

Safety Audit Report

Stage 1 – Preliminary Design



Proposed School Access, Junction Modifications and Pedestrian and Bus Improvements, Aim High School, Safechester

Client:

Spoonford District Council

Colin Buchanan
Highway Safety Group
10 Eastbourne Terrace
Paddington
London
W2 6LG

T 020 7053 1360
F 020 7053 1301
E safety@cbuchanan.co.uk
www.cbuchanan.co.uk

Report Status Final

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A1 Introduction

- A1.1 This report results from a Stage 1 Road Safety Audit carried out on the initial design of a new school access, junction modifications and pedestrian and bus improvements in the vicinity of Aim High School, Safechester, at the request of Spoonford District Council. The Audit was carried out during July 2008.
- A1.2 The Audit Team membership was as follows:
- | | |
|-----------------------------------|-------------------------------|
| <i>Kate Yeo MSc</i> | <i>Colin Buchanan, London</i> |
| <i>Rebecca Thomas BSc. (Hons)</i> | <i>Colin Buchanan, London</i> |
- None of the members of the Audit Team were involved in the preliminary design of the scheme.
- A1.3 The audit took place at the London office of Colin Buchanan on 7th July 2008. The audit comprised an examination of the documents provided by Spoonford District Council and listed in the Annex hereto. These documents consisted solely of drawings showing the proposed school access, junction modifications and pedestrian and bus improvements.
- A1.4 A visit to the site of the proposed priority junction, junction modifications and pedestrian and bus improvements was made on the afternoon of 3 July 2008. During the site visit the weather was fine and the road surface was dry.
- A1.5 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.
- A1.6 Where possible, all comments and recommendations are referenced to the design drawings and the locations have been indicated on the plan supplied with the audit brief. Where the Audit Team feel that an identified problem is of particular concern, the item is identified ******PROBLEM******.
- A1.7 This Safety Audit examines the safety implications of the proposals presented in the submitted drawings and noted on site. It presents observations and recommendations only where there are identified deficiencies in the safety of the scheme. This Audit report does not verify compliance of the schemes with any other standard or criteria.

A1.8

The completed preliminary design comprises


- Provision of an uncontrolled pedestrian crossing on Allways Road opposite the church and approximately 70m to the north west of the junction with Noway Road, to include dropped kerbs and tactile paving, a 3m x 1.5m central refuge, illuminated 'Keep Left' bollards on the traffic islands and tapered hatching on either side of the traffic islands
- Provision of a new priority junction with associated road markings on the south side of Allways Road opposite the existing junction with Someways Road, to include single entry and exit lanes and a right turn pocket for traffic approaching the junction from the north west
- Realignment of the kerb on both side of Allways Road between the proposed uncontrolled pedestrian crossing and a point opposite the church to the west and a point approximately 30m east of Noway Road to tie in with existing to provide:
 - A 3.4m southeastbound lane, a 3.6m northwestbound lane and a 3.0m right turn pocket for traffic turning into the proposed new school access to the north west of the junction of Allways Road/ Noway Road
 - Redesigned central islands between the proposed school access and the junction of Allways Road/ Noway Road to provide two 2.5m traffic lanes and two 3.5m bus only lanes/ bus stops with coloured surfacing, hatching around the islands and illuminated 'Keep left' bollards on islands
 - A 4.3m southeastbound lane, a 3.5m northwestbound lane, a 3.5m northwestbound bus stop/ bus only lane and a 2.7m right turn pocket at the junction of Allways Road/ Noway Road
- The stopping up of the existing junction at the western end of Someways Road to the south east of the Church access (which is to be retained); the conversion of an existing link on Someways Road to a new priority junction at the junction of Someways Road / Noway Road to maintain access for properties on Someways Road; provision of a turning head on the south side of Someways Road and creation of a new priority junction at the junction of Someways Road/ Noway Road
- Revisions to the kerb alignment on Noway Road on the approach to, and at, the junction with Allways Road to relocate the junction southeastwards; the provision of single entry and exit lanes at the junction of Allways Road/ Noway Road; provision of a central island with dropped kerbs and tactile paving to facilitate pedestrian movement across Noway Road; hatched markings in advance of the island; Give Way and 'Turn left' markings and two new gullies (one on either side of Noway Road at its junction with Allways Road



- Removal of the existing build-outs on Allways Road to the south east of its junction with Noway Road and the provision of a 3.5m wide controlled pedestrian crossing (measured between the crossing studs) with zig zag markings, stop lines, pedestrian crossing studs, dropped kerbs, tactile paving, guard rail along the southern side of Allways Road either side of the crossing approximately 25m east of the junction of Allways Road and Noway Road, and 50m of high friction surfacing on both approaches to the crossing
- Provision of an eastbound bus cage/stop 35m in length on Allways Road to the south-east of Noway Road



A1.9 No details of either existing or proposed pedestrian flows, speed data, or accident statistics were submitted to the Audit Team.



