal phasing and cycle times at the junction reviewed and adjusted to compensate the long crossing point if traffic flows allow</p>	<p>This issue was known prior to the RSA and discussed with SGC. The RSA does not raise any other issues in this respect that were not foreseen. It was agreed with SGC at the time that the pedestrian crossings should be accommodated as a single all-ped stage allowing 1.2m per second. (SGC Position: "Intergreen times (i.e. blackout and all red) for peds is time to clear the crossing @ 1.2m per second."). In order to provide for the 2 lane stop-line approach, a central reservation is not achievable. The current LinSig modelling allows for 14 seconds intergreen. Should this need to be extended, Living Streets recommend 1m/s, which would require an intergreen of 18 seconds. Alternatively, through detailed signal design at s278 stage, the crossing can include on-crossing detection which would extend the red period for slower pedestrians, when detected.</p>	<p>16m is not an excessively long distance for a single phase pedestrian crossing. There are other controlled pedestrian crossings in the Local Authority area of a similar length and we are not aware of any problems with their use. The crossing will only be on green when all vehicles are stopped on a red signal and pedestrians can clearly see if all vehicles are stopped from both sides of the crossing. I would favour on crossing detection as this seems to be the most efficient whilst allowing time for slower pedestrians to safely cross.</p>	<p>Agreed - No changes required.</p>


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4. Design Organisation and Overseeing Organisation Statements

Design Organisation Statement

On behalf of the Design Organisation I certify that: 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	K. Stock
Signed	
Position	Associate
Organisation	Stantec
Date	12 August 2020

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	Myles Kidd
Signed	
Position	Transport Development Control Manager
Organisation	South Gloucestershire Council
Date	13th August 2020

DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Reviewed (Discipline Lead)	Approved (Project Director)
39209/5567/TN001	-	12.08.20	KS	KS	KS	NT

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

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TECHNICAL NOTE

APPENDIX A



safer roads for everyone

Butt Lane Signalisation Scheme

Butt Lane/Gloucester Road/Morton Way,
Thornbury, Gloucestershire

Road Safety Audit Stage 1

on behalf of Stantec

TMS reference no: 15659
Date: 9th June 2020

Butt Lane Signalisation Scheme

Butt Lane/Gloucester Road/Morton Way, Thornbury, Gloucestershire

Road Safety Audit Stage 1

1. Introduction

- 1.1 This report describes a Stage 1 Road Safety Audit carried out for the Butt Lane signalisation scheme in Thornbury, on behalf of Stantec. The audit was carried out on 9th June 2020 in the offices of TMS Consultancy.
- 1.2 The audit team members were as follows:

Audit Team Leader

Lee Williams – BSc (Hons), MIHE
Highways England Approved RSA Certificate of Competency
Principal Engineer, TMS Consultancy

Audit Team Member

Richard Marriott – CertEd, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency
Road Safety Engineer, TMS Consultancy

- 1.3 The audit comprised an examination of the documents listed in **Appendix A**. The Road Safety Audit was undertaken in accordance with the Brief provided by J. Horwood / K. Stock of Stantec.
- 1.4 As this audit has been carried out during the COVID-19 pandemic, a site visit has not been carried out. South Gloucestershire Council issued guidance in April 2020 whereby a relaxation to the Road Safety Audit Standard (GG119) was given, allowing audit teams to use online mapping in lieu of a site visit.
- 1.5 The terms of reference of the Road Safety Audit are as described in GG 119, with the exception of a site visit. The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria.

- 1.6 All of the problems described in this report are considered by the audit team to require action in order to improve the safety of the scheme and minimise collision occurrence.
- 1.7 A scheme drawing is included in **Appendix B**, where the locations of specific problems are referenced. A location plan of the scheme is also included in this Appendix.
- 1.8 The scheme consists of the upgrade of the existing Butt Lane / Gloucester Road/ Morton Way junction located in Thornbury, from a staggered priority junction to a signalised junction with improvements to pedestrian and cycle provision. This is to accommodate the potential increase in traffic generated from a new development of 595 dwellings and an onsite primary school, located approximately 1.3km to the west of the junction. The speed limit of the existing junction is 30mph for Gloucester Road and Butt Lane and 40mph for Morton Way.
- 1.9 **Road Safety Audit Response Report**

Following the completion of the road safety audit, the design team should prepare a road safety audit response report in collaboration with the Overseeing Organisation.

The response report should incorporate the following:

- **Decision Log** spreadsheet, where each Problem and Recommendation in the Safety Audit report is reiterated
- In the Decision Log, a response should be provided by the Design Team and Overseeing Organisation for each problem raised in the RSA report, together with an agreed action

Further information is provided in **GG 119 Sections 4.11 to 4.19** and **Appendix F** (where a road safety audit response report template is available).

The response report should be produced and finalised within *one month* of the issue of the RSA report. A copy of the response report should be issued to the Safety Audit Team for information.

2. Items resulting from this Stage 1 Audit

2.1 PROBLEM

Location – Extents of signalised junction

Summary: Cyclist collisions at the junction

The proposed scheme features no cycle facilities aside from advanced stop lines on each approach to the signalised junction. With multi lane approaches, right turn lanes and the staggered nature of the junction, this could increase the risk of side swipe cyclist collisions with traffic filtering into different lanes and turning collisions with traffic in the right turn lanes within the signalised junction. This could be further exacerbated with the introduction of a new primary school at the development and other existing schools in the area, where there could be an increase in less experienced child cyclists using the junction.

RECOMMENDATION

Additional off carriageway cycleway facilities should be installed with Toucan crossings to negotiate the signalised junction and assist younger cyclists.

2.2 PROBLEM

Location – Morton Way approach to signalised junction

Summary: Pulling out / turning collision

With the proposed advanced stop line at this approach, the inter-visibility at the junction will be compromised due to the tall boundary wall for a third-party owned property. This will mean that drivers approaching from this side will be relying solely on the status of the signal heads to traverse the junction safely, where if should the signals fail or there is a red light jumper from the other approaches they might not have clear view of the oncoming vehicles, increasing the risk of pulling out and turning collisions at the junction.

RECOMMENDATION

The stop line should be brought forward to ensure the visibility splay for the Morton Way approach and alternative cycle facilities provided as per Problem 2.1.

2.3 PROBLEM

Location – Gloucester Road (southbound approach)

Summary: Speed related junction collisions

For the Gloucester Road approach where there is currently a change in speed limit from 40mph to 30mph, there is the proposal to extend the 30mph limit further north. Given the currently rural nature of the area, with no frontages or property adjacent to the carriageway, drivers might not slow down and adhere to the posted 30mph limit. This could increase the risk of speed related shunt collisions with queuing traffic at the junction and overshoot collisions, where they could also impact with pedestrians crossing.

RECOMMENDATION

Additional speed reducing measures should be installed for this approach in line with a 30mph speed limit.

2.4 PROBLEM

Location – Gloucester Road (southbound approach) and junction extents

Summary: Darkness related junction collisions

The street lighting at the existing site stops abruptly just north of the junction. With the new proposals, the stop line, crossing and signal heads will be located further north of this. Drivers approaching in a southbound direction will have little time for their eye site to adjust from dark to light conditions, where they might not view the signalised junction ahead or pedestrians crossing which could result in shunt collisions, overshoots and pedestrian collisions.

Additionally, the existing street lighting might not be sufficient to ensure good inter-visibility and illumination at the junction in the hours of darkness also increasing the risk of vehicle junction collisions and collisions with pedestrians using the crossings.

RECOMMENDATION

Street lighting should be extended sufficiently north of the junction to allow for a driver's eye site to adjust between dark to light conditions as per street lighting 'five second lighting rule'. Ref: BS 5489. The existing lighting around the junction should also be reviewed and upgraded to ensure it is well illuminated.

2.5 PROBLEM

Location – Junction crossing point on Butt Lane approach

Summary: Pedestrian collisions /junction collision

For the Butt Lane approach to the junction the crossing width is 16m wide, with no stagger or central island. This could be an intimidating distance for pedestrians to cross, especially the mobility impaired, who may decide not to utilise it and cross at a different uncontrolled location, where they are more at risk of being struck by oncoming vehicles.

Furthermore, this wide crossing could increase the signal cycle time at the junction, with potential pedestrian all red phases and long inter-greens following these, increasing delays for traffic and pedestrians crossing on the other junction arms. These could cause driver frustration and pedestrians not complying with the signal phasing, increasing the risk of red-light jumping collisions and pedestrian collisions if they do not wait for the pedestrian crossing phase to commence.

RECOMMENDATION

A staggered crossing should be introduced, or signal phasing and cycle times at the junction reviewed and adjusted to compensate the long crossing point if traffic flows allow.

3. **Audit Team Statement**

We certify that the terms of reference of the road safety audit are as described in GG 119, with the exception of a site visit, due to a relaxation of the standard issued by South Gloucestershire Council in April 2020, during the COVID-19 pandemic.

Audit Team Leader

Lee Williams – BSc (Hons), MIHE
Highways England Approved RSA Certificate of Competency
Principal Engineer, TMS Consultancy

Signed 

Date 9th June 2020

Audit Team Member




Richard Marriott – CertEd, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency
Road Safety Engineer, TMS Consultancy

Signed 

Date 9th June 2020

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Appendix A

Documents Examined:

A - CVs

B - Location Plan

C - Committed Site

D - ATC

E - Base Flows

F - Future Flows

G - PIC

39209_West of Park Farm_Thornbury_TN004 Butt Lane Road Safety Audit Brief_FINAL_010620

39209-5501-SK08 H Concept Staggered Crossroads

39209-5501-SK36 Butt Lane Junction Tracking

Appendix B

Please refer to the following page for a plan illustrating the locations of the problems identified as part of this audit (location numbers refer to paragraph numbers in the report).

The location of the scheme is shown below:



