



**A4 London Road, M4 J5 to Sutton Lane, Slough, Berkshire
Highway Improvements
Stage 3 Road Safety Audit**

For Slough Borough Council

Prepared by Acorns Projects Limited

Safety Traffic Project Management & Highway Engineering Consultants

NOVEMBER 2014

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Revision History

This document has the following history:

Version No.	Version Date	Summary of Changes	Changes marked
1.0	02/11/2014	N/A	N/A

Approvals

This document requires the following approvals:

Name	Title
Adriano B. Cappella	Audit Team Leader
Sarah Taylor	Audit Team Member

Distribution

This document has also been distributed to:

Name	Title & Organisation
Darren Gotch	Acting Assistant Engineer - Traffic Management - Slough Borough Council

1.0 INTRODUCTION

1.1 This report results from a Stage 3 Road Safety Audit carried out on the recently constructed Highway Improvements at the A4 London Road, from the M4 Motorway at Junction 5, to the Sutton Lane traffic signal junction, Slough, Berkshire, at the request of the Client/Design Organisation, Slough Borough Council, Department of Customer and Community Services, St. Martin's Place, 51 Bath Road, Slough, SL1 3UF.

1.2 The recently constructed scheme comprises of the modification of existing kerblines at the existing traffic signal controlled pedestrian crossing facility, the removal of the existing bus laybys along the northern and southern kerblines which have been replaced with on-carriageway bus stop facilities, the introduction of two east bound vehicular traffic lanes, amendments to a traffic separation island adjacent to the existing petrol filling station and, the removal of the former right turn facility for the petrol filling station. In addition, carriageway and footway resurfacing has been undertaken, together with new carriageway markings.

1.3 The Audit Team membership was as follows :

Adriano B. Cappella (Audit Team Leader)	IEng, FIHE, MCIHT Director, Acorns Projects Limited
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Sarah Taylor (Audit Team Member)	IEng, AMICE, FIHE, MCIHT Associate Consultant, Acorns Projects Limited
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1.4 Also in attendance during the daytime Audit was:

Darren Gotch	Slough Borough Council
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1.5 Also invited to attend but had to decline due to other commitments were:

Tony Humphreys	Hampshire & Thames Valley Joint Operations Road Policing
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1.6 The Audit took place at the Eaton Bray office of Acorns Projects Limited during October and November 2014. The Audit was undertaken in accordance with the Audit Brief contained in the Slough Borough Council E-Mail to Acorns Projects Limited dated the 22nd August 2014. The Audit comprised an examination of the drawings provided by the Client/Design Organisation for review at this Stage 3 Road Safety Audit and, are listed in Annex A.

- 1.7** The drawings consisted of the general arrangement, statutory undertakers plant, site clearance, drainage, earthworks, pavements, footways, lining and signs and, lining setting out. Copies of the scheme drawings at both A3 and A4 size were provided for the Audit Team's use. Road traffic accident data, vehicular traffic flow data, pedestrian flow data and, pedal cycle flow data has not been supplied for the purposes of this Stage 3 Road Safety Audit.
- 1.8** A visit to the site was undertaken during the afternoon and evening of the 16th October 2014 by both Audit Team Members, together with those parties identified in Paragraph 1.4. During the afternoon site visit, the weather was mild, grey and overcast with light drizzle and, the existing carriageway surface was mainly dry with some damp areas. Vehicular traffic conditions at the time of the afternoon site visit were observed to be moderate to heavy on occasions. A reasonable number of pedestrians and four pedal cyclists were observed during the afternoon site visit. During the night time site visit undertaken by both Audit Team Members together, the weather was mild and the existing carriageway surface was mainly dry with some damp areas. Vehicular traffic conditions at the time of the night time site visit were observed to be light. Two pedestrians but no pedal cyclists were observed during the night time site visit.
- 1.9** The terms of reference of the Audit are as described in HD 19/03. The Audit 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. However, to clearly explain a safety problem or the recommendation made to resolve the identified problem, the Audit Team may, on occasion, have referred to a Design Standard without touching on technical audit.
- 1.10** No Departures from Design Standards have been reported by the Design Organisation.
- 1.11** All Problems and Recommendations are referenced to the design drawings and the locations have been indicated on the A4 plan supplied for use by the Audit Team in Annex B.
- 1.12** Issues identified and observations made during this Stage 3 Road Safety Audit and site inspection which the Terms of Reference exclude from this report, but which the Audit Team wishes to draw to the attention of the Audit Project Sponsor, i.e. the Local Highway Authority, Slough Borough Council, will be set out in a separate letter. These issues could include maintenance items and operational issues. In this regard, the Audit Team have made reference to four items as referred to in a Covering Letter to the Client/Design Organisation, Slough Borough Council, dated the 22nd January 2015. This covering letter should be considered in conjunction with this Stage 3 Road Safety Audit Report by the Audit Project Sponsor, i.e. the Local Highway Authority, Slough Borough Council.

2.0 ITEMS RAISED AT THE COMBINED STAGE 1 AND STAGE 2 ROAD SAFETY AUDIT

- 2.1** The safety aspects of the A4 London Road, from the M4 Motorway at Junction 5, to the Sutton Lane traffic signal junction, Slough, Berkshire, Proposed Highway Improvements Scheme, were the subject of comment in the October 2013 Combined Stage 1 and 2 Road Safety Audit undertaken by Acorns Projects Limited.
- 2.2** The Client/Design Organisation, Slough Borough Council, responded to the Combined Stage 1 and 2 Road Safety Audit Report on the 29th November 2013, whereby the safety aspects raised were discussed and mitigating measures proposed.
- 2.3** Items 2.1.1 (in part), 2.2.1, and 2.2.2 (in part), of the October 2013 Combined Stage 1 and 2 Road Safety Audit Report remain a problem and, are referred to again in this Stage 3 Road Safety Audit Report as Items 3.1.1, 3.2.1 and 3.2.2.
- 2.4** The remaining issues raised in the October 2013 Combined Stage 1 and 2 Road Safety Audit Report undertaken by Acorns Projects Limited have been resolved.

3.0 ITEMS RAISED AT THIS STAGE 3 ROAD SAFETY AUDIT

3.1 GENERAL

3.1.1 PROBLEM

Location 1 - Along the southern kerbline of the traffic signal controlled pedestrian crossing facility (Drawing No. SBC/T/IT/00198/000/01 Rev A).

Summary - Identified surface water ponding potentially impacts upon the operational safety of the traffic signal controlled pedestrian crossing facility.

The site visit has established that the width of the traffic signal controlled pedestrian crossing facility has been increased by removing the existing northern and southern kerb line build outs. The northern and southern channel lines now align with the channel lines of the remainder of the A4 London Road. Whilst the scheme drawings indicated that levels within the existing channel lines and therefore the gradients were reasonably minimal, at the Combined Stage 1 and 2 Road Safety Audit, the Audit Team raised the potential issue of additional surface water drainage provision along the revised northern and southern channel lines adjacent to the traffic signal controlled pedestrian crossing facility. Previous concerns raised have now resulted in surface water ponding taking place along the southern kerbline, which now consequently presents a slip or trip hazard for pedestrians during wet and subsequent cold/freezing weather conditions, with the resultant potential risk that personal injury could be sustained by pedestrians.

RECOMMENDATION

The existing surface water drainage provision relative to the existing falls and gradients of the northern and southern channel lines should be adjusted in order to address the identified surface water ponding. It may prove necessary to install additional new road gullies in order to adequately capture surface water in the area of the revised layout of the existing traffic signal controlled pedestrian crossing facility.

3.2 LOCAL ALIGNMENT

3.2.1 PROBLEM

Location 2 - The west bound on-carriageway bus stop along the southern kerbline (Drawing No. SBC/T/IT/00198/000/01 Rev A).

Summary - The removal of the west bound bus layby and the introduction of the two east bound vehicular traffic lanes now results in west bound vehicular traffic having to overtake stationary buses directly into the path of potentially fast moving east bound vehicles, which could result in an increased risk of offside to offside vehicular conflicts occurring.

The site visit has established that the former bus layby along the southern kerbline of the A4 London Road has been removed and replaced on the carriageway within a 33 metre long bus cage. The west bound bus stop has been sited directly opposite the east bound on-carriageway bus stop. The recently constructed scheme now provides two east bound vehicular traffic lanes, which has been increased from the former single lane. The site visit has established that when the northern kerbline on-carriageway bus stop is occupied by stationary buses, east bound vehicles are able to overtake in relative safety by utilising lane two. However, for west bound vehicular traffic, in order to overtake a stationary bus at the southern kerbline bus stop, a driver now has to encroach into lane two of the east bound carriageway. Concern arises that the identified overtaking manoeuvre is being undertaken into the path of faster moving east bound vehicles in lane two, whereby there is now an increased risk of head on or offside to offside vehicular conflicts occurring.

RECOMMENDATION

Whilst the objectives of the constructed scheme are fully acknowledged by the Audit Team, it is Recommended that under these circumstances, the former bus lay along the southern kerbline serving west bound bus movements should be reinstated.

3.2.2 PROBLEM

Location 3 - At the access/entry arrangement for the existing petrol filling station (Drawing No. SBC/T/IT/00198/000/01 Rev A).

Summary - The removal of the former right turn facility for the petrol filling station and the introduction of the two east bound vehicular traffic lanes now results in an increased risk of nose to tail shunt type accidents occurring for west bound vehicular traffic.

The site visit has established that the former sub-standard right run facility for the petrol filling station has been removed and replaced with an additional east bound vehicular traffic lane. Having passed through the Sutton Lane traffic signal junction and merged as two lanes become one, in order to gain access to the petrol filling station forecourt, west bound vehicles now have to hold up all following west bound vehicles, especially if lanes one and two of the east bound A4 London Road are occupied with moving vehicles. As a consequence, concern arises that the proposed layout and the loss of the existing right turn facility now results in an increased risk of west bound vehicles being involved in nose to tail shunt type accidents.

RECOMMENDATION

A prohibition on right turns into the petrol filling station should be implemented as west bound vehicular traffic always has the option to u-turn at the M4 Junction 5 interchange roundabout if necessary.

3.3 JUNCTIONS

3.3.1 PROBLEM

Location 4 - The left turn out manoeuvre out of Laburnum Grove into London Road (Drawing No. SBC/T/IT/00198/000/01 Rev A).

Summary - The tight exit radius for vehicles turning left out of the Laburnum Grove junction requires vehicles to utilise lane 2 of the east bound London Road carriageway, whereby there is a resultant slight increased risk of offside to offside vehicular collisions occurring.

The recently constructed scheme now provides two east bound vehicular traffic lanes where there was formerly a single lane. The single east bound and single west bound lanes were previously separated by an area of central hatched carriageway markings. The central hatched carriageway markings enabled vehicles turning left when exiting Laburnum Grove to overrun the markings without there being any particular or potential risk of being in conflict with east bound vehicles. The combination of the tight exit radius for vehicles turning left out of the Laburnum Grove junction and the loss of the central hatched carriageway markings now results in vehicles having to encroach into lane 2 of the east bound carriageway, whereby there is a resultant slight increased risk of offside to offside vehicular collisions occurring. It was also noted that the bollard on the western corner of the Laburnum Grove junction has sustained vehicle collision damage.

RECOMMENDATION

The existing tight exit radius for vehicles turning left out of the Laburnum Grove junction should be improved/increased by adjusting the kerblines. The Audit Team noted the presence of existing statutory undertakers plant within the adjacent footway area which may make it difficult to retain a conventional junction layout with full height raised kerbs whilst still incorporating the tactile paving layout. However, it may still be possible to improve the situation by incorporating the existing inspection chamber covers within a carriageway overrun area and replacing the existing chambers and covers with highway grade chambers and covers.

3.4 NON MOTORISED USER PROVISION

3.4.1 No Problems identified in this category at this Stage 3 Road Safety Audit.

3.5 ROAD SIGNS, CARRIAGEWAY MARKINGS & STREET LIGHTING

3.5.1 PROBLEM

Location 5 - Along the northern kerbline to the immediate east of the traffic signal controlled pedestrian crossing facility (Drawing No. SBC/T/IT/00198/000/01 Rev A).

Summary - Inspection of street lighting during the hours of darkness.

During the night time inspection, the Audit Team have identified that the lighting column at Location 5 was found to be inoperative. Concern arises that this results in a small pool of localised darkness at the location identified.

RECOMMENDATION

The inoperative lighting column should be attended to as soon as practicable.

END OF PROBLEMS IDENTIFIED AND RECOMMENDATIONS OFFERED IN THIS STAGE 3 ROAD SAFETY AUDIT

4.0 AUDIT TEAM STATEMENT

I certify that this Audit has been carried out in accordance with HD 19/03.

AUDIT TEAM LEADER

Adriano B. Cappella IEng, FIHE, MCIHT

Director

Acorns Projects Limited

Safety Traffic Project Management & Highway Engineering Consultants

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LU6 2SP

Signed :



Date : 22nd January 2015

AUDIT TEAM MEMBER

Sarah Taylor I.Eng, AMICE, FIHE, MCIHT

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ANNEX A

ANNEX A

A4 LONDON ROAD, M4 J5 TO SUTTON LANE, SLOUGH, BERKSHIRE

HIGHWAY IMPROVEMENTS

STAGE 3 ROAD SAFETY AUDIT

LIST OF SLOUGH BOROUGH COUNCIL DRAWINGS REVIEWED AT THIS STAGE 3 ROAD SAFETY AUDIT

DRAWING NO.	TITLE
SBC/T/IT/00198/000/01 Rev A	A4, M4 to Sutton Lane Highway Improvements - General Arrangements
SBC/T/IT/00198/100/02 Rev A	A4, M4 to Sutton Lane Highway Improvements - Statutory Undertakers
SBC/T/IT/00198/200/01 Rev A	A4, M4 to Sutton Lane Highway Improvements - Site Clearance
SBC/T/IT/00198/500/01 Rev A	A4, M4 to Sutton Lane Highway Improvements - Drainage
SBC/T/IT/00198/600/01 Rev A	A4, M4 to Sutton Lane Highway Improvements - Earthworks
SBC/T/IT/00198/700/01 Rev A	A4, M4 to Sutton Lane Highway Improvements - Pavements
SBC/T/IT/00198/1100/01 Rev A	A4, M4 to Sutton Lane Highway Improvements - Footways
SBC/T/IT/00198/1200/01 Rev A	A4, M4 to Sutton Lane Highway Improvements - Lining and Signs
SBC/T/IT/00198/1200/02 Rev A	A4, M4 to Sutton Lane Highway Improvements - Lining Setting Out

ANNEX B

ANNEX B - PROBLEM LOCATION PLAN

