

A105 North Of Borden Avenue to Walnut Grove Cycle Enfield - Section 13

Stage 2 Road Safety Audit

Ref: 2759.02.13/032/A105/BOR/2016

Prepared for:

London Borough of Enfield

By:

Road Safety Audit, TfL Asset Management Directorate

Prepared by: Shane Martin, Audit Team Leader

Checked by: Kevin Seymour, Audit Team Member

Approved by: Andrew Coventry

Version	Status	Date
A	Audit report issued to Client	25/11/2016



1.0 INTRODUCTION

1.1 Commission

- 1.1.1 This report results from a Stage 2 Road Safety Audit carried out on the A105 North of Borden Avenue to Walnut Grove, Cycle Enfield - Section 13 proposals.
- 1.1.2 The Audit was undertaken by TfL Road Safety Audit in accordance with the Audit Brief issued by the Client Organisation on 14th November 2016. It took place at the Palestra offices of TfL on 15th November 2016 and comprised an examination of the documents provided as listed in Appendix A, plus a visit to the site of the proposed scheme.
- 1.1.3 The visit to the site of the proposed scheme was made on 15th November 2016. During the site visit the weather was sunny and the existing road surface was dry.

1.2 Terms of Reference

- 1.2.1 The Terms of Reference of this Audit are as described in TfL Procedure SQA-0170 dated May 2014. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and how it impacts on all road users 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 to resolve a problem the Audit Team may, on occasion, have referred to a design standard without touching on technical audit. An absence of comment relating to specific road users / modes in Section 3 of this report does not imply that they have not been considered; instead the Audit Team feels they are not adversely affected by the proposed changes.
- 1.2.2 This Safety Audit is not intended to identify pre-existing hazards which remain unchanged due to the proposals; hence they will not be raised in Section 3 of this report as they fall outside the remit of Road Safety Audit in general as specified in the procedure SQA-0170 dated May 2014. Safety issues identified during the Audit and site visit that are considered to be outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in Section 4 of this report.
- 1.2.3 Nothing in this Audit should be regarded as a direct instruction to include or remove a measure from within the scheme. Responsibility for designing the scheme lies with the Designer and as such the Audit Team accepts no design responsibility for any changes made to the scheme as a result of this Audit.
- 1.2.4 In accordance with TfL Procedure SQA-0170 dated May 2014, this Audit has a maximum shelf life of 2 years. If the scheme does not progress to the next stage in its development within this period, then the scheme should be re-audited.
- 1.2.5 Unless general to the scheme, all comments and recommendations are referenced to the detailed design drawings and the locations have been indicated on the plan located in Appendix B.

- 1.2.6 It is the responsibility of the Design Organisation to complete the Designer's response section of this Audit report. Where applicable and necessary it is the responsibility of the Client Organisation to complete the Client comment section of this Audit report. Signatures from both the Design Organisation and Client Organisation must be added within Section 5 of this Audit report. A copy of which must be returned to the Audit Team.

1.3 Main Parties to the Audit

1.3.1 Client Organisation

Client contact details: Paul Rogers – London Borough of Enfield

1.3.2 Design Organisation

Design contact details: Deepak Sharma - Jacobs

1.3.3 Audit Team

Audit Team Leader: Shane Martin – TfL Road Safety Audit

Audit Team Member: Kevin Seymour – TfL Road Safety Audit

Audit Team Observer: None present

1.3.4 Other Specialist Advisors

Specialist Advisor Details: None present

1.4 Purpose of the Scheme

The purpose of the scheme is to provide 5.5km of two-way segregated cycle route with public realm improvements at town centres*.

*Taken directly from the Audit Brief.

1.5 Special Considerations

- 1.5.1 This Audit Report covers Section 13 (Sheets 33 to 38) of this route only, along the A105 Village Road north of the junction with Borden Avenue to southeast of the junction with Bush Hill.

- 1.5.2 Full details of the traffic signal staging / timings have not yet been provided and therefore the Audit Team could not fully comment on this element of the proposals.

2.0 ITEMS RAISED IN PREVIOUS ROAD SAFETY AUDITS

The proposals were subject to a Stage 1 Road Safety Audit carried out in March 2016 by TfL Road Safety Audit, Asset Management Directorate (Ref 2524/032/A105/BOR/2016). This report covered the whole route and therefore many of the issues raised are not specific to this (Section 13) part of the proposals. Items raised in the previous Audit Report deemed relevant to this section can be summarised as follows:

Problem 3.1.3 Cycle lanes past junction locations - Segregated cycle lanes terminating just before side road junctions may increase left turning collisions between vehicles and cyclists

This problem remains and is therefore raised as 3.1.3 within this Audit Report.

Problem 3.1.4 Side road cycle crossovers at raised junction tables - Drivers turning from main roads to side roads may brake late due to cyclists crossing side roads, leading to nose to tail collisions, or cycle to vehicle conflict.

This problem appears to remain in the detailed design proposals and therefore this is raised again as 3.1.4 in this Audit Report.

Items raised in the Stage 1 Road Safety Audit report that are outside the Terms of Reference:

Issue 4.3 The pedestrian refuge is to be relocated and pedestrian desire lines may not be accommodated.

This issue is considered to remain in part and will therefore be raised again as part of 4.1 in this Audit report.

Issue 4.4 The northbound bus boarder and cycle bypass lane appears to be located at the private driveways of 87 / 89 and 93 London Road.

This issue is considered to be resolved and will therefore not be raised again within this Audit report.

Issue 4.5 The southbound bus boarder and cycle bypass lane appears to be located at the private driveway of Westwood Court.

This issue is considered to be resolved and will therefore not be raised again within this Audit report.

3.0 ITEMS RAISED AT THIS STAGE 2 ROAD SAFETY AUDIT

This section should be read in conjunction with Paragraphs 1.2.1, 1.2.2 and 1.2.3 of this report.

3.1 CYCLING FACILITIES

3.1.1 PROBLEM

Location: General to scheme, multiple locations

Summary: The use of 'Orcas' as a segregation measure may lead to trips / falls for cyclists and pedestrians.

The proposals include 'Orcas' as a semi / soft segregation measure alongside the cycle tracks. The Audit Team are concerned that the 'Orcas' may not be adequately visible to road users, particularly pedestrians, cyclists and powered-two-wheelers.

Pedestrians crossing the carriageway may fail to appreciate the raised nature of the 'Orcas', with a potential for trips and falls within the carriageway.

Riders of two wheeled vehicles may fail to appreciate that the 'Orcas' are raised, particularly in inclement weather. Riders may become destabilised as they over-run the features, leading to an increased potential to become unseated, with a resultant potential for personal injury.

The potential for injury is exacerbated as the features are situated in positions where they are encouraged to be traversed, such as outside residential accesses.

RECOMMENDATION

It is recommended that any potential trip hazards are removed; this may require the use of an alternative type of segregation measure.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>The use of light segregation Orcas has been a proposed element of the scheme since initial development. The Orcas will be set inside the mandatory cycle lane marking (diag 1049B) and are white/black marked to stand out. In addition, the start and finish of an Orca line will be marked by a wand to further highlight the Orca line as it is approached. Orcas placed alongside vehicular access will be of a lower profile to allow vehicular over run. Orcas will be sited away from pedestrian crossing points to minimise the risk of trips</p> <p>Post construction monitoring is recommended at a number of agreed locations to determine if there are any issues and to allow for modifications if necessary.</p>	
Client Organisation Comments	
<p>Designer's response accepted – post implementation monitoring will be carried out.</p>	

3.1.2 PROBLEM

Location: General to the scheme – cycle lanes past junction locations

Summary: Segregated cycle lanes terminating just before side road junctions may increase left turning collisions between vehicles and cyclists

At a number of locations, segregated cycle lane / bypasses are returned to the carriageway just before side road junction locations. At such locations it may be difficult for both sets of road users to understand who has priority and this may lead to turning collisions involving cyclists, particularly where bus stop bypasses are located on the approach to junctions and where ‘floating’ parking / loading areas are close to junctions. Cyclists may find it difficult to avoid vehicles entering or emerging from side roads if constrained by the segregation features, which could lead to increased risk of merging / failure to give way type collisions.

RECOMMENDATION

Research from TRL (PPR703 – Trials of segregation set-back at side roads) indicates that setting back cycle lanes by at least 20m from side roads may improve cyclist safety at junctions. Such an approach would have an effect on bus stop locations and the cycle bypass facilities provided at them. There is also likely to be an effect on the length of ‘floating’ parking / loading bays.

Design Organisation Response	Accepted / Part Accepted / Rejected
This only occurs where cyclists are returning to the carriageway whilst exiting the bus stop borders. Due to limitations of moving the bus stops and the number side roads it was not possible to provide a set back of at least 20m from all side roads when cyclists are returning to the carriageway. Many of the side roads are tight residential streets which can only fit one car at a time when cars are parked; therefore vehicles should be travelling at low speeds whilst turning into the side roads. Majority of the radii at side road bell mouths have been tightened to further reduce speeds for turning vehicles.	
Client Organisation Comments	
Designer’s response accepted	

3.1.3 PROBLEM

Location: General to scheme, multiple locations

Summary: Loading bays across the semi segregated cycle track may result in side swipe or shunt type collisions as cyclists divert into the general traffic lane.

The proposals include various small sections of the semi segregated cycle track which are advisory rather than mandatory and utilise mini orcas and double yellow lines which permit loading only outside of peak hours. The Audit Team are concerned that vehicles parked within the cycle track may result in cyclists diverting out of the track and into the adjacent carriageway running lane. Such manoeuvres may not be anticipated by drivers and an increased potential for collisions between motorists and cyclists may result.

RECOMMENDATION

It is recommended that parking is not permitted across any section of the segregated cycle track.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>Parking for blue badge holders and loading has been allowed, with restrictions, to allow some level of compensatory provision for residents. The forward visibility in such cases, and the spacing of Orcas will allow cyclists to enter the main carriageway in a safe manner, and allow them to return to the cycle lane once any encountered parked vehicle has been passed.</p>	
Client Organisation Comments	
<p>Designer's response accepted. The 'loading gaps' along residential sections of the route will be introduced on an experimental basis and kept under review.</p>	

3.1.4 PROBLEM

Location: General to the scheme – side road cycle crossovers at raised junction tables

Summary: Drivers turning from main roads to side roads may brake late due to cyclists crossing side roads, leading to nose to tail collisions, or cycle to vehicle conflict

At a number of locations the off-road cycle facilities cross side roads at raised table areas. Drivers turning from the main road have a short stacking space between the main road and these cycle crossovers due to the location of the give way lines to create priority for cyclists. Drivers may be confused by the arrangement and fail to give way to cyclists, or may stop suddenly and remain partially within the main carriageway, which may lead to late braking nose to tail collisions.

Drivers entering the main road may be confused by the double give way feature, and/or stop across the cycle lane, which may lead to nose to tail collisions or cycle to vehicle conflict.

There is inconsistency in the provision of give ways for cyclists at such crossing locations and this may confuse users and lead to failure to give way type conflicts between cycles and vehicles.

RECOMMENDATION

If such cycle priority is to be provided at side roads then an appropriate stacking space should be provided between the main road and cycle crossing to allow a single vehicle to wait between the main road and cycle crossing without encroaching in to the main carriageway or blocking the cycle crossing (reference London Cycle Design Guide).

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>In section 13 there is one location where the off road cycle track crosses a side road at a raised junction. This occurs at the Park Avenue/Village Road junction where an appropriate stacking space of at least 6m has been provided to allow a vehicle to wait without encroaching onto the carriageway or cycle track. Give way markings rather than elephants foot prints have been used at this location as providing both give way and elephants footprints would decrease the available stacking space.</p>	
Client Organisation Comments	
<p>Designer's response accepted</p>	

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3.1.5 PROBLEM

Location: General to scheme, multiple locations

Summary: Bus passengers boarding or alighting may result in collisions with cyclists on the track

The Audit Team are concerned that proposed cycle tracks run immediately adjacent to proposed bus stop boarders. Therefore bus passengers would board / alight a bus from / onto the cycle tracks. This may result in cyclists diverting away from the cycle track whilst their path is obscured, which may result in increased collisions with pedestrians or vehicles who may not expect cyclists diverting from the track. In addition, bus passengers alighting may not anticipate or be able to see approaching cyclists immediately adjacent to the bus, which may result in cycle to pedestrian type collisions. Visually impaired pedestrians, particularly those alighting from a bus may follow the kerb line and inadvertently enter the carriageway. Visually impaired pedestrian unknowingly within the carriageway are at an increased potential for collisions with motorists.

RECOMMENDATION

It is recommended that the layout of the bus stop boarders / cycle tracks are altered to mitigate the potential interactions with bus passengers. This may include, but is not limited to, providing tramline tactile paving prior to the ramps down to carriageway level and an increased separation between the boarding / alighting area and the cycle track.

Design Organisation Response	Accepted / Part Accepted / Rejected
Bus boarders have been introduced with a 0.5m buffer at locations where there is not scope to introduce a bus stop by-pass, to deliver an acceptable level of route continuity particularly at conflict points such as bus stops, where buses will be pulling into the kerb, through the desire line of a cyclist. The proposed bus stop boarders will use different material/tones to clearly show a change in environment from a segregated facility to a shared space. This is not dissimilar to a shared space environment adjacent to a toucan crossing, where pedestrian and cycles mix.	
Monitoring can be undertaken post-implementation to review the safe operation of the proposed design.	

Client Organisation Comments

Designer's response accepted – operation of the bus stop boarders will be monitored post-implementation.

3.1.6 PROBLEM

Location: General to scheme, multiple locations

Summary: Bus boarder layout across the cycle lane / track may result in increased collisions.

The Audit Team are concerned that the proposed layout of the bus boarder across the cycle lane may result in drivers not appreciating the kerb upstand and an increased potential for kerbs strikes. This could result in loss of control, injury to vehicle occupants or for those on board powered two wheelers to be dismounted. Additionally, visually impaired pedestrians,

RECOMMENDATION

It is recommended that the layout of the bus stop boarders / cycle tracks are altered to mitigate the potential interactions with bus passengers. This may include, but is not limited to, providing an increased separation between the boarding / alighting area and the cycle track.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>The bus boarders in section 13 will incorporate a 540mm wide buffer strip of kerb and tegula blocks between kerb face and edge of the cycle track running lane.</p> <p>The boarder areas where they alter to footway level will be highlighted in different materials and contrasting colours to signify to all users that they are entering what is, effectively, a shared area.</p> <p>Approaching cyclists will access this area via a ramp, preceded by a line of orcas and white lining. This, together with the visual layout of the bus boarder area will indicate to slow their speed and take caution.</p> <p>Kerb upstands throughout the scheme will be 140mm.</p>	

Client Organisation Comments
<p>Designer's response accepted – operation of the bus stop boarders will be monitored post-implementation.</p>

3.1.7 PROBLEM

Location: Various - bus stop boarders with raised sections of cycle track

Summary: Motorists may not notice the kerbed segregation island.

The Audit Team are concerned that motorists may not appreciate that the edge of the cycle track includes a full height kerb at various bus stop borders. This kerbed physical segregation commences within the carriageway running lane and no features to highlight this physical feature or guide users alongside it are proposed. It may therefore not be clear or conspicuous. Motorists may collide with the kerb or swerve to avoid the features if they are noticed within close proximity, which may result in loss of control type collisions and injury to those on or within the vehicle.

RECOMMENDATION

It is recommended to alter the layout to suitably guide vehicles alongside the kerbs. This may include but is not limited to providing a vertical illuminated feature such as an Illuminated Guide Post (IGP) and altering the path of the orcas / mandatory cycle lane marking so that it suitably highlights and 'ties in' to the physical island providing suitable guidance alongside the feature.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>Throughout the scheme there will be mandatory cycle lane marking (diag 1049B) 150mm width which will indicate to vehicles the edge of carriageway. On the approach to the kerbed segregation island this road marking will be splayed out so that it is offset 150mm from the edge of the kerb.</p>	
Client Organisation Comments	
<p>Designer's response accepted. The need for further measures to increase conspicuity of the kerbing will be reviewed post-implementation.</p>	

3.2 PEDESTRIAN CROSSING FACILITIES

3.2.1 PROBLEM

Location: A – A105 Village Road vehicular access to property number 71 (Sheet 34/47)

Summary: Potential for collisions with proposed pedestrian refuge island due to close proximity of off street parking.

The proposed tactile paving, dropped kerbs and pedestrian refuge island align with a vehicular access to the front of house number 71 Village Road. The Audit Team are concerned that if motorists attempt to access via the drop kerb (no formalised crossover is present) then this may lead to increased collisions between pedestrians and vehicles particularly those reversing entering or exiting the parking.

Vehicles exiting may find it difficult to do so due to the pedestrian refuge island, if the island is over-run then damage may make it less conspicuous with an increased potential for swerving and potential loss of control or kerb strikes as a result.

RECOMMENDATION

It is recommended that measures are taken to ensure that the crossing is likely to be safe and appealing to all users. This may include but is not limited to providing bollards or similar to prevent vehicular miss-use or relocating the crossing facility.

Design Organisation Response	Accepted / Part Accepted / Rejected
The pedestrian refuge island has been positioned so that it aligns with the wall in front of property 71, not the access point. Tracking movements have been checked to confirm that vehicles can exit from properties without striking the pedestrian refuge island.	
Client Organisation Comments	
Designer's response accepted - use of the vehicle access can be reviewed post-implementation.	

3.3 CYCLING FACILITIES

3.3.1 PROBLEM

Location: B – Village Road junction with Conifer Gardens (Sheet 33/47)

Summary: Motorists turning in to Conifer Gardens may not appreciate cyclists on the nearside of the southbound carriageway.

The Audit Team are concerned that motorists turning in to Conifer Gardens may not appreciate the potential presence of southbound cyclists travelling along the nearside cycle track. Southbound vehicles may be slow moving or stationary at this location due to the close proximity of the zebra crossing to the south. Therefore, particularly whilst southbound traffic is slow moving, cyclists may be travelling faster than the adjacent vehicles. This may result in an increased potential for vehicles to turn across the path of cyclists commonly know as a 'left hook' type collision or for right turns across the path of cyclists with an increased potential for injury to these users as a result.

RECOMMENDATION

It is recommended that additional features are provided to highlight the potential presence of cyclists across the mouth of this junction. This may include but is not limited to cycle logo road markings.

Design Organisation Response	Accepted / Part Accepted / Rejected
Cycle Logo markings have been provided at the mouth of the junction to highlight the potential presence of cyclists across the mouth of the junction.	
Client Organisation Comments	
Designers response accepted	

3.3.2 PROBLEM

Location: C – A105 Village Road junction with Park Avenue / Village Road (Sheet 35/47)

Summary: Motorists turning right from Village Road (side road) towards the A105 Village Road may not notice cyclists crossing Park Avenue between sections of the southbound segregated cycle track on the A105 Village Road.

The Audit Team are concerned that motorists turning right from Village Road (side road) may be focusing on finding gaps between vehicular traffic approaching in each direction and may pull out across the path of cyclists without appreciating their presence or the requirement to give-way to them. This may result in side impact type collisions between motorists and cyclists. Additionally, if motorists brake hard to avoid collisions, an increased potential for shunt type collisions may result.

RECOMMENDATION

It is recommended to make alterations to reduce the potential for such collisions; this may include, but is not limited to, making Village Road (side road) entry only or left turn only.

Design Organisation Response	Accepted / Part Accepted / Rejected
Both Village Road and Park Avenue are residential areas and they are not expected to be heavily trafficked. Motorists turning right out of Village Road should be giving way to the cycle lane after they have safely manoeuvred onto Park Avenue. Making Village Road entry only or left turn only will not solve the problem as it would be difficult to enforce. Banning these movements would also lead to increased traffic flows in the residential streets which would not be appropriate.	
Client Organisation Comments	
Designers response accepted – use of junction will be reviewed post-implementation.	

3.3.3 PROBLEM

Location: D – A105 Village Road junction with Park Avenue (Sheet 35/47)

Summary: Motorists turning in to Park Avenue may have restricted visibility of a southbound cyclist on the track due to the proposed tree.

The Audit Team are concerned that motorists turning in to Park Avenue from the A105 Village Road may have restricted visibility of cyclists travelling southbound on the cycle track depending upon the proposed tree trunk girth and height of the tree canopy. If the tree obscures visibility between cyclists attempting to assert priority over the side road and approaching vehicles it may result in an increased potential for collisions between vehicles entering Park Avenue and southbound cyclists crossing between the two sections of segregated cycle track. Additionally, if motorists brake hard to avoid collisions, an increased potential for shunt type collisions may result.

RECOMMENDATION

It is recommended to ensure that the proposed tree does not significantly impair visibility between motorists entering Park Avenue and cyclists travelling south between sections of the segregated cycle track. This may include selecting a tree which has a small trunk girth and a canopy which does not extend low enough to obscure the view of a cyclist. It is considered important that this is considered for future growth and consideration may also include relocating the proposed tree.

Design Organisation Response	Accepted / Part Accepted / Rejected
Future growth and monitoring of canopy height will be incorporated into the asset management register.	
Client Organisation Comments	
Designer's response accepted – type of tree selected will take into account need to maintain sightlines at the junction.	

3.3.4 PROBLEM

Location: E – A105 Village Road northbound cycle track between junction with Sittingbourne Avenue and Faversham Avenue (Sheet 36/47)

Summary: Northbound cyclists may have insufficient effective width and may not be able to suitably sight / avoid pedestrians crossing between the bus shelter and cage.

The proposed northbound cycle track between the junctions of Sittingbourne Avenue and Faversham Avenue appears to run very closely to existing mature trees. It is not clear if these have been fully considered in terms of the impact that roots may have on the obtainable width or the effective width which the vertical obstructions that the tree trunks create. Furthermore, as a bus stop border and shelter are provided either side of the proposed cycle track, the trees may result in an increased potential for reduced visibility between pedestrians walking between the bus shelter / border, and cyclists on the track. Therefore, the potential combination of reduced effective width of the cycle track and reduced visibility between pedestrians and cyclists may result in increased risk of collisions between cyclists and pedestrians.

RECOMMENDATION

It is recommended to alter the cycle track so that the effective width is sufficient and that the potential for collisions with pedestrians is minimised. This may include, but is not limited to repositioning the cycle track to the rear of the mature trees and relocating the bus stop shelter so that it is close to kerbside.

Design Organisation Response	Accepted / Part Accepted / Rejected
There is one tree at the southern end of the bus boarder that lies adjacent to the boarder. Construction comprises build-up of carriageway levels to footway levels so it is not expected that root structure will pose a problem. The design has needed to limit the impact of proposals on existing trees. Where possible, existing trees have been retained. The location of this tree should have no impact on forward visibility of cyclists accessing the bus boarder.	
Client Organisation Comments	
Designer's response accepted	

3.3.5 PROBLEM

Location: F – A105 Village Road near junction with Sittingbourne Avenue and Faversham Avenue (Sheet 36/47)

Summary: Proposed on footway parking may result in an increased potential for collisions with cyclists

The proposals include various on footway parking bays within this area. The Audit Team are concerned that vehicles entering / exiting these bays may:

- Cross the semi segregated sections of cycle tracks,
- Not have sufficient visibility of cyclists in the cycle tracks due to the angle of approach / entry and cyclists being in a potential blind spot,
- Not have sufficient visibility of cyclists in the cycle tracks due to the trees which may restrict visibility between vehicles emerging from the bays and cyclists approaching,
- Result in dooring of cyclists in the cycle tracks.

This may therefore result in increased potential for injuries to cyclists as vehicles utilise these parking bays.

RECOMMENDATION

It is recommended to alter the parking provision so that it does not involve motorists entering (including dooring) or crossing the cycle tracks. This may require an increase in offset from the cycle facility and relocation of the bays away from trees to maintain appropriate forward visibility.

Design Organisation Response	Accepted / Part Accepted / Rejected
There is considerable pressure to maintain as much parking provision, as possible, along the route. The constraints within the available road space place a limit on alternative locations for parking. Whilst there will be a need to cross the cycle lane, the presence of orcas and the solid white line should be sufficient to notify drivers of the possibility of cyclists approaching. The presence of the orcas, particularly, will encourage drivers to access and egress the parking bays with care.	
Client Organisation Comments	
Designer's response accepted	

End of list of problems identified and recommendations offered in this Stage 2 Road Safety Audit

4.0 ISSUES IDENTIFIED DURING THE STAGE 2 ROAD SAFETY AUDIT THAT ARE OUTSIDE THE TERMS OF REFERENCE

Safety issues identified during the audit and site inspection that are considered to be outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in this section. It is to be understood that, in raising these issues, the Audit Team in no way warrants that a full review of the highway environment has been undertaken beyond that necessary to undertake the Audit as commissioned.

4.1 ISSUE

Location: Various – throughout segregated on footway cycle tracks

Reason considered to be outside the Terms of Reference: Issue for clarification rather than a defined road safety concern.

The typical cross section of the on footway cycle track indicates that 3 rows of granite setts will be provided alongside the edges of the track. It is considered that these are likely to provide a reasonable tonal contrast and a texture / tactile difference to highlight the cycle track / edge of footway.

It is assumed that these will be laid almost flush (maximum upstand of less than 6mm) so that they do not present a trip hazard for pedestrians.

Design Organisation Response	Accepted / Part Accepted / Rejected
Confirmed.	
Client Organisation Comments	
Designer's response accepted	

4.2 ISSUE

Location: 1 – A105 Village Road proposed pedestrian refuge island north of junction with Teynham Avenue (Sheet 34/47)

Reason considered to be outside the Terms of Reference: Issue for consideration rather than a defined road safety concern.

The proposed pedestrian refuge island to the north of Teynham Avenue may result in difficulties for users of the parking bay on the frontage of house number 71 to exit on to the carriageway without colliding with the pedestrian refuge island / features within the island. Such collisions are considered unlikely to result in injuries to vehicle occupants but may result in damage and ongoing maintenance issue with the refuge island.

It is noted that no formalised vehicular crossover appears to be present but it may be worthwhile to check the vehicular swept paths and / or make alterations to enable or restrict such manoeuvres.

Design Organisation Response	Accepted / Part Accepted / Rejected
The pedestrian refuge island has been positioned so that it aligns with the wall in front of property 71, not the access point. Tracking movements have been checked to confirm that vehicles can exit from properties without striking the pedestrian refuge island.	
Client Organisation Comments	
Designer's response accepted	

5.0 SIGNATURES AND SIGN-OFF

5.1 AUDIT TEAM STATEMENT

We certify that we have examined the drawings and documents listed in Appendix A. to this Safety Audit report. The Road Safety Audit has been carried out in accordance with TfL Procedure SQA-0170 dated May 2014, with the sole purpose of identifying any feature that could be removed or modified in order to improve the safety of the measures. The problems identified have been noted in this report together with associated suggestions for safety improvements that we recommend should be studied for implementation.

No one on the Audit Team has been involved with the design of the measures.

AUDIT TEAM LEADER:

Name: Shane Martin MCIHT, MSoRSA Signed: 

Position: Principal Road Safety Auditor Date: 25/11/2016

Organisation: Transport for London, Road Safety Audit
Asset Management Directorate

Address: 4th Floor Palestra, 197 Blackfriars Road, London, SE1 8NJ

Contact: shane.martin@tfl.gov.uk (020 3054 2590)

AUDIT TEAM MEMBER:

Name: Kevin Seymour Signed: 
B Sc, PG Dip TS, MCIHT, MSoRSA

Position: Principal Road Safety Auditor Date: 25/11/2016

Organisation: Transport for London, Road Safety Audit
Asset Management Directorate

Address: 4th Floor Palestra, 197 Blackfriars Road, London, SE1 8NJ

Contact: kevinseymour@tfl.gov.uk (020 3054 1037)

5.2 DESIGN TEAM STATEMENT

In accordance with SQA-0170 dated May 2014, I certify that I have reviewed the items raised in this Stage 2 Safety Audit report. I have given due consideration to each issue raised and have stated my proposed course of action for each in this report. I seek the Client Organisations endorsement of my proposals.

Name: Colin Aarons

Position: Project Manager

Organisation: Jacobs

Signed: *Colin Aarons*

Dated: 10.02.17

5.3 CLIENT ORGANISATION STATEMENT

I accept these proposals by the Design Organisation.

Name: David Taylor

Position: Head of Traffic and Transportation

Organisation: LB Enfield

Signed: 

Dated: 13.03.2017

5.4 SECONDARY CLIENT ORGANISATION STATEMENT (where appropriate)

I accept these proposals by the Design Organisation.

Name:

Position:

Organisation:

Signed:

Dated:

APPENDIX A

Documents Forming the Audit Brief

DRAWING NUMBER	DRAWING TITLE
B240A024-DG-A105-0100-033 Rev A	Cycle Enfield A105 - General Arrangement Sheet 33 of 47
B240A024-DG-A105-0100-034 Rev A	Cycle Enfield A105 - General Arrangement Sheet 34 of 47
B240A024-DG-A105-0100-035 Rev -	Cycle Enfield A105 - General Arrangement Sheet 35 of 47
B240A024-DG-A105-0100-036 Rev -	Cycle Enfield A105 - General Arrangement Sheet 36 of 47
B240A024-DG-A105-0100-037 Rev A	Cycle Enfield A105 - General Arrangement Sheet 37 of 47
B240A024-DG-A105-0100-038 Rev -	Cycle Enfield A105 - General Arrangement Sheet 38 of 47
B240A024-DG-A105-0200-033 Rev -	Cycle Enfield A105 - Site Clearance Sheet 33 of 47
B240A024-DG-A105-0200-034 Rev -	Cycle Enfield A105 - Site Clearance Sheet 34 of 47
B240A024-DG-A105-0200-035 Rev -	Cycle Enfield A105 - Site Clearance Sheet 35 of 47
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DOCUMENTS

- Safety Audit Brief
- Site Location Plan
- Traffic signal details
- TfL signal safety checklist
- Departures from standard
- Previous Road Safety Audits
- Previous Designer Responses
- Collision data
- Collision plot
- Traffic flow / modelling data
- Pedestrian flow / modelling data
- Speed survey data
- Other documents

DETAILS (where appropriate)

2524/032/A105/BOR/2016

A105 Enfield - Proposed Road Marking Schedule
A105 Enfield - Sign Schedule - Section 13

APPENDIX B

Problem Locations

