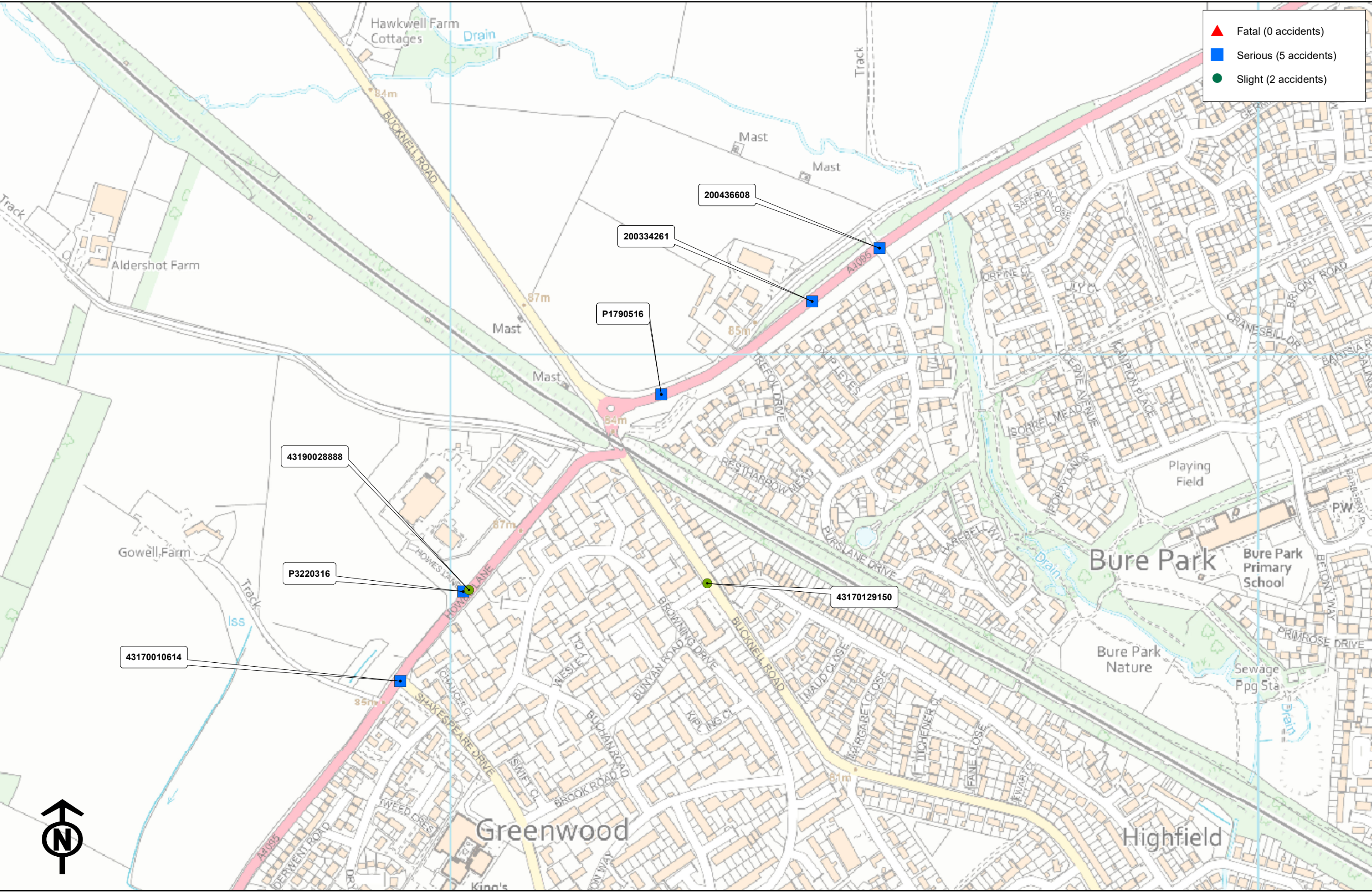


ATTACHMENT F

ACCIDENT DATA

▲ Fatal (0 accidents)
 ■ Serious (5 accidents)
 ● Slight (2 accidents)



Accidents between dates 01/01/2016 and 31/12/2021 (72) months

Selection: Notes:

Selected using Manual Selection

Tuesday 29/03/2016 Time 1210 Serious at A4095 HOWES LANE J/W ACCESS TO POLICE STATION BICESTER
 E: 457016 N: 223708 Junction Detail: 3 Control 4
 Fine without high winds Road surface Dry Daylight
 Vehicle Reference 1 Motorcycle over 500cc Moving from N to S Turning right
 Casualty Reference: 1 Age: 38 Male Driver/rider Severity: Serious Injured by vehicle: 1

Wednesday 18/05/2016 Time 1608 Serious at A4095 LORDS LANE APPROX 50M E OF RBT J/W BUCKNELL ROAD BICESTER
 E: 457261 N: 223952 Junction Detail: 0 Control
 Raining without high winds Road surface Wet/Damp Daylight
 Vehicle Reference 1 Car Moving from NE to S Going ahead other
 Casualty Reference: 1 Age: 51 Female Driver/rider Severity: Serious Injured by vehicle: 1
 Vehicle Reference 2 Car Moving from S to NE Going ahead but held up
 Vehicle Reference 3 Car Moving from S to NE Going ahead other
 Casualty Reference: 2 Age: 28 Female Driver/rider Severity: Slight Injured by vehicle: 3

Thursday 29/12/2016 Time 1240 Serious at A4095 HOWES LANE J/W SHAKESPEARE DRIVE BICESTER
 E: 456938 N: 223597 Junction Detail: 3 Control 2
 Fine without high winds Road surface Dry Daylight
 Vehicle Reference 1 Car Moving from NE to S Going ahead other
 Casualty Reference: 2 Age: 24 Female Passenger Severity: Slight Injured by vehicle: 1
 Vehicle Reference 2 Car Moving from S to SE Turning right
 Casualty Reference: 1 Age: 17 Female Driver/rider Severity: Serious Injured by vehicle: 2

Accidents between dates 01/01/2016 and 31/12/2021 (72) months

Selection: Notes:

Selected using Manual Selection

Tuesday 18/04/2017 Time 1734 Slight at BUCKNELL ROAD J/W KINGSLEY ROAD BICESTER
 E: 457318 N: 223718 Junction Detail: 3 Control 4
 Fine without high winds Road surface Dry Daylight
 Vehicle Reference 1 Car Moving from S to N Turning left
 Vehicle Reference 2 Pedal Cycle Moving from N to SE Going ahead other
 Casualty Reference: 1 Age: 34 Female Driver/rider Severity: Slight Injured by vehicle: 2

Monday 28/01/2019 Time 0820 Slight at A4095 HOWES LANE J/W ACCESS TO POLICE STATION BICESTER
 E: 457023 N: 223710 Junction Detail: 3 Control 4
 Fine without high winds Road surface Dry Daylight
 Vehicle Reference 1 Car Moving from NE to S Going ahead other
 Casualty Reference: 1 Age: 23 Female Driver/rider Severity: Slight Injured by vehicle: 1
 Vehicle Reference 2 Car Moving from NE to S Waiting to turn right
 Casualty Reference: 2 Age: 42 Female Driver/rider Severity: Slight Injured by vehicle: 2

Tuesday 20/10/2020 Time 1653 Serious at A4095 100M SW FROM PURSLANE DRIVE BICESTER
 E: 457448 N: 224067 Junction Detail: 0 Control
 Fine without high winds Road surface Wet/Damp Daylight
 Vehicle Reference 1 Car Moving from NE to S Going ahead other
 Casualty Reference: 1 Age: 38 Male Driver/rider Severity: Serious Injured by vehicle: 1

Accidents between dates 01/01/2016 and 31/12/2021 (72) months
Selection: Notes:
Selected using Manual Selection

Wednesday 23/12/2020 Time 0729 Serious at A4095 LORDS LANE J/W PURSLANE DRIVE BICESTER
E: 457531 N: 224133 Junction Detail: 3 Control 4
Raining without high winds Road surface Wet/Damp Darkness: street lights present and lit
Vehicle Reference 1 Car Moving from S to E Turning right
Vehicle Reference 2 Pedal Cycle Moving from NE to S Going ahead other
Casualty Reference: 1 Age: 43 Male Driver/rider Severity: Serious Injured by vehicle: 2

Accidents between dates **01/01/2016** and **31/12/2021** (72) months
Selection: Notes:
 Selected using Manual Selection

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	3	1	4
2-wheeled motor vehicles	0	1	0	1
Pedal cycles	0	1	1	2
Horses & other	0	0	0	0
Total	0	5	2	7

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	3	3	6
Passenger	0	0	1	1
Motorcycle rider	0	1	0	1
Cyclist	0	1	1	2
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	5	5	10

Number of casualties meeting the criteria: 10

ATTACHMENT G

STAGE 1 RSA DESIGNER'S RESPONSE

LAND AT NORTH WEST BICESTER

STAGE 1 RSA DESIGNER'S RESPONSE (A4095)

PROJECT NO. 4600/1100 DOC NO. D017

DATE: MARCH 2022

VERSION: 0.1

CLIENT: FIRETHORN TRUST



Velocity Transport Planning Ltd

www.velocity-tp.com



VELOCITY
Transport Planning

TABLE OF CONTENTS

1	DESIGNER'S STATEMENT	1
2	INTRODUCTION	2
3	DESIGNER'S RESPONSE TABLES	4

APPENDICES

APPENDIX A	STAGE 1 RSA BRIEF
APPENDIX B	STAGE 1 RSA



1 DESIGNER'S STATEMENT

1.1 INTRODUCTION

1.1.1 Velocity Transport Planning (VTP) has been appointed by Firethorn Trust (The Applicant) to provide highways and transportation support for the current planning application at the scheme referred to as Land to the North West of Bicester. The Application Site forms part of the wider allocated site identified at Policy Bicester 1: North West Bicester Eco-Town in the adopted Cherwell District Council (CDC) Local Plan 2011-2031 (Adopted 20 July 2015).

1.1.2 The Proposed Development description for the outline planning application (Planning Ref 21/01630/OUT), is as follows:

“Outline planning application for residential development (within Use Class C3), open space provision, access, drainage and all associated works and operations including but not limited to demolition, earthworks, and engineering operations, with the details of appearance, landscaping, layout and scale reserved for later determination.”

1.1.3 The Firethorn Trust application was validated by CDC on the 06th of May 2021. During the consultation process, the Local Highway Authority, Oxfordshire County Council (OCC) withdrew the agreed funding for the permitted A4095 Strategic Link Road (SLR), which was consented by CDC on the 21st of August 2014 (Planning Ref 14/01968/F). The A4095 SLR was identified as being a suitable means of permanent mitigation to accommodate the predicted traffic and highways impacts associated with the allocated development identified within the adopted Local Plan on this part of the local highway network.

1.1.4 With the withdrawal of the agreed funding for the A4095 SLR, the impacts on the local highway network will be considerably pronounced and it has been identified through discussions with OCC that the existing priority junction arrangement of the A4095 Howes Lane with Bucknell Road will not be suitable to accommodate further traffic impacts associated with the allocated sites identified in the adopted Local Plan.

1.1.5 With the above in mind, VTP has prepared an Interim Improvement Scheme at the existing priority junction of the A4095 Howes Lane with Bucknell Road to convert the existing priority junction to a mini-roundabout junction as part of the proposals associated with the Proposed Development. This Interim Improvement Scheme has been designed to mitigate the traffic impact associated with the Proposed Development for a temporary period until the agreed A4095 SLR can be implemented, or an alternative permanent mitigation strategy is agreed between CDC and OCC.

1.1.6 The Stage 1 Road Safety Audit (RSA) was carried out by an independent audit company, Road Safety Consulting Ltd, and a number of comments were raised which this Designer's Response seeks to address.

1.1.7 I have considered the issues and problems raised in the Stage 1 RSA and my comments are set out within this Designer's Response.

Signed



Date: 24th March 2022



2 INTRODUCTION

2.1 INTRODUCTION

2.1.1 Road Safety Consultants Ltd (RSC) were commissioned by VTP to carry out a Stage 1 RSA of the proposals to convert the existing priority junction of the A4095 Howes Lane with Bucknell Road into a mini-roundabout junction arrangement.

2.1.2 The Stage 1 RSA considered the following drawings:

- ⦿ **4600-1100-T-050 Rev A** – A4095 Howes Lane/Bucknell Road – Existing Junction – General Arrangement
- ⦿ **4600-1100-T-51 Rev A** – A4095 Howes Lane/Bucknell Road – Existing Junction – Swept Path Analysis (16.5m Articulated Vehicle)
- ⦿ **4600-1100-T-52 Rev A** – A4095 Howes Lane/Bucknell Road – Existing Junction – Swept Path Analysis (12.0m Rigid Vehicle)
- ⦿ **4600-1100-T-53 Rev A** – A4095 Howes Lane/Bucknell Road – Existing Junction – Visibility Splays
- ⦿ **4600-1100-T-054 Rev A** – A4095 Howes Lane/Bucknell Road – Proposed Junction – General Arrangement
- ⦿ **4600-1100-T-55 Rev A** – A4095 Howes Lane/Bucknell Road – Proposed Junction – Swept Path Analysis (16.5m & 12.0m Vehicle)
- ⦿ **4600-1100-T-56 Rev A** – A4095 Howes Lane/Bucknell Road – Proposed Junction – Swept Path Analysis (Large Car)
- ⦿ **4600-1100-T-057 Rev A** – A4095 Howes Lane/Bucknell Road – Proposed Junction – Visibility Splays
- ⦿ **4600-1100-T-058 Rev A** – A4095 Howes Lane/Bucknell Road – Proposed Junction – Stopping Sight Distance

2.1.3 In addition to the above-mentioned drawings, the Stage 1 RSA Brief also included details of Road Traffic Collision Data from 01/01/2016 to 31/12/2021 and Traffic Flow Diagrams for the following scenarios in the AM and PM Peak Hours:

- ⦿ Diagram A – 2022 Observed Base Traffic Flows (Wednesday 02/02/2022)
- ⦿ Diagram B – 2028 Growthed Base Traffic Flows (TEMPRO Growth Factors)
- ⦿ Diagram C – Proposed Development Traffic Flows (as agreed with OCC)
- ⦿ Diagram D – 2028 Base + Proposed Development Traffic Flows

2.1.4 The Stage 1 RSA Brief is included at **Appendix A**.

2.1.5 The signed Stage 1 RSA prepared by RSC is included at **Appendix B**.

2.1.6 This Designer's Response addresses the problems raised in the Stage 1 RSA and draws together the following documents and information:

- ⦿ Column 1 – identifies the item number in the Stage 1 RSA;



- ⦿ Column 2 – summarises the problem identified within the Stage 1 RSA;
- ⦿ Column 3 – sets out the Auditor’s recommendation;
- ⦿ Column 4 – sets out the Designer’s Response; and
- ⦿ Column 5 – allows for comments from the Local Highway Authority.



3 DESIGNER'S RESPONSE TABLES

Item	Problem	Auditor's Recommendation	Designer's Response	OCC Response
4.1	<p>Location: On Bucknell Road – northern arm of the junction</p> <p>Summary: Reduced footway width may lead to pedestrian to vehicle collisions</p> <p>The realigned kerb of the northern exit arm of Bucknell Road, produces a reduced footway width on the western side of the road. The design sketch appears to show a footway width of approximately 1m. The reduced footway width may lead to pedestrians walking in the carriageway to pass others on the footway. This may lead to pedestrian to vehicle collisions. This may be exacerbated by the restricted inter-visibility between opposing pedestrians at this location, due to the railway bridge wing wall.</p> <p>The reduced footway width may bring pedestrians closer to the carriageway edge, and the wing mirrors of large vehicles may overhang the footway resulting in wing mirror strikes to pedestrians.</p>	<p>It is recommended that measures are introduced to provide a footway width that enables opposing users to pass without entering carriageway areas; measures may include the realignment of kerb lines.</p>	<p>The RSA comment on the footway amendment is noted but not accepted.</p> <p>The proposed kerbs have been aligned in order to allow for heavy goods vehicles (HGVs) and other vehicles to turn left from the A4095 Howes Lane onto Bucknell Road without incursion into the southbound lane of Bucknell Road.</p> <p>Whilst this change has reduced the effective footway width, it is noted that there is very little (if any) pedestrian demand in this location, with no pedestrians observed using this route within the traffic surveys undertaken 02/02/2022. On that basis, the likelihood of any conflict between pedestrians is minimal.</p> <p>It is also noted that the footway is reduced to a minimum of 1m for a very limited stretch, which still accords with the minimum requirements set out within Department for Transport (DfT) Inclusive Mobility Guidance (2002).</p> <p>In addition, the proposals improve the pedestrian footway provision along the eastern kerb of Bucknell</p>	

			<p>Road, where the greatest pedestrian demand was observed.</p> <p>On that basis, no changes are proposed to the design and if any were, it might be to remove the provision of the pedestrian footway on the western side of the Bucknell Road and the northern side of Howes Lane completely, thus preventing the opportunity for any pedestrians to utilise the crossing or the existing footway provision when there is considered to be no demand for this.</p>	
4.2	<p>Location: At the mini roundabout, northbound travel through the junction</p> <p>Summary: Excessive entry path through the junction may lead to vehicle to vehicle collisions</p> <p>The offset central island location produces an excessive vehicle path through the junction for northbound users. This may lead to drivers failing to appropriately 'negotiate' the central island. Poor compliance with the circulatory requirements of the junction may lead to vehicle to vehicle collisions.</p>	<p>It is recommended that the size and location of the central island is amended to encourage appropriate circulatory movements for all turning manoeuvres. Measures may include a reduction in central island diameter, realignment of the eastern kerb realignment and a reduction of the circulatory carriageway width</p>	<p>The RSA comment on the alignment of the mini roundabout is noted but not accepted.</p> <p>The current location and arrangement of the central island is to allow for access through the mini roundabout for southbound HGVs turning right onto the A4095 Howes Lane. In addition, it is considered that with appropriate signage (details confirmed at the Detailed Design stage), drivers will be notified of the new junction layout.</p>	
4.3	<p>Location: At the mini roundabout</p> <p>Summary: Construction joint issues may lead to loss of control type collisions</p> <p>The construction joint of the existing junction will fall within the circulatory carriageway area of the junction.</p>	<p>It is recommended that measures are introduced to ensure the integrity of the existing construction joint. Measures may include the resurfacing of the junction area to remove the construction joint</p>	<p>The RSA comment on the construction joint is noted and accepted.</p> <p>The details to ensure the integrity of the existing construction joint will be addressed at the Detailed Design</p>	

	<p>Large turning vehicles will increase stresses on the construction joint, which may lead to deterioration of the joint and pot holes within turning areas for vehicles. Poor carriageway surfaces within turning areas will increase the likelihood of loss of control type collisions, particularly for two-wheeled users.</p>	within likely stress areas	<p>stage.</p> <p>If it is considered necessary to resurface the junction area, this will be identified.</p>	
4.4	<p>Location: At the mini roundabout – Bucknell Road Northern entry</p> <p>Summary: Late braking or failure to give way type collisions</p> <p>On the northern, Bucknell Road entry, drivers may fail to appreciate the presence of the mini roundabout, as siting of the diag 611.1 sign may be problematic and there may be reduced forward visibility to the sign. Poor perception of the change junction arrangements may lead to failure to give way or late braking shunt type collisions</p>	<p>It is recommended that forward visibility to the diag 611.1 sign is maximised to provide adequate warning of the junction type. Existing map type direction signs for the conventional roundabout on the A4095 (E) and Bucknell Road (N) approaches should be amended to clearly identify the new roundabout junction at Howes Lane</p>	<p>The RSA comment on signage is noted and accepted.</p> <p>The details of the signage strategy will be agreed at the Detailed Design stage.</p>	
4.5	<p>Location: At the mini roundabout</p> <p>Summary: Swept path of large vehicles may lead to vehicle to vehicle collisions</p> <p>Whilst on site, the audit team noted that the drivers of large vehicles over-ran the central hatched area and opposing traffic lane when making a left turn manoeuvre from Howes Lane on to Bucknell Road. The swept path drawings provided indicate that drivers of large vehicles may have to carry out a precise left turn manoeuvre to avoid over-running the opposing traffic lane or striking nearside kerbs. This manoeuvre may lead to vehicle to vehicle collisions with the introduction of the mini roundabout and revised kerb line of the eastern side of Bucknell Road.</p>	<p>It is recommended that measures should be introduced to minimise the likelihood of large vehicle swept paths crossing the hatched areas and entering the opposing traffic lane; measures may include widening the hatched markings separating the two traffic streams, reducing the southbound traffic lane width, and amending the eastern kerb line</p>	<p>The RSA comment is noted but not accepted.</p> <p>The width of the existing southbound lane on Bucknell Road has been widened, with additional kerb alignment changes to the northbound lane in order to maximise the carriageway space available and prevent vehicles and HGVs travelling over the centreline.</p> <p>The proposals are considered to be the most appropriate within the constraints of the railway bridge to reduce conflict between vehicles</p> <p>The 'AutoTrack' vehicle tracking</p>	

			<p>software used contains safety allowances within the software, meaning in 'real life' situations a vehicle will be able to turn with greater ease and would be less onerous.</p> <p>No changes are therefore proposed to the current arrangement.</p>	
4.6	<p>Location: On Bucknell Road – northern arm of the junction western crossing point</p> <p>Summary: Restricted inter-visibility may lead to pedestrian to vehicle collisions</p> <p>The relocation of the give way line back into Howes Lane means that inter-visibility between a pedestrian waiting at the existing crossing point on the western side and a driver turning left from Howes Lane will be further restricted (existing inter-visibility between users is poor). This may lead to an increased likelihood of pedestrian to vehicle collisions.</p>	<p>It is recommended that the existing crossing point is relocated to a point where appropriate adequate inter-visibility can be achieved. It may be appropriate to extend the footway on the western side of Bucknell Road and provide a dropped kerb crossing point at the splitter island of the Lords Lane roundabout.</p>	<p>The RSA comment is acknowledged but not accepted.</p> <p>It is noted that the intervisibility for pedestrians is an existing constraint, with the collision data suggesting this has not led to any accidents occurring in the latest 5-year period.</p> <p>In addition, it is noted that no pedestrians were observed using this crossing in the observed traffic surveys undertaken, meaning the likelihood of any conflict is low given there is currently little (if any) demand.</p> <p>If required by OCC, the feasibility of a relocated crossing could be determined at the Detailed Design stage. Alternatively, the pedestrian facilities on the western side of Bucknell Road and the northern side of Howes Lane, could be removed completely.</p>	

APPENDIX A

STAGE 1 RSA BRIEF



LAND AT NORTH WEST BICESTER, OXFORDSHIRE

TECHNICAL NOTE: STAGE 1 RSA BRIEF

CLIENT: FIRETHORN TRUST

DATE: MARCH 2022

Table 1: Project Summary

Date:	01 March 2022
Document Reference:	4600-1100 Doc: 008 V0.1
Prepared by:	Velocity Transport Planning
On behalf of:	Firethorn Trust
AUTHORISATION SHEET	
Project:	Land at North West Bicester
Report title:	Stage 1 RSA Brief
PREPARED BY	
Name:	Mark Kirby
Signed:	
Organisation:	Velocity Transport Planning
Date:	01 March 2022

Table 2: General Details

Highway scheme name and road number:		A4095 Howes Lane / Bucknell Road Junction			
Type of scheme:	Proposed introduction of a mini-roundabout junction to replace the existing priority junction at the A4095 Howes Lane / Bucknell Road				
RSA Stage (tick as appropriate)	1	2	3	4	
	✓				
		Interim			
Overseeing Organisation Details		Design Organisation Details			
Oxfordshire County Council, County Hall, New Road, Oxford. OX1 1ND		Velocity Transport Planning. Unit A, Taper Studios, The Leather Market, 120 Weston Street, London, SE1 4GS			
Police Contact Details:		Maintaining Agent Contact Details:			
(Required for Stage 3 RSAs)		Oxfordshire County Council			
RSA Team Membership					
Road Safety Consulting Ltd					
Terms of Reference					



LAND AT NORTH WEST BICESTER, OXFORDSHIRE

TECHNICAL NOTE: STAGE 1 RSA BRIEF

CLIENT: FIRETHORN TRUST

DATE: MARCH 2022

Table 3: Scheme Details

General
<ul style="list-style-type: none">Replace the existing priority junction of the A4095 Howes Lane / Bucknell Road with a proposed mini-roundabout junction of 14m ICD.
Design Standards Applied to the Scheme
MfS/MfS2, the OCC Residential Design Guide (2 nd Edition – 2015), and DMRB CD116 & CD109
Design Speed
30mph
Speed Limits
30mph
Existing Traffic Flows/Queues
A Traffic Survey was undertaken on Wednesday the 02 nd of February 2022. <ul style="list-style-type: none">Diagram A – 2022 Observed Traffic Flows – AM & PM Peak Hours
Forecast Traffic Flows
Whilst Traffic Data from the Bicester Transport Model (BTM) for a Future Year is awaited, as this information has not been forthcoming, TEMPRO Growth Factors have been used to growth the 2022 Observed Traffic flows to a Future Year of 2028 (Diagram B). This assumes that a Planning Consent is granted in 2022, construction starts in 2023, and the 530 dwellings could be completed by 2028. <ul style="list-style-type: none">Diagram B – 2028 Growthed Base Traffic Flows – AM & PM Peak HoursDiagram C – Proposed Development Traffic Flows – AM & PM Peak HoursDiagram D – 2028 Base + Proposed Development Traffic Flows – AM & PM Peak Hours
Pedestrian, Cyclist and Equestrian Desire Lines
The proposed junction improvement does not prejudice the existing desire lines for pedestrians, cyclists and equestrians
Environmental Constraints
N/A

Table 4: Locality

Description of Locality
The junction of the A4095 Howes Lane/Bucknell Road is located on the western side of Bicester. An existing railway bridge spans the northern part of the junction.
General Description:



LAND AT NORTH WEST BICESTER, OXFORDSHIRE

TECHNICAL NOTE: STAGE 1 RSA BRIEF

CLIENT: FIRETHORN TRUST

DATE: MARCH 2022

The proposed development is for up to 530 residential units, the access to the development is to be taken from the as-built estate road that runs from a priority junction with the B4100 to the south-east of the proposed development with Charlotte Avenue to a priority junction to the north-east of the proposed development with Braeburn Avenue.

A Bus Only link is located between the Eastern and Western Parcels of the proposed development. Two site access junctions will be formed to the south of the bus gate and one new site access junction to be formed to the north of the bus gate. A new extended access road is to be provided on the northern boundary of the western parcel of the proposed development. A temporary access is proposed to access the Eastern Parcel of land from the B4100 during construction only and a temporary access is proposed to the Western Parcel from the existing layby on the B4100 Banbury Road during construction only.

Relevant Factors which may Affect Road Safety

The Existing Priority Junction is considered to be somewhat constrained, and it is therefore requested that a Safety audit is undertaken of this arrangement to be compared to the Proposed Mini-Roundabout Junction. General Arrangement Drawings have been provided for both the Existing Junction and the Proposed Junction.

Table 5: Analysis

Collision Data Analysis
<p>Latest three-year PIA data is included.</p> <p>A Plan showing the locations and severity of the accidents is included, as well as a review of these accidents. It should be noted that we have been provided with PUBLIC and PRIVATE data and notified to ensure that only the PUBLIC data is presented within a report that will be available to the public. However, the details of the accidents are only presented on the PRIVATE data. As such, both sets of data are provided.</p> <p>A single accident was recorded on the A4095 Lords Lane approx 50m from the junction with Bucknell Road on 18/05/2016 (Ref P1790516). The cause of this accident was due to <i>"illness or disability, mental or physical"</i> and is not attributed to the geometry of the existing junction.</p>
Departures from Standards:
<p>The following Departures from Standards are identified:</p> <ul style="list-style-type: none">• The visibility splay from the southbound Bucknell Road give way line at the proposed mini-roundabout junction identifies an "F" distance of less than the recommended 9.0m (paragraph 5.24 of CD 116).• The desirable minimum stopping sight distance (SSD) for roads with a design speed of 50kph (30mph), which both the A4095 Howes Lane and Bucknell Road are identified as, should be 70m (Table 2.10 of CD 109). Whilst the SSD for both the A4095 Howes Lane and the Bucknell Road northbound approaches can be achieved, the SSD for the southbound approach is identified as being in the order of 37m. This is less than "one step below desirable minimum" for a 30mph road, but it must be acknowledged that with the introduction of the give way line for the mini-roundabout, vehicle speeds approaching from the north, will be considerably lower than the design speed of 30mph.
Previous Road Safety Audit Stage Reports, Road Safety Audit Responses and Evidence of Agreed Actions
N/A



LAND AT NORTH WEST BICESTER, OXFORDSHIRE

TECHNICAL NOTE: STAGE 1 RSA BRIEF

CLIENT: FIRETHORN TRUST

DATE: MARCH 2022

Strategic Decisions:

OCC have taken the decision to redirect the previously agreed funding for the Approved A4095 Strategic Link Road (14/01968/F). As such, the proposed Interim Improvement at the A4095 Howes Lane/Bucknell Road junction is proposed to accommodate all of the development traffic associated with the full Firethorn Development prior to the implementation of the A4095 Strategic Link Road.

List of Included Documents & Drawings:

Documents:

- Summary of Accident Data – PRIVATE & PUBLIC (including Accident Location Plan)
- Traffic Flow Diagrams A-D

Drawings:

- **4600-1100-T-050 Rev A** – A4095 Howes Lane/Bucknell Road – Existing Junction – General Arrangement
- **4600-1100-T-054 Rev A** – A4095 Howes Lane/Bucknell Road – Proposed Junction – General Arrangement
- **4600-1100-T-057 Rev A** – A4095 Howes Lane/Bucknell Road – Proposed Junction – Visibility Splays
- **4600-1100-T-058 Rev A** – A4095 Howes Lane/Bucknell Road – Proposed Junction – Stopping Sight Distance



APPENDIX B

STAGE 1 RSA



Stage 1 Road Safety Audit
Howes Lane junction with Bucknell Road, Bicester
Proposed Mini Roundabout

Date: 18/03/2022

Report produced for: Firethorn Trust

Report requested by: Velocity Transport Planning

On behalf of: Oxfordshire County Council

Report prepared by: Kevin Seymour, Road Safety Consulting Ltd

Reference: RSC/KS/EB/21093

Document Control Sheet

Project Title Howes Lane junction with Bucknell Road, Bicester
Proposed Mini Roundabout

Report Title Stage 1 Road Safety Audit
Reference: RSC/KS/EB/21093

Revision -

Status Final

Control Date 18/03/2022

Record of Issue

Issue	Author	Date	Check	Date	Authorised	Date
Final	KS	16/03/22	EB	17/03/22	KS	17/03/22

Distribution

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Company Number 5225549

1. Introduction

- 1.1. This report results from a Stage 1 Road Safety Audit carried out on the proposed mini-roundabout at the Howes Lane junction with Bucknell Road, Bicester, associated with the development of land off NW Bicester. The Audit was carried out during March 2022.
- 1.2. This Road Safety Audit was produced for (client): Firethorn Trust, requested by (design organisation): Velocity Transport Planning, on behalf of (overseeing organisation): Oxfordshire County Council.
- 1.3. The Audit Team membership was as follows:
 - Audit Team Leader
Kevin Seymour
B Sc, PG Dip TS, MCIHT, MSoRSA
Highways England Certificate of Competence (Road Safety Audit)
Road Safety Consulting Ltd

 - Audit Team Member
Elaine Bingham
B Eng (Hons), MCIHT, MSoRSA
Highways England Certificate of Competence (Road Safety Audit)
Road Safety Consulting Ltd
- 1.4. The audit took place at the offices of Road Safety Consulting Ltd between 14th and 17th March 2022. The audit was undertaken in accordance with the Road Safety Audit brief provided and with reference to the Design Manual for Roads and Bridges (DMRB) GG 119.
- 1.5. The Audit Team visited the site together on the 14th March 2022, between 11:30am and 12:30pm. The weather at the time of the audit was sunny and dry. The road surface was dry. Traffic flows were moderate at the junction. Low pedestrian and cycle volumes were observed; two equestrian users were observed using the junction during the site visit. At the junction, the predominant traffic flow movements were observed to be the left turn manoeuvre from Howes Lane to Bucknell Road, and the reverse right turn manoeuvre from Bucknell Road to Howes Lane.
- 1.6. The audit comprised an examination of the information provided by the Design Organisation and listed in Appendix 1.
- 1.7. 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 designs to any other criteria.
- 1.8. All comments and recommendations are referenced to the design drawing and the locations have been indicated on plans in Appendix 2.

2. Items Considered

2.1. Scheme Proposals

- 2.1.1. The overall development is for up to 530 residential units, the access to the development is to be taken from the as-built estate road that runs from a priority junction with the B4100 to the south-east of the proposed development with Charlotte Avenue to a priority junction to the north-east of the proposed development with Braeburn Avenue.
- 2.1.2. A Bus Only link is located between the Eastern and Western Parcels of the proposed development. Two site access junctions will be formed to the south of the bus gate and one new site access junction to be formed to the north of the bus gate. A new extended access road is to be provided on the northern boundary of the western parcel of the proposed development. A temporary access is proposed to access the Eastern Parcel of land from the B4100 during construction only and a temporary access is proposed to the Western Parcel from the existing layby on the B4100 Banbury Road during construction only.
- 2.1.3. The highways element of this scheme consists of the replacement of the existing priority junction of the A4095 Howes Lane / Bucknell Road with a proposed mini-roundabout junction of 14m ICD.

2.2. Information Provided to the Audit Team

- 2.2.1. Information that has been provided to the Audit Team, for the purpose of this audit, is as outlined within Appendix 1 of this report.
- 2.2.2. The Audit Team has also received the latest three-year PIA data:
- 2.2.3. A plan showing the locations and severity of the accidents, as well as a review of these accidents. It should be noted that we have been provided with PUBLIC and PRIVATE data and notified to ensure that only the PUBLIC data is presented within a report that will be available to the public. However, the details of the accidents are only presented on the PRIVATE data. As such, both sets of data are provided.
- 2.2.4. A single accident was recorded on the A4095 Lords Lane approx. 50m from the junction with Bucknell Road on 18/05/2016 (Ref P1790516). The cause of this accident was due to "illness or disability, mental or physical" and is not attributed to the geometry of the existing junction.

2.3. Departures from Standards (Design)

- 2.3.1. The Audit Team notes the following Departures from Standards are identified:
- 2.3.2. The visibility splay from the southbound Bucknell Road give way line at the proposed mini-roundabout junction identifies an "F" distance of less than the recommended 9.0m (paragraph 5.24 of CD 116).

2.3.3. The desirable minimum stopping sight distance (SSD) for roads with a design speed of 50kph (30mph), which both the A4095 Howes Lane and Bucknell Road are identified as, should be 70.m (Table 2.10 of CD 109). Whilst the SSD for both the A4095 Howes Lane and the Bucknell Road northbound approaches can be achieved, the SSD for the southbound approach is identified as being in the order of 37m. This is less than “one step below desirable minimum” for a 30mph road, but it must be acknowledged that with the introduction of the give way line for the mini- roundabout, vehicle speeds approaching from the north, will be considerably lower than the design speed of 30mph.

3. Items Raised at Previous Road Safety Audits

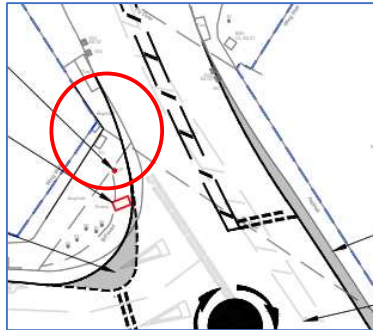
3.1. The Audit Team is unaware of any previous Road Safety Audits on this proposal.

4. Items Raised by this Stage 1 Road Safety Audit

4.1. Problem

Location: On Bucknell Road – northern arm of the junction

Summary: Reduced footway width may lead to pedestrian to vehicle collisions



The realigned kerb of the northern exit arm of Bucknell Road, produces a reduced footway width on the western side of the road. The design sketch appears to show a footway width of approximately 1m. The reduced footway width may lead to pedestrians walking in the carriageway to pass others on the footway. This may lead to pedestrian to vehicle collisions. This may be exacerbated by the restricted inter-visibility between opposing pedestrians at this location, due to the railway bridge wing wall.

The reduced footway width may bring pedestrians closer to the carriageway edge, and the wing mirrors of large vehicles may overhang the footway resulting in wing mirror strikes to pedestrians.

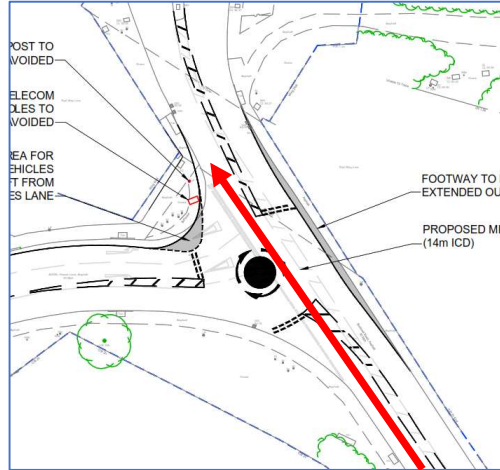
Recommendation:

It is recommended that measures are introduced to provide a footway width that enables opposing users to pass without entering carriageway areas; measures may include the realignment of kerb lines.

4.2. Problem

Location: At the mini roundabout, northbound travel through the junction

Summary: Excessive entry path through the junction may lead to vehicle to vehicle collisions



The offset central island location produces an excessive vehicle path through the junction for northbound users. This may lead to drivers failing to appropriately 'negotiate' the central island. Poor compliance with the circulatory requirements of the junction may lead to vehicle to vehicle collisions.

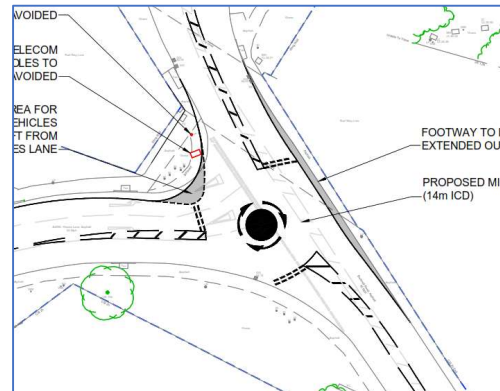
Recommendation:

It is recommended that the size and location of the central island is amended to encourage appropriate circulatory movements for all turning manoeuvres. Measures may include a reduction in central island diameter, realignment of the eastern kerb realignment and a reduction of the circulatory carriageway width.

4.3. Problem

Location: At the mini roundabout

Summary: Construction joint issues may lead to loss of control type collisions



The construction joint of the existing junction will fall within the circulatory carriageway area of the junction. Large turning vehicles will increase stresses on the construction joint, which may lead to deterioration of the joint and pot holes within turning areas for vehicles. Poor carriageway surfaces within turning areas will increase the likelihood of loss of control type collisions, particularly for two-wheeled users.

Recommendation:

It is recommended that measures are introduced to ensure the integrity of the existing construction joint. Measures may include the resurfacing of the junction area to remove the construction joint within likely stress areas.

4.4. Problem

Location: At the mini roundabout –
Bucknell Road Northern entry

Summary: Late braking or failure to give
way type collisions

On the northern, Bucknell Road entry, drivers may fail to appreciate the presence of the mini roundabout, as siting of the diag 611.1 sign may be problematic and there may be reduced forward visibility to the sign. Poor perception of the change junction arrangements may lead to failure to give way or late braking shunt type collisions.

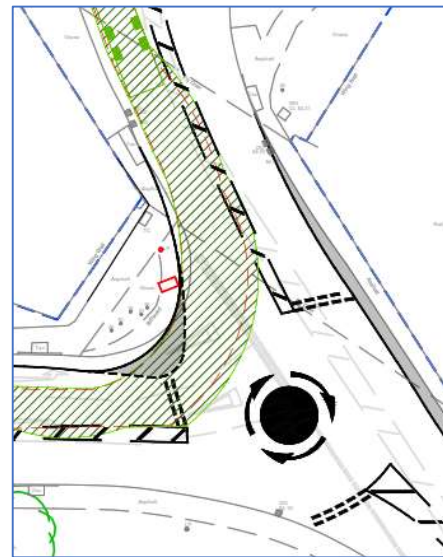
Recommendation:

It is recommended that forward visibility to the diag 611.1 sign is maximised to provide adequate warning of the junction type. Existing map type direction signs for the conventional roundabout on the A4095 (E) and Bucknell Road (N) approaches should be amended to clearly identify the new roundabout junction at Howes Lane.

4.5. Problem

Location: At the mini roundabout

Summary: Swept path of large vehicles may
lead to vehicle to vehicle
collisions



Whilst on site, the audit team noted that the drivers of large vehicles over-ran the central hatched area and opposing traffic lane when making a left turn manoeuvre from Howes Lane on to Bucknell Road. The swept path drawings provided indicate that drivers of large vehicles may have to carry out a precise left turn manoeuvre to avoid over-running the opposing traffic lane or striking nearside kerbs. This manoeuvre may lead to vehicle to vehicle collisions with the introduction of the mini roundabout and revised kerb line of the eastern side of Bucknell Road.

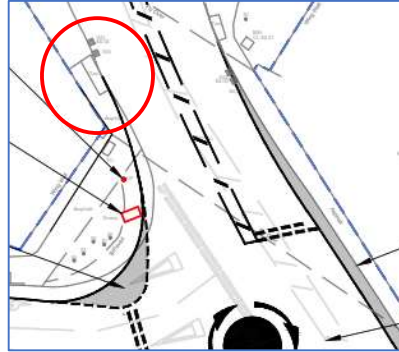
Recommendation:

It is recommended that measures should be introduced to minimise the likelihood of large vehicle swept paths crossing the hatched areas and entering the opposing traffic lane; measures may include widening the hatched markings separating the two traffic streams, reducing the southbound traffic lane width, and amending the eastern kerb line.

4.6. Problem

Location: On Bucknell Road – northern arm of the junction western crossing point

Summary: Restricted inter-visibility may lead to pedestrian to vehicle collisions



The relocation of the give way line back into Howes Lane means that inter-visibility between a pedestrian waiting at the existing crossing point on the western side and a driver turning left from Howes Lane will be further restricted (existing inter-visibility between users is poor). This may lead to an increased likelihood of pedestrian to vehicle collisions.

Recommendation:

It is recommended that the existing crossing point is relocated to a point where appropriate adequate inter-visibility can be achieved. It may be appropriate to extend the footway on the western side of Bucknell Road and provide a dropped kerb crossing point at the splitter island of the Lords Lane roundabout.

End of Safety Comments

5. Audit Team Statement

We certify that this Stage 1 Road Safety Audit has been carried with reference to GG 119.

Audit Team Leader

Kevin Seymour
B Sc, PG Dip TS, MCIHT, MSoRSA
Highways England Certificate of Competence (Road Safety Audit)

Signed:  Dated 16th March 2022
Director of Road Safety Consulting Ltd

Audit Team Member

Elaine Bingham,
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Highways England Certificate of Competence (Road Safety Audit)
Director of Road Safety Consulting Ltd

Signed:  Dated 17th March 2022
Director of Road Safety Consulting Ltd

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APPENDIX 1: Information Provided

List of Information Provided

- Drawing 4600-1100-T-050 Rev A – A4095 Howes Lane/Bucknell Road – Existing Junction – General Arrangement
- Drawing 4600-1100-T-051 Rev A – A4095 Howes Lane/Bucknell Road – Existing Junction – Swept Path Analysis (1)
- Drawing 4600-1100-T-052 Rev A – A4095 Howes Lane/Bucknell Road – Existing Junction – Swept Path Analysis (2)
- Drawing 4600-1100-T-053 Rev A – A4095 Howes Lane/Bucknell Road – Existing Junction – Visibility Splays
- Drawing 4600-1100-T-054 Rev A – A4095 Howes Lane/Bucknell Road – Proposed Junction – General Arrangements
- Drawing 4600-1100-T-055 Rev A – A4095 Howes Lane/Bucknell Road – Proposed Junction – Swept Path Analysis (1)
- Drawing 4600-1100-T-056 Rev A – A4095 Howes Lane/Bucknell Road – Proposed Junction – Swept Path Analysis (2)
- Drawing 4600-1100-T-057 Rev A – A4095 Howes Lane/Bucknell Road – Proposed Junction – Visibility Splays
- Drawing 4600-1100-T-058 Rev A – A4095 Howes Lane/Bucknell Road – Proposed Junction – Stopping Sight Distance

Stage 1 Road Safety Audit Brief

Road traffic collision data

Traffic flow data

APPENDIX 2: Drawing Showing Problem Locations
Problem numbers shown on the attached drawing refer to Problem numbers within the report.

