

Newham BID

Lighterage Hill,
Truro

Project Reference: 2408-037/TN/02

Technical Note

1 Introduction

Background

- 1.1 Transport Planning Associates (TPA) have been instructed by Newham BID to review Cornwall Council's proposals for changes to pedestrian and cycle infrastructure on Lighterage Hill and Newham Road. The works are understood to be related to the proposed new bridge at Lighterage Quay.
- 1.2 TPA has been providing highways advice to developers, local authorities and private individuals for more than 25 years, including the provision of road safety audits and the design of cycle and pedestrian infrastructure.
- 1.3 This report follows an earlier analysis provided by TPA in report 2080-037/TN01, dated September 2024.
- 1.4 Consultation documents advise that:
- "Lighterage Hill provides connectivity to the Truro River Loop transitioning between the existing Newham Trail, part of the National Cycle Network 3, and the proposed lifting bridge at Lighterage Quay. The project will look at enhancements to the footpaths, wayfinding and improvements to visibility around the intersection between the trail and the road to promote safer links to the riverside."*
- 1.5 The bridge will create new demand for cycle and pedestrian trips to and from Newham Trail, along Newham Road and through the Lighterage Hill junction, thus it is of key importance to ensure that these routes provide suitable levels of safety for those new trips by vulnerable road users.

- 1.6 Lighterage Hill and Newham Road provide access to Newham Industrial estate and are thus subject to frequent heavy goods vehicle movements. There are inherent risks with mixing cycle, pedestrian and heavy goods vehicle traffic at narrow / sub-standard junctions and Newham BID is thus understandably concerned that the proposals by Cornwall Council are carefully scrutinised and that their design is suitable and safe.

Proposed pedestrian and cycle safety improvements

- 1.7 As a result of the proposed new bridge additional pedestrian and cycle traffic will be encouraged to utilise local roads. Concern was previously raised with respect to the lack of suitable and safe pedestrian and cyclist facilities on the routes to and from the bridge on the west side of the river and in response Cornwall Council has provided details of proposed works to Lighterage Hill and Newham Road at the junction between those roads. This report provides a review of the proposed works and their suitability to protect the new pedestrian and cycle traffic that will be attracted to utilise the bridge. A plan illustrating the proposed improvements is provided at **Appendix A**.

2 Scheme review

General

- 2.1 The proposed pedestrian and cycle improvements consist of changes to the surfacing materials of the carriageway across and adjacent to the junction, a widened shared footpath / cycle path along the north side of Lighterage Hill and an uncontrolled pedestrian crossing point that cuts diagonally across the junction, from the northwest corner of the junction to the entrance to the new bridge.
- 2.2 No improvements have been proposed on Newham Road to the north of the junction, which is the most direct route between the bridge and town centre / commercial areas to the north.

Safety Audit

- 2.3 A road safety audit has been undertaken by Cormac (a Cornwall Council company) on the proposed design (created by Cormac, for Cornwall Council) and a designer's response has been provided by Cormac, with the response items agreed by the Overseeing Organisation (Cornwall Council). A copy of the audit is provided at **Appendix B**.
- 2.4 The key concerns raised by the safety audit are:
- The angle and length of the proposed crossing
 - Concern with the narrowing of the carriageway on Lighterage Hill
 - Risk to cyclists waiting to turn from Lighterage Hill to Newham Road
 - That cyclists and pedestrians are likely to use Newham Road rather than Newham Trail
- 2.5 The following sections of discuss these key issues and the responses provided in the safety audit.

Crossing distance & angle

- 2.6 The safety audit raises concern that:

"the angle of the proposed crossing movement would effectively double the distance involved in crossing Newham Road, from approximately 6m to 12m. A pedestrian would therefore be in the road for a significantly longer period of time, with the angle of view towards traffic approaching from their left increasing, as they walk toward Lighterage Quay."

2.7 The response from the designer was that it is not possible to come up with a better solution and the subsequent response from Cornwall as overseeing organisation was to simply accept this. The risk has therefore simply been accepted, rather than mitigated. This is a questionable approach, and the risk should be weighed against the benefits of the planning application proposals, in the context of the National Planning Policy Framework, which advises that an *'unacceptable impact upon safety'* is one of criteria for refusal of a planning application.

Narrowing of Lighterage Hill carriageway

2.8 The proposals narrow the width of the carriageway on Lighterage Hill on approach to the junction with Newham Road, where widths are already low. Heavy goods vehicles are currently able to pass each other at the junction, albeit with limited room to spare, as shown in the swept path analysis plan extract at figure 1.

Figure 1 – Swept path of HGVs passing at Lighterage Hill junction – existing layout



2.9 The swept path analysis has been repeated on the proposed layout plan and shows that, due to the narrowing of the carriageway, two HGVs would no longer be able to pass each other, potentially resulting

in collision or mounting of the footway in order to avoid a collision. The potential point of conflict is illustrated in figure 2.

Figure 2 - Swept path of HGVs passing at Lighterage Hill junction – proposed layout



Risk to cyclists waiting to turn out of Lighterage Hill

2.10 The safety audit raises concern that:

“it is likely that many cyclists coming out of the Newham Trail (south) would simply cycle down the hill to the junction, rather than join the short length of shared-use path.

...

There is a high proportion of HGVs turning right into Lighterage Hill and these cyclists may be vulnerable to collision with a turning HGV trailing over the centreline, especially if the (downhill) cyclist approached the junction at some speed.”

- 2.11 The suggested solution is to provide a safe area in the centre of the junction with white lining or a traffic island. The designer's response states that a white lined area will be provided, however adds that HGVs turning into Lighterage Hill require the majority of the junction to do so and thus this area will not be safe from turning HGVs.
- 2.12 Cornwall Council as overseeing organisation simply accept this risk. Again, this is a questionable approach, and the risk should be weighed against the benefits of the planning application proposals, in the context of the National Planning Policy Framework, which advises that an '*unacceptable impact upon safety*' is one of criteria for refusal of a planning application.

Viability and attractiveness of suggested route

Gradients on Lighterage Hill

- 2.13 The route along Lighterage Hill from Newham Road to Newham Trail has a very steep gradient, up to 1:8. Local Transport Note (LTN) 1/20, the current national guidance with respect to cycle facilities advises with respect to gradients for cyclists in table 5-8, with maximum lengths included for sections with steep gradients. Notably the table only goes up to 5%, which is 1:20 and suggests that cycle routes should only have sections with gradients that steep for 30m. Lighterage hill is more than twice as steep as the maximum referenced in LTN 1/20 and cyclists would have to tackle that gradient for a distance of approximately 40m
- 2.14 Paragraph 5.11.1 advises that:
- "Gradients present a potential hazard where cyclists could lose control. Designers should carefully consider the combination of horizontal and vertical geometry where gradients are greater than 3%. Unguarded hazards (e.g. fixed objects, steep drops or water hazards) should not be permitted within 4.5m of the route where they would lie in the path of an out-of-control cycle. An example location where a hazard should be guarded is adjacent to the vertical drop to the water at the bottom of an access ramp that approaches a river bank or canal towpath."*
- 2.15 The proposals will increase the volume of cyclists heading down Lighterage Hill toward the river, where there is no safe overrun area and a cyclists with failed brakes has the potential to lose control and shoot across Newham Road, over the very short verge and into the river.
- 2.16 The planning application proposals encourage additional cycle traffic to utilise Lighterage Hill, which is significantly steeper than the 3% referenced above.

- 2.17 Once again, these risks should be weighed against the benefits of the planning application proposals, in the context of the National Planning Policy Framework, which advises that an '*unacceptable impact upon safety*' is one of criteria for refusal of a planning application.

Lack of improvements to Newham Road north of proposed bridge

- 2.18 No protection is proposed for cyclists and pedestrian traffic that will be generated by the bridge proposals and will utilise Newham Road to the north of the bridge, where there is no footway and there are no cycle facilities, requiring cyclists and pedestrians to share the carriageway with vehicular traffic including HGVs accessing the industrial estate.

3 Additional factors for consideration

Residential development at Higher Newham Farm

- 3.1 The housebuilder Vistry Partnerships is currently building out a large development to the west of Newham Industrial Estate, for 245 dwellings. Construction traffic utilises Newham Road and Lighterage Hill for access to the site and that generates around 55 vehicle movements per day, including 15 HGVs.
- 3.2 The final development is proposed to take vehicular access via Morlaix Avenue however pedestrians and cyclists from the new houses are likely to utilise Lighterage Hill and the new bridge, if constructed, as that will form the most attractive walking and cycling route between the site and Truro School as well as to Boscawen Park. This will lead to increased numbers of vulnerable road users seeking to access the bridge, who will be put at risk unless suitable enhancements to infrastructure are provided.

Newham Industrial Estate traffic

- 3.3 The estate includes a large number of businesses many of which, by their nature, generate a significant volume of heavy goods vehicles and other wide vehicles. These include:
- Royal mail
 - First Buses (80-100 buses per day)
 - Jewson
 - Conway Bailey Transport (8-10 HGV's per day)
 - Howdens
 - Macsalvors (plant hire – 80-100 HGV movements per day)
 - Biffa (60 refuse vehicle movements per day)
 - Screwfix
 - South West Water
 - Recycling centre
- 3.4 Various occupiers have provided TPA with data on typical vehicle usage (included in brackets above) and these highlight the mix of traffic that needs to be considered in the vicinity.

4 Summary & conclusion

- 4.1 The steep gradients on Lighterage Hill and elsewhere on the suggested route between the proposed bridge and the point where the trail meets Gas Hill and Newham Road to the north will make cyclists and pedestrians highly unlikely to follow the trail in order to travel between the proposed bridge and Newham Road to the north. The route via Newham Road to / from the Bridge (continuing along Newham Road) is broadly flat / level and is also shorter, at approximately 240m versus 320m.
- 4.2 The gradients and additional distance involved means that the most vulnerable cyclists, such as children, the elderly and those with mobility difficulties are extremely unlikely to cycle or walk along the trail and will instead continue along Newham Road where, in the absence of a footway or cycle path, they will have to share the narrow road with frequent heavy goods vehicle traffic and generally vehicular traffic.
- 4.3 The proposed cycle and pedestrian infrastructure improvements do nothing to protect the safety of the additional cycle and pedestrian traffic on Newham Road to the north of the proposed bridge, that will result from the installation of the proposed bridge.
- 4.4 The safety audit provided by Cornwall Council highlights multiple safety concerns which have not been mitigated but rather have simply been accepted.
- 4.5 The various risks to vulnerable road users add up to a scheme that is fundamentally flawed, will generate additional cycle and pedestrian traffic and will place those cyclists and pedestrians in danger.
- 4.6 In the absence of improvements to pedestrian and cycle facilities on Newham Road north of the bridge it is considered that the planning application should be refused, in accordance with Policy 27 of the Cornwall Local Plan and paragraph 116 of the National Planning Policy Framework.

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Document Review

	Status	Author	Checker	Approver	Date
01	Draft	NH		NH	March 25
-	Issue	NH		NH	March 25

APPENDIX A

Cobblestone	Cobblestone	Tegula
Silver Grey	Charlwood Grey	Buff
Ramps	Carriageway	Uncontrolled Crossing
IMP: 01	IMP: 02	IMP: 03

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- NOTES:**
- All dimensions are in metres unless otherwise stated.
 - Do not scale from this drawing for construction purposes.

KEY:

	Shared use unsegregated pedestrian and cyclist path
	IMP 01: Imprint Carriageway - Large cobble pattern - Silver Grey in Colour
	IMP 02: Imprint ramps - Large cobble pattern - Charlwood Grey in colour
	IMP 03: Imprint Pedestrian Crossing - Tegula Pattern - Buff in Colour
	Verge and landscaping
	Uncontrolled Tactiles
	Dense Vegetation Clearance
	Proposed Road Marking
	Proposed Sign



REV	DATE	NATURE OF REVISION
P01	12/02/2025	First Issue

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CORNWALL COUNCIL
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TRURO
A CITY CONNECTED

CORMAC

PROJECT TITLE:
TRURO TOWN DEAL

DRAWING TITLE:
LIGHTERAGE HILL
GENERAL ARRANGEMENT
MEASURES & CONSIDERATIONS

SCALE:
1:200 @ A1

PROJECT MANAGER: J.H.J.	DRAWN BY: T.W.			
CHECKED: GR	12.02.2025	APPROVED: J.H.J.	12.02.2025	
DRAWING NO:	PROJECT	ORIGINATOR	VOLUME	LOCATION
Infra24-187	CSL	GEN	SW830435	
TYPE	ROLE	NUMBER		
DE	D	0003		
PROJECT REF.:	DRAWING STATUS:	SUITABILITY:	REVISION:	
Infra24-187	Feasibility	S3	P01	

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APPENDIX B



Lighterage Hill Junction, Newham (Green Transport River Loop)

Road Safety Audit – Stage 1

Document Ref: Infra24_188_CSL_RSA_XXMZ_RP_CH_0001

Cormac | Infrastructure Group
Radnor Road, Scorrier, Redruth, Cornwall, TR16 5EH

Issue & Revision Record						
Revision	Date	Originator	Checked	Authorised	Purpose of Issue	Nature of Change
P01	29/10/24	[REDACTED]			RSA Stage 1	Original
P02	22/11/2024	[REDACTED]			RSA Stage 1	Revised Brief
P03	24/01/2025	[REDACTED]			RSA Stage 1	Revised responses



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TRURO TOWN DEAL – Lighterage Hill

ROAD SAFETY AUDIT STAGE 1

Project Details (F1)

Report Title:	Road Safety Audit Response Report to RSA Stage 1
Date:	17/10/2024
Document reference and revision	T/RSA722/R8
Prepared by:	[REDACTED]
On behalf of:	Cormac Solutions Ltd

Table F.2 Authorisation sheet	
Project:	Truro Town Deal – Green Transport
Report title:	Road Safety Audit Response Report to RSA Stage 1
Prepared by	
Name:	[REDACTED]
Position:	Lead Engineer
Signed:	[REDACTED]
Organisation:	Cormac Solutions Ltd
Date:	28/10/2024
Approved by	
Name:	[REDACTED]
Position:	Design Lead
Signed:	[REDACTED]
Organisation:	Cormac Solutions Ltd
Date:	22/11/2024 (Revised)

1 Introduction (F2)

1.1.1 This report is written in response to the findings from a Road Safety Audit (RSA) Stage 1 carried out on 2nd October 2024 covering the proposals to provide improved NMU facilities on Lighterage Hill.

1.1.2 The Audit was undertaken by Cormac Solutions Ltd [REDACTED] and [REDACTED] who reported good dry and clear conditions on the date of the RSA 1 assessment.

2.1 Site Description

2.1.1 A Road Safety Audit Stage 1 was carried out on two options for changes around the Lighterage Hill junction, Newham, Truro.

2.1.2 The locations effected as part of this individual intervention are as follows:

- Newham Road
- Lighterage Hill
- Newham Trail

2.2 Purpose of scheme

2.2.1 The proposals are part of a wider project to provide pedestrian and cycle access over the Truro River by means of a new lifting bridge between Lighterage Quay and Boscawen Park.

2.2.2 The proposed works include:

- Widen the existing footway on the North of Lighterage Hill to 2.1m minimum.
- Minor adjustments of kerbs and geometry of the existing Lighterage Hill carriageway. With no carriageway narrowing.
- Tactile paving and dropped kerbs to be added around the proposed diagonal crossing.

3 Key Personnel (F3)

3.1.1 The Overseeing Organisation details are as follows:

Name:	██████████
Role:	Head of Connectivity & Transport
Organisation:	Cornwall Council

The Road Safety Audit Team membership, (the Overseeing Organisation Project Sponsor), was as follows:

Name:	██████████
Qualifications:	BSc (Hons)
Role:	Audit Team Leader, Design Lead
Organisation:	Cormac Solutions Ltd

Name:	██████████
Qualifications:	BSc (Hons) AMIHE
Role:	Audit Team Member, Engineer (Project Manager)
Organisation:	Cormac Solutions Ltd

The Design Organisation details are as follows:

Name:	██████████
Qualifications:	EngTech MICE
Role:	Lead Engineer
Organisation:	Cormac Solutions Ltd

4 Road Safety Audit Decision Log

(F4) Designers Response

WALKING, CYCLING AND HORSE RIDING

Paragraph 5.1 – Option 01 - Problem 01	
Drawings Numbers(s):	Infra24-187-CSL-GEN-SW830435-DE-D-0001
Location:	Lighterage Hill Junction and Malpas Road
Summary:	Limited visibility and angle of crossing may contribute to collisions between pedestrians or cyclists and vehicles.
Description:	
<p>The proposed shared-use facility on the northwestern side of Lighterage Hill would lead to a dropped-kerb crossing point at the northwestern corner of the Newham Road junction. Pedestrians and cyclists would then need to cross approximately in a south-easterly direction towards Lighterage Quay and the lifting bridge.</p> <p>There is limited visibility to the northwest at the proposed crossing point, due partly to the curvature of the road and partly to ground levels and vegetation on nearby private land (photos 1 & 2).</p> <p>In addition, a pedestrian or cyclist would have to assess a wider angle of view than at a 'straight' crossing, needing to cover both the Newham Road (NW) and Lighterage Hill approaches, before deciding to cross. This requires viewing an angle of approximately 250-degrees, rather than the slightly less than 180-degrees at a standard perpendicular crossing. While this isn't exceptional (especially at junctions) it does add to the awkwardness of crossing, especially when cycling.</p> <p>Finally, the angle of the proposed crossing movement would effectively double the distance involved in crossing Newham Road, from approximately 6m to 12m. A pedestrian would therefore be in the road for a significantly longer period of time, with the angle of view towards traffic approaching from their left increasing, as they walk toward Lighterage Quay.</p> <p>The combination of these factors mean that a pedestrian or cyclist may struggle to see a vehicle approaching along Newham Road from the northwest, start to cross and still be crossