

## A105 Ridge Avenue, Enfield

### Cycle Enfield A105

#### Stage 2 Road Safety Audit

Ref: 2759.01/032/A10/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: Fadzil Ismail, Audit Team Member

Approved by: Andrew Coventry

Version	Status	Date
A	Audit report issued to Client	06/10/2016



## **1.0 INTRODUCTION**

### **1.1 Commission**

- 1.1.1 This report results from a Stage 2 Road Safety Audit carried out on the A105 Ridge Avenue, Enfield, Cycle Enfield A105 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 9<sup>th</sup> September 2016. It took place at the Palestra offices of TfL on 30<sup>th</sup> September 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 30<sup>th</sup> September 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: Fadzil Ismail – 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 11 of this route only, from the junction with Green Dragon Lane to west of the junction with Berkeley Gardens.

- 1.5.2 Works were already underway at the junction with Devonshire Gardens. This did not stop the Audit from being undertaken although the Audit Team could not observe this area in normal operation as temporary traffic management was in place.

## **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 11) part of the proposals. Items raised in the previous Audit Report deemed relevant to this section can be summarised as follows:

**Problem 3.1.1** General to the scheme - Proposed zebra and cycle crossing layouts may result in drivers failing to give way to cyclists

This problem remains in the detailed design proposals and is therefore raised again within this report as Problem 3.2.1.

**Problem 3.1.4** General to the scheme - 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 remains in the detailed design proposals and is therefore raised again within this report as Problem 3.1.3.

**Problem 3.1.5** General to the scheme - Stationary vehicles close to side road junctions and accesses may restrict junction visibility splays and lead to failure to give way type collisions

This problem remains in the detailed design proposals and is therefore raised again within this report as Problem 3.1.2.

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

**Issue 4.1** Kerb line alterations may require swept path analysis [and alterations] to minimise potential for conflicts.

This issue may still present a problem within the detailed design and this is therefore raised as 4.1 in this Audit report.

**Issue 4.2** Bus stop borders separated from footways by cycle lanes may lead to conflicts between pedestrians and cyclists and / or trip hazards.

This issue may still present a problem within the detailed design and this is therefore raised as 3.4.1 in 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 track. 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>	

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### 3.1.2 PROBLEM

**Location:** A – A105 Ridge Avenue junctions with Bridge Parade and Bridge Gate

**Summary:** Parked vehicles close to side road junctions / accesses may restrict junction visibility splays and lead to left hook type collisions

The parking bays are located close to side road junctions / accesses, and vehicles parked at the western extent of these bays may obstruct visibility. The Audit Team are concerned that the reduced visibility may result in vehicles turning into these side roads not suitably sighting cyclists utilising the semi-segregated mandatory cycle track, which is positioned behind the parking bays. Therefore, an increased potential for collisions between motorists turning into these side roads and cyclists travelling westbound along the semi-segregated cycle lane may result.

#### RECOMMENDATION

It is recommended to ensure that appropriate visibility splays are provided. This may involve but is not limited adjusting the length of the parking bays or relocating them. It may be beneficial to investigate the feasibility of relocating the parking bays to the northern side of the carriageway instead.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>This was discussed with local cycling campaigners who considered that parking to offside provided less of a safety concern.</p> <p>Regards relocation on northbound carriageway, this would require crossing road to access shops possibly leading to pedestrian/vehicle conflict.</p> <p>The side road locations are at the end of a long length of on carriageway cycle lane. Motorists will have had adequate warning of the presence of cyclists running parallel. Cycle lane markings extend across the side roads and the off set of the running lane will allow further time for motorist/cyclist reaction.</p> <p>Vehicles egressing the side roads will also see the cycle markings across the junctions and are likely to be residential/regular users, familiar with the layout.</p>	
Client Organisation Comments	
<p>Designer's response accepted</p>	

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### 3.1.3 PROBLEM

**Location:** B – A105 Ridge Avenue junction with Devonshire Gardens

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

The proposed segregated cycle track at this location crosses the side road on a raised table. Drivers turning from the main road have a short stacking space between the main road and the cycle crossover due to the location of the cycle track. 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 give way arrangement, and stop across the cycle track, which may lead to nose to tail collisions or cycle to vehicle conflict.

### 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 vehicles to wait between the main road and cycle crossing without encroaching in to the main carriageway or blocking the cycle crossing. If this isn't feasible then it may be beneficial to provide a more conventional nearside on carriageway cycle lane layout.

<b>Design Organisation Response</b>	<b>Accepted / Part Accepted / Rejected</b>
At this location, there is no opportunity to provide stacking space without the cycle track inhibiting pedestrian movements. Cyclists and motorists will be slowed by the presence of approach ramps.	
<b>Client Organisation Comments</b>	
Designer's response accepted	

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## 3.2 CROSSING FACILITIES

### 3.2.1 PROBLEM

**Location:** C – A105 Green Lanes / Ridge Avenue near junction with Green Dragon Lane

**Summary:** Proposed zebra and cycle crossing layouts may result in drivers failing to give way to cyclists

The Audit Team are concerned that the proposed zebra and cycle crossing may not be understood by motorists particularly as the layout is new to drivers. The following issues may result in an increased potential for collisions:

- Zebra crossings are well established and the conspicuousness of the thick black and white striped road markings help to clearly indicate that a pedestrian has priority over vehicular traffic in this area. The lack of these markings within the proposed cycle section of the crossing may lead to ambiguity over who has priority and motorists may fail to give way to cyclists.
- Slow approach speeds by pedestrians enable an approaching motorist to notice they intend to cross, slow down and stop. Cyclists are likely to approach faster than pedestrians and may therefore fail to be noticed by approaching motorists.

These issues may lead to an increased potential for collisions between motorists and cyclists or shunt type collisions as motorists brake sharply as they unexpectedly encounter a cyclist attempting to assert priority.

### RECOMMENDATION

Provide measures which will allow cyclists to assert priority over motorists. This could include an alternative crossing type, or provide appropriate temporary signing to inform drivers of the intended usage until this layout becomes more commonplace.

Design Organisation Response	Accepted/ Part Accepted /Rejected
<p>This type of crossing appears in the new TSRGD, page 476 Sign table Item 53, Schedule 14, Part 2. This type of crossing will become more familiar in Enfield in the coming year or two as the A105 and other Cycle Enfield corridors progress to construction.</p> <p>The crossings will serve at locations where the A105 route intersects with existing Greenways so will provide improved crossing points for users of these routes.</p> <p>Temporary signing will be introduced at these locations to assist drivers in identifying and familiarising themselves with the layouts.</p>	
Client Organisation Comments	
Designer's response accepted	

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### 3.2.2 PROBLEM

**Location:** D – A105 Green Lanes / Ridge Avenue junction with Green Dragon Lane

**Summary:** Proposed narrowing of pedestrian refuge island may result in an increased potential for pedestrians to vehicle collisions if pedestrians overhang the island.

The Audit Team are concerned that the revised narrowed pedestrian refuge island within Green Dragon Lane is narrow at approx. 1.2m. Users such as those pushing a pushchair or wheelchair may overhang in to the carriageway and therefore be at an increased risk of collisions with passing vehicles.

#### RECOMMENDATION

It is recommended that alterations are incorporated to ensure that all users can be suitably contained within the pedestrian refuge island. This may involve altering the kerb line modifications so that suitable width can be provided within the pedestrian refuge island.

Design Organisation Response	Accepted / <del>Part Accepted</del> / Rejected
The island has been widened to 2m throughout with compensatory alterations to the kerb line on the west side of Green Dragon Lane.	
Client Organisation Comments	
Designer's response accepted	

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### 3.3 TRAFFIC ISLANDS

#### 3.3.1 PROBLEM

**Location:** General to scheme, multiple locations

**Summary:** The absence of guide posts may lead to an increased potential for collisions with the segregation islands

The Audit Team are concerned that various proposed physical islands are indicated at widths where they do not accommodate a vertical illuminated feature with appropriate lateral clearances. Furthermore, the road markings at these islands tie into the kerb-line rather than providing suitable guidance alongside them. If the islands are not conspicuous, an increased potential for kerb strikes, hard braking or evasive manoeuvres may result if users do not correctly determine the extent of the islands. This could lead to injuries to vehicle occupants, shunt type collisions or collisions with other road users. This is of particular concern during the hours of darkness, when the conspicuousness of the islands may be reduced.

#### RECOMMENDATION

It is recommended that the road markings, signs and / or islands are altered to ensure that suitable guidance is provided to ensure the islands are conspicuous. This may require the provision of a retro-reflective guide post, localised widening of the segregation island and modifications to the road markings.

Design Organisation Response	Accepted/ Part Accepted /Rejected
The road markings have been adjusted in the final issue drawing set.	
Reflective bollards of the same type as used at the commencement of the Orca lines will be used at the commencement of segregation islands.	
Client Organisation Comments	
Designer's response accepted – designs will be reviewed post-implementation and additional features added to increase the conspicuity of the segregation islands added if necessary.	

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### 3.4 BUS STOPS

#### 3.4.1 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 the proposed cycle tracks run immediately adjacent to the proposed bus stop boarders. Therefore bus passengers would board / alight a bus from / onto the cycle track. 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.

#### RECOMMENDATION

It is recommended that the layout of the bus stop boarders / cycle tracks is 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 3no bus boarders in Section 11 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, which together with the visual layout of the bus boarder area will indicate to slow their speed and take caution.</p>	
Client Organisation Comments	
<p>Designer's response accepted – operation of the bus stop boarders will be monitored post-implementation.</p>	

#### 3.4.2 PROBLEM

**Location:** E – Bus borders where vehicle crossovers cross the cycle track.

**Summary:** Cyclists on the raised section of track may be destabilised by ramps for vehicle crossovers.

The Audit Team are concerned that the dropped kerbs for vehicle crossovers at the bus borders appear to transition from carriageway to footway level over a short distance. As this ramp is within the cycle track it may result in cyclists encountering a sudden cross-fall which is unlikely to be expected and may result in cyclists being destabilised.

#### RECOMMENDATION

It is recommended that the layout of the bus stop boarders / cycle tracks is altered to ensure that cyclists do not encounter a cross-fall which could destabilise them. Typically, the maximum cross-fall permitted within a cycle lane is 1:20.

Design Organisation Response	Accepted / Part Accepted / Rejected

The layout of the cross over is being reviewed and will be amended.

**Client Organisation Comments**

Designer's response accepted

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

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#### 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 – Side roads with the A105 Ridge Avenue

**Reason considered to be outside the Terms of Reference:** Existing issue for consideration.

The Audit Team noted that various existing side road junctions do not have tactile paving.

In order to provide a more consistent message for visually impaired users along this route it may be beneficial to provide tactile paving across all side road crossings. It is appreciated that the proposed tactile paving is at locations where resurfacing is being undertaken and therefore this may fall outside of the scope of this scheme.

Design Organisation Response	Accepted / Part Accepted / Rejected
This issue is noted and will be discussed with the client to confirm whether the construction works offer the opportunity to address these areas at the same time as the project installation.	
Client Organisation Comments	
Tactile paving will be provided at side roads where kerb lines are being altered and/or side road entry treatments are being introduced.	

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#### 4.2 ISSUE

**Location:** 1 – Green Dragon Lane junction with Ridge Avenue (Sheet 25)

**Reason considered to be outside the Terms of Reference:** Issue for clarification / consideration.

Various kerb lines are to be amended and these appear as though they may result in difficulties for drivers of larger vehicles and / or over-running of the kerbs. No vehicle swept-path analysis has been provided to the Audit Team.

It is therefore recommended that swept path analysis is carried out and alterations made where necessary to ensure large vehicles are able to manoeuvre the proposed kerb layout without over-running the kerbs.

Design Organisation Response	Accepted / <del>Part Accepted</del> / Rejected
Swept paths have been checked.	
Client Organisation Comments	
Designer's response accepted	

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#### 4.3 ISSUE

**Location:** 2 – Green Dragon Lane junction with Ridge Avenue (Sheet 25)

**Reason considered to be outside the Terms of Reference:** Technical / compliance issue

The detailed design drawings indicate various road markings within the controlled area for the cycle / pedestrian zebra crossing. It is the Audit Teams understanding that the only permitted road markings within this area are the cycle symbols.

It may be beneficial to ensure that the road markings comply with the Traffic Signs Regulations and General Directions (TSRGD) 2016.

Design Organisation Response	Accepted / <del>Part Accepted</del> / Rejected
This has been addressed.	
Client Organisation Comments	
Designer's response accepted	

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#### 4.4 ISSUE

**Location:** 3 – Green Dragon Lane junction with Ridge Avenue (Sheet 25)

**Reason considered to be outside the Terms of Reference:** Capacity / suitability issue

The detailed design drawings indicate that the tactile paving / uncontrolled crossing width across Green Dragon Lane is narrow at approximately 1.6m wide. This may not provide suitable width to accommodate users such as those with wheelchairs or buggies to comfortably pass one another.

It may be beneficial to check anticipated pedestrian utilisation and ensure that this crossing suitably accommodates this.

Design Organisation Response	Accepted / Part Accepted / Rejected
Noted	
Client Organisation Comments	
Pedestrian utilisation of the crossing is likely to be relatively low but this will be reviewed post-implementation.	

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#### 4.5 ISSUE

**Location:** 4 – Green Dragon Lane junction with Ridge Avenue (Sheet 25)

**Reason considered to be outside the Terms of Reference:** Capacity / suitability issue

The detailed design drawings indicate that the road markings on Green Dragon Lane are proposed to be altered to formalise two lanes on approach to the junction with the A105 Green Lanes / Ridge Avenue. The lane widths appear to be narrow and whilst any collisions are likely to be very low speed and therefore damage only, encouraging two lanes of traffic through a narrow section may result in increased damage only collisions.

It may be beneficial to check the swept path analysis / available widths to ensure that two lanes can pass / turn from this area unimpeded.

Design Organisation Response	Accepted / Part Accepted / Rejected
This layout formalises the existing layout which currently shows turn left and turn right arrows on the approach to the junction. Vehicle tracking has been carried out and appear to show the manoeuvres can be made.	
Client Organisation Comments	
Designer's response accepted	

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#### 4.6 ISSUE

**Location:** 5 – Green Dragon Lane junction with Ridge Avenue (Sheet 25)

**Reason considered to be outside the Terms of Reference:** Issue for consideration.

The Audit Team noted during the site visit that motorists exiting Green Dragon Lane were particularly busy during morning peak, and many were witnessed to force their way out onto the A105. This often results in users on the A105 having to wait for users exiting to clear. It is not known if this occurs throughout the day.

Whilst it is appreciated that this is an existing issue which is not likely to be impacted by the proposals it may be beneficial to investigate the feasibility of a traffic signals measure to improve the junction.

Design Organisation Response	Accepted / Part Accepted / Rejected
Noted.	
Client Organisation Comments	
The need for signals and/or other changes to the design of the junction will be reviewed post-implementation	

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#### 4.7 ISSUE

**Location:** 6 – Green Dragon Lane junction with Ridge Avenue (Sheet 25)

**Reason considered to be outside the Terms of Reference:** Issue for clarification.

The Audit Team noted during the site visit that there is an existing bi-directional cycle track between Bush Hill and Green Dragon Lane. Whilst the resurfacing and reinstatement of this cycle track is proposed it is not clear if the road markings are to be reinstated. It is therefore not clear what this layout will consist of or how this will interact with the proposed bi-directional cycle track.

Furthermore, the Audit Team have considered that the proposed cycle track and uncontrolled pedestrian crossings across the track may not be used as intended due to the established pedestrian desire lines and the convoluted / impractical nature of the crossings if used as intended.

It may be beneficial to investigate the feasibility of making this area shared use. Additionally, whilst the crossing facility suggests that cyclists can use the southern footway area, no features clarify the extents. Therefore it is also recommended that the signing / extent of the shared use area is clarified.

Design Organisation Response	Accepted / Part Accepted / Rejected
The proposed cycle track provides a clear link from the Bush Hill route to the zebra crossing and the layout on the approach will ensure that cyclist slow down, approaching the zebra. Both the proposed track and the existing will be surfaced in the same material.	
Client Organisation Comments	
Designer's response accepted	

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## 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: 06/10/2016  
Organisation: Transport for London, Road Safety Audit  
Asset Management Directorate  
Address: 4<sup>th</sup> Floor Palestra, 197 Blackfriars Road, London, SE1 8NJ  
Contact: [shane.martin@tfl.gov.uk](mailto:shane.martin@tfl.gov.uk) (020 3054 2590)

#### AUDIT TEAM MEMBER:

Name: Fadzil Ismail Signed:   
BEng (Hons), MBA, MCIHT, MSoRSA  
Position: Principal Road Safety Auditor Date: 06/10/2016  
Organisation: Transport for London, Road Safety Audit  
Asset Management Directorate  
Address: 4<sup>th</sup> Floor Palestra, 197 Blackfriars Road, London, SE1 8NJ  
Contact: [fadzilismail@tfl.gov.uk](mailto:fadzilismail@tfl.gov.uk) (020 3054 5351)

## 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

<b>DRAWING NUMBER</b>	<b>DRAWING TITLE</b>
B240A024-DG-A105-0100-025 Rev	Cycle Enfield A105 General Arrangement Sheet 25 of 47
B240A024-DG-A105-0100-026 Rev	Cycle Enfield A105 General Arrangement Sheet 26 of 47
B240A024-DG-A105-0100-027 Rev	Cycle Enfield A105 General Arrangement Sheet 27 of 47
B240A024-DG-A105-0100-028 Rev	Cycle Enfield A105 General Arrangement Sheet 28 of 47
B240A024-DG-A105-0100-029 Rev	Cycle Enfield A105 General Arrangement Sheet 29 of 47
B240A024-DG-A105-0200-025 Rev	Cycle Enfield A105 Site Clearance Sheet 25 of 47
B240A024-DG-A105-0200-026 Rev	Cycle Enfield A105 Site Clearance Sheet 26 of 47
B240A024-DG-A105-0200-027 Rev	Cycle Enfield A105 Site Clearance Sheet 27 of 47
B240A024-DG-A105-0200-028 Rev	Cycle Enfield A105 Site Clearance Sheet 28 of 47
B240A024-DG-A105-0200-029 Rev	Cycle Enfield A105 Site Clearance Sheet 29 of 47
B240A024-DG-A105-0500-025 Rev	Cycle Enfield A105 Proposed drainage plan Sheet 25 of 47
B240A024-DG-A105-0500-026 Rev	Cycle Enfield A105 Proposed drainage plan Sheet 26 of 47
B240A024-DG-A105-0500-027 Rev	Cycle Enfield A105 Proposed drainage plan Sheet 27 of 47
B240A024-DG-A105-0500-028 Rev	Cycle Enfield A105 Proposed drainage plan Sheet 28 of 47
B240A024-DG-A105-0500-029 Rev	Cycle Enfield A105 Proposed drainage plan Sheet 29 of 47
B240A024-DG-A105-1100-025 Rev	Cycle Enfield A105 Kerbs footways and paved areas Sheet 25 of 47
B240A024-DG-A105-1100-026 Rev	Cycle Enfield A105 Kerbs footways and paved areas Sheet 26 of 47
B240A024-DG-A105-1100-027 Rev	Cycle Enfield A105 Kerbs footways and paved areas Sheet 27 of 47
B240A024-DG-A105-1100-028 Rev	Cycle Enfield A105 Kerbs footways and paved areas Sheet 28 of 47
B240A024-DG-A105-1100-029 Rev	Cycle Enfield A105 Kerbs footways and paved areas Sheet 29 of 47
B240A024-DG-A105-1200-025 Rev	Cycle Enfield A105 Traffic signs and road markings Sheet 25 of 47
B240A024-DG-A105-1200-026 Rev	Cycle Enfield A105 Traffic signs and road markings Sheet 26 of 47
B240A024-DG-A105-1200-027 Rev	Cycle Enfield A105 Traffic signs and road markings Sheet 27 of 47
B240A024-DG-A105-1200-028 Rev	Cycle Enfield A105 Traffic signs and road markings

## A105 Ridge Avenue, Enfield, Cycle Enfield A105

Stage 2 Road Safety Audit Report

B240A024-DG-A105-1200-029 Rev

Sheet 28 of 47

Cycle Enfield A105 Traffic signs and road markings  
Sheet 29 of 47

B240A024-DG-A105-1300-025 Rev

Cycle Enfield A105 Lighting Sheet 25 of 47

B240A024-DG-A105-1300-026 Rev

Cycle Enfield A105 Lighting Sheet 26 of 47

B240A024-DG-A105-1300-027 Rev

Cycle Enfield A105 Lighting Sheet 27 of 47

B240A024-DG-A105-1300-028 Rev

Cycle Enfield A105 Lighting Sheet 28 of 47

B240A024-DG-A105-1300-029 Rev

Cycle Enfield A105 Lighting Sheet 29 of 47

### 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 -  
Section 11 - REV \_  
A105 Enfield - Sign Schedule - Section 11

## **APPENDIX B**

### **Problem Locations**