A1.10 There were no Departures from Standards reported to the Audit Team.


A2 Items raised at this Stage 1 Audit


Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.1	GENERAL	
A2.1.1	<p>Problem <i>Vehicle crossover may be lost as a result of proposals</i></p> <p>Location <i>Noway Road to the east of the proposed priority junction at Someways Road</i></p> <p>The Audit Team noted the proposed kerb realignment along the north side of Noway Road to accommodate the new priority junction layout at Someways Road, and noted that this buildout is adjacent to two houses in this location, one of which has a dropped kerb/ vehicle crossover.</p> <p>The Audit Team were concerned that the residents may be unable to enter and exit their driveway safely without crossing the footway, which could increase the potential for conflict, and reduce accessibility.</p> <p>Recommendation:</p> <p>That the retention of the vehicle crossover be shown on plans at the Detailed Design stage.</p>	

Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.1.2	<p>Problem <i>Stopping up of Someways Road could prevent vehicles from accessing the westernmost property</i></p> <p>Location <i>Western end of Someways Road to the east of the church on Allways Road, in the vicinity of the proposed stopping up</i></p> <p>The Audit Team noted that the stopping up of Someways Road involves the provision of a 9m kerbed area to the east of the access to the church on Allways Road, and noted on site that a private drive exited onto Someways Road in this location.</p> <p>The Audit Team were concerned that this area of footway could prevent vehicles from accessing the driveway at the far western end of Someways Road, which may encourage the undertaking of unexpected or illegal manoeuvres which could compromise safety.</p> <p>Recommendation:</p> <p>That the boundaries of the stopping up be carefully located so as to preserve access to private drives in the vicinity, at the Detailed Design stage.</p>	
A2.1.3	<p>Problem <i>Bollards may impede pedestrians boarding or alighting from buses</i></p> <p>Location <i>North-east side of Allways Road in the vicinity of the proposed bus stop to the south east of the junction with Noway Road</i></p> <p>The Audit Team noted that a number of bollards are located along the footway in the vicinity of the proposed bus stop, and was concerned that these may be hazardous for pedestrians boarding and alighting from buses.</p> <p>Recommendation:</p> <p>That plans for the removal or relocation of bollards which may hamper pedestrian movement in the vicinity of the bus stop be shown on plans at the Detailed Design stage.</p>	


Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.1.4	<p>Comment <i>Tree may require removal</i></p> <p>Location <i>South side of Rochester Way approximately 30m from Allways Road</i></p> <p>The Audit Team noted that there is an area of proposed kerb realignment close to the westernmost tree on the south side of Noway Road/Rochester Way, on the approach to its junction with Allways Road.</p> <p>The Audit Team would suggest that a review is required of whether it would be safe to retain the tree, at the Detailed Design stage.</p>	
A2.1.5	<p>Comment <i>Additional drainage provision may be required</i></p> <p>Location <i>Allways Road and Someways Road</i></p> <p>The Audit Team noted that gullies are located along Allways Road in the vicinity of the kerb realignment and along Someways Road in the vicinity of the stopped up area and would expect to see proposals to ensure that adequate drainage is provided here, at the Detailed Design stage.</p>	

Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.1.6	<p>Comment <i>Statutory Undertaker’s Plant, signs and lamp columns located within extents of kerb realignment</i></p> <p>Location <i>Eastern side of the junction of Noway Road at its junction with Allways Road</i></p> <p>The Audit Team noted the presence of Statutory Undertaker’s Plant within the vicinity of the footway realignment in this location and would expect to see proposals for the relocation or adjustment of these to be shown on plans at the Detailed Design stage.</p>	
A2.2	LOCAL ALIGNMENT	
A2.2.1	<p>Problem <i>Proximity of junctions may cause difficulties for large vehicles to align themselves correctly at the Give Way line</i></p> <p>Location <i>In the vicinity of the two new priority junctions of Someways Road</i></p> <p>The Audit Team noted the proximity of the two proposed priority junctions, and was concerned that large vehicles may have insufficient space to enable them to position themselves correctly on exiting to Noway Road. The Audit Team noted that no swept path information was provided at this stage.</p> <p>The Audit Team were concerned that this could increase the potential for conflict with vehicles entering Someways Road from Noway Road, although it is acknowledged that this would occur only infrequently.</p> <p>Recommendation:</p> <p>That swept paths be verified and the layout revised if necessary to enable vehicles to position themselves appropriately at Give Way lines.</p>	

Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.2.2	<p>Problem <i>Unclear whether delivery or refuse collection vehicles could use the proposed turning circle safely</i></p> <p>Location <i>Someways Road</i></p> <p>The Audit Team noted the proposal to provide a turning circle on Someways Road, and noted its proximity to the footway on Allways Road. The Audit Team noted that no swept path information was provided at this stage.</p> <p>The Audit Team were concerned that if large vehicles experienced difficulties using the turning circle provided, that the potential for overrunning the footway on Allways Road, and thus the danger to pedestrians using this footpath, would be increased.</p> <p>Recommendation:</p> <p>That swept paths be verified and the layout revised if necessary to ensure that the turning circle provided can be used safely by large vehicles.</p>	
A2.3	JUNCTIONS	
A2.3.1	<p>Problem <i>Absence of parking restrictions could compromise visibility at the new priority junction</i></p> <p>Location <i>Noway Road, immediately to the east of its junction with Someways Road</i></p> <p>The Audit Team noted that vehicles currently park along Noway Road in the vicinity of and to the east of the proposed junction at Someways Road and were concerned that vehicles parking near to the mouth of the junction could obstruct visibility of drivers and pedestrians, thus increasing the potential for collisions at the junction.</p> <p>Recommendation:</p> <p>That waiting/loading restrictions are provided in the vicinity of the junction to prevent vehicles from parking and obscuring visibility at the junction.</p>	

Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.3.2	<p>Problem <i>Bus stop and trees within visibility splay of new junction could obstruct visibility</i></p> <p>Location <i>Within the visibility splay of the new school access junction</i></p> <p>The Audit Team noted the visibility splays of 2.5m by 90m shown on plans, and noted that the canopy of trees are contained within the splay. For a visibility splay of 4.5m x 90m (the recommended dimensions), more trees are contained within the splay. In addition, when a northwestbound bus is using the stop, visibility to the right for traffic emerging from the priority junction will be obstructed.</p> <p>The Audit Team are concerned that obstructions to visibility could increase the potential for sudden braking and injudicious manoeuvres.</p> <p><u>Recommendation:</u></p> <p>That adequate visibility is provided at the junction.</p>	

Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.4	NON-MOTORISED USER PROVISION	
A2.4.1	<p>Problem <i>Stop line in close proximity to crossing studs could increase the potential for conflict with pedestrians</i></p> <p>Location <i>Allways Road to the south-east of its junction with Noway Road, at the proposed pedestrian crossing point</i></p> <p>The Audit Team noted that the proposed clearance between the stop line and the pedestrian studs at the crossing is just 1m. Schedule 4, Part 2, Para 4 and Diagram 1 of The Zebra, Pelican and Puffin Pedestrian Crossings Regulations and General Directions 1997 specifies a minimum distance between the stop line and the pedestrian crossing studs of 1.7m.</p> <p>The Audit Team were concerned that the margin for error if a vehicle were to misjudge its braking and overshoot the stop line was reduced, which could increase the potential for pedestrian/ vehicle conflicts.</p> <p>Recommendation:</p> <p>That the crossing layout and distance between the studs and stop lines is provided in accordance with the Zebra Pelican and Puffin Pedestrian Crossings Regulations and General Directions 1997 at the Detailed Design stage.</p>	

Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.4.2	<p>Problem <i>Bus stop located close to crossing could obstruct traffic and endanger pedestrians</i></p> <p>Location <i>Southeastbound exit from the controlled crossing</i></p> <p>The Audit Team noted the proposal to provide an unequal number of zigzag markings, and a bus stop in this location, and were concerned that this may make enforcement of the controlled area difficult. However, the main concern is that the distance between the bus stop and the crossing studs is only 6m, which could result in traffic blocking across the crossing point which could endanger pedestrians, or could encourage overtaking manoeuvres within the controlled zone of a crossing, contrary to Section IV Para 24 of the Zebra, Pelican and Puffin Crossings Regulations and General Directions 1997.</p> <p><u>Recommendation:</u></p> <p>That the bus stop is relocated southeastwards away from the controlled crossing facility.</p>	
A2.4.3	<p>Problem <i>Tree located next to the crossing may restrict visibility</i></p> <p>Location <i>North eastern footway of Allways Road to the south-east of Noway Road, in the vicinity of the proposed crossing</i></p> <p>The Audit Team noted that a large tree is located immediately to the north-west of the proposed pedestrian crossing on this footway and were concerned that a pedestrian's view of approaching traffic may be obstructed. In addition, it was unclear where the signal head was to be located in relation to the stop line, and so it is possible that this too may be difficult for approaching drivers to see. The Audit Team were concerned that this could increase the potential for vehicle/ pedestrian conflict.</p> <p><u>Recommendation:</u></p> <p>That appropriate steps are taken to ensure that adequate visibility of the signal heads and of pedestrians waiting to cross is provided at the crossing.</p>	

Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.4.4	<p>Problem <i>Poorly aligned/ incorrect tactile layout could misguide poorly sighted pedestrians</i></p> <p>Location <i>Noway Road at its junction with Allways Road</i></p> <p>The Audit Team noted the proposal to provide tactile paving at the priority junction, on both kerbs and on the splitter island, but noted that these were not aligned correctly. In addition, it was noted that the standard of two complete rows of tactile paving at indirect crossing points, and three at direct (in the line of travel) crossing points had not been consistently applied.</p> <p>The Audit Team were concerned that poorly sighted pedestrians using the crossing may be inadvertently guided away from the appropriate alignment and dropped kerbs provided opposite, which could increase tripping hazards.</p> <p>Recommendation:</p> <p>That all tactile paving layouts be provided in accordance with current tactile paving guidance.</p>	
A2.5	ROAD SIGNS, CARRIAGEWAY MARKINGS AND LIGHTING	
A2.5.1	<p>Problem <i>Poorly aligned road markings defining traffic lanes could increase the potential for head-on and side-impact collisions</i></p> <p>Location <i>Northwestbound Allways Road, between the proposed controlled crossing, and the junction with Noway Road</i></p> <p>The Audit Team noted that the zig zag markings on the eastbound approach to the crossing are not aligned correctly with markings provided for the protected right turn pocket and were concerned that the potential for head-on or side impact collisions between southeastbound ahead, and northwestbound right turning vehicles could be increased in this location.</p> <p>Recommendation:</p> <p>That the road markings are aligned in such a way as to clearly separate opposing traffic streams at the Detailed Design stage.</p>	

Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.5.2	<p>Problem <i>Right turn pockets not marked in accordance with guidance</i></p> <p>Location <i>Allways Road at its junctions with the new school access, and Noway Road</i></p> <p>The Audit Team noted the following with regard to the proposed right turn pockets:</p> <ul style="list-style-type: none"> ▪ No bifurcation arrows to Diagram 1039 were proposed on the entry to either of the right turn pockets and noted that this was in contrary to Para 7.10 (1) of Chapter 5 of the Traffic Signs Manual ▪ That the proposed right turn pocket at the junction of Noway Road did not provide adequate deceleration and turning length as recommended in Para 7.7 of Chapter 5 of the Traffic Signs Manual <p>The Audit Team were concerned that the proposed layouts could increase the potential for sudden braking, which could reduce safety.</p> <p><u>Recommendation:</u></p> <p>That the right turn pocket markings are designed in accordance with Chapter 5 of the Traffic Signs Manual.</p>	
A2.5.3	<p>Problem <i>Unclear road markings may increase the potential for head-on or side impact collisions</i></p> <p>Location <i>Allways Road to the southeast of the proposed controlled pedestrian crossing facility</i></p> <p>The Audit Team noted from plans that no centre lines were proposed between the zig zag markings and the southeastern extent of the scheme. It is assumed that the existing centre lines are to be removed, as these would not be provided alongside zig zag markings.</p> <p>The Audit Team are concerned that an absence of centre line markings could encourage vehicles to overtake buses at the stop, causing them to stray into the opposing traffic lane and increase the potential for collisions.</p> <p><u>Recommendation:</u></p> <p>That centre lines are used to safely separate opposing traffic streams.</p>	

Audit Item No.	Audit Team Observation and Recommendation	Site photograph
A2.5.4	<p>Problem <i>Alignment of hatching may increase the potential for island strikes</i></p> <p>Location <i>Southeastbound carriageway of Allways Road, on the approach to the splitter islands in the vicinity of the 2.5m lane</i></p> <p>The Audit Team noted that the angle of the proposed hatching was such that it may not adequately guide traffic safely around the island. The Audit Team were concerned that this could increase the potential for island strikes, particularly during the hours of darkness.</p> <p>Recommendation:</p> <p>That the hatching be revised to safely guide traffic away from the kerb of the splitter island.</p>	
A2.5.5	<p>Comment <i>Inappropriate road marking at pedestrian crossing may confuse motorists</i></p> <p>Location <i>Southeastbound approach to the proposed crossing on Allways Road to the south-east of its junction with Noway Road</i></p> <p>The Audit Team noted that the stop line was incorrectly marked on plans and would expect to see a stop line to Diagram 1001 shown on plans at the Detailed Design stage.</p>	
A2.5.6	<p>Comment <i>High friction surfacing could be extended to the crossing studs</i></p> <p>Location <i>On both approaches to the controlled pedestrian crossing</i></p> <p>The Audit Team noted that high friction surfacing is proposed, and would suggest that this could be extended to the crossing studs in order to maximise the potential for vehicle braking in advance of the crossing.</p>	
A2.5.7	<p>Comment <i>Ensure that appropriate type of guardrailing is provided</i></p> <p>Location <i>On the southwest side of Allways Road, on either side of the proposed controlled crossing facility.</i></p> <p>The Audit Team noted that guardrailing to British Standard 7818:1995 is proposed, and note that the standard type of guardrailing is not appropriate for installation in locations where children may congregate. It is suggested that the exact type of guardrailing be specified on plans at the Detailed Design stage.</p>	

A3 Audit Team Statement

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

Audit Team Leader

Name: Kate Yeo *MSc*
Position: Associate Traffic Engineer
Organisation: Colin Buchanan
Address: 10 Eastbourne Terrace
Paddington
London W2 6LG

Tel: 020 7053 1358
e-mail: Kate.yeo@cbuchanan.co.uk

Signed:

Date:

Audit Team Member

Name: Rebecca Thomas *BSc (Hons)*
Position: Senior Engineer
Organisation: Colin Buchanan
Address: 10 Eastbourne Terrace
Paddington
London W2 6LG

Tel: 020 7053 1360
e-mail: Rebecca.thomas@cbuchanan.co.uk

Others involved

e.g. observer, police, network management representative, specialist advisor.

None

Appendix 1

Documents supplied with Audit Brief

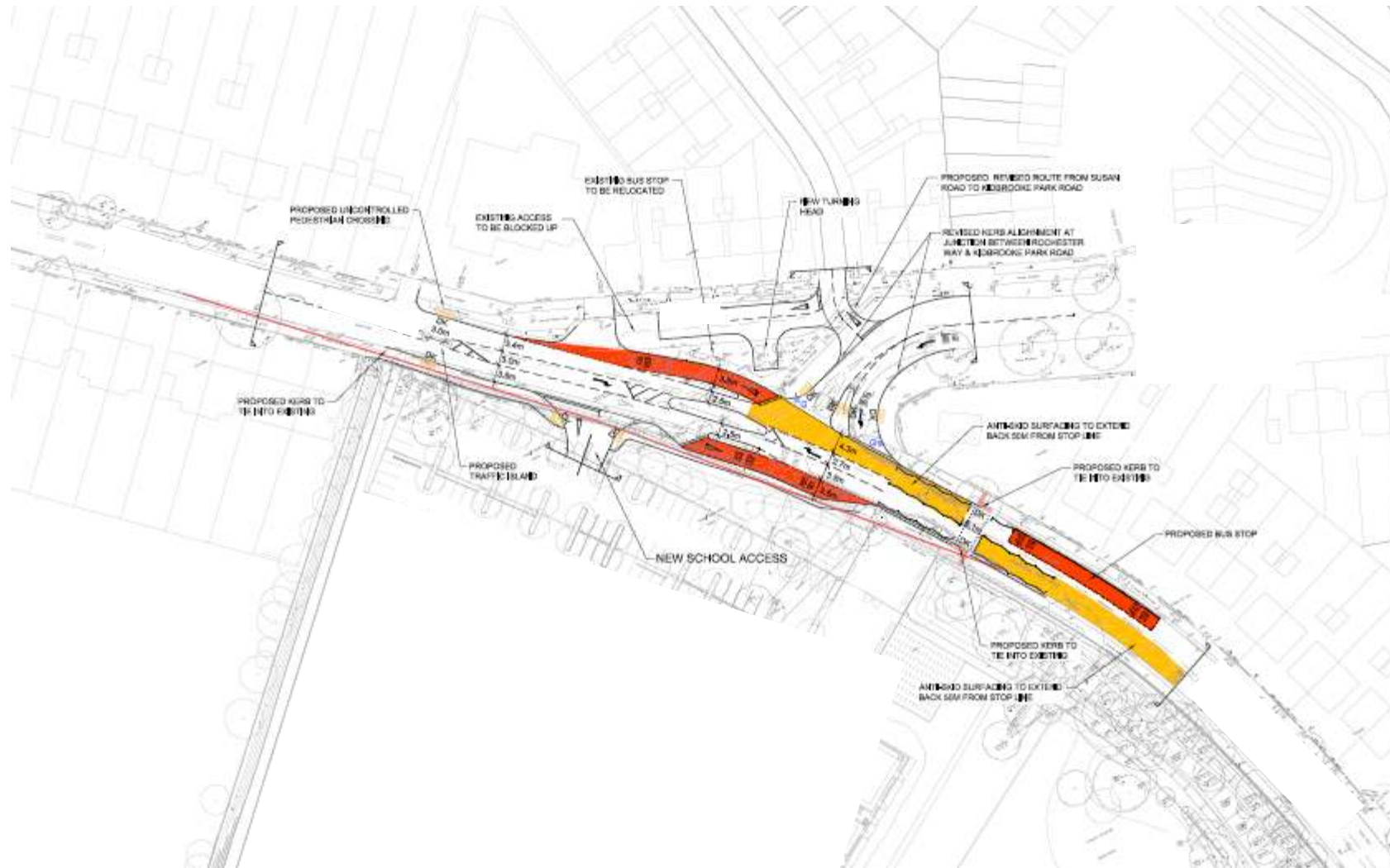
Drawings supplied for Audit

Plan No	Title
10203-OT-001	Aim High School New Junction Layout General Arrangement

Appendix 2

Location Plans

Stage 1 Safety Audit: New School Access, Junction Modifications and Pedestrian and Bus Improvements, Aim High School. Safechester



Appendix 3

Feedback Form

Road Safety Audit Feedback Form

Scheme New School Access, Junction Modifications and Pedestrian and Bus Improvements, Aim High School, Safechester

Audit Stage 1

Date Audit Completed 12 August 2008

Audit Item No.	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative Measures (describe)	Alternative measures accepted by Audit Team (yes/no)
A2.1.1	Yes	Yes		-
A2.1.2	Yes	Yes		-
A2.1.3	Yes	Yes		-
A2.2.1	Yes	Yes		-
A2.2.2	Yes	Yes		-
A2.3.1	Yes	Yes		-
A2.3.2	No	No	New Junction has been designed to provide traffic calming in the form of reduced speeds. The visibility in question relates to an access to a school carp-park, where trip rates are expected to be minimal. Providing 4.5m x 90m visibility would result in the removal of several onsite trees and provide only minimal benefits in terms of safety for this access.	Yes
A2.4.1	Yes	Yes		-
A2.4.2	Yes	Yes		-
A2.4.3	Yes	Yes		-

Stage 1 Safety Audit: New School Access, Junction Modifications and Pedestrian and Bus Improvements, Aim High School. Safechester

Audit Item No.	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative Measures (describe)	Alternative measures accepted by Audit Team (yes/no)
A2.4.4	Yes	Yes		-
A2.5.1	Yes	Yes		-
A2.5.2	Yes	Yes		-
A2.5.3	Yes	Yes		-
A2.5.4	Yes	Yes		-

Signed: _____ Design Team Leader Date _____

PLEASE COMPLETE AND RETURN TO SAFETY AUDIT TEAM

Safety Audit Signed off: _____ Audit Team Leader Date _____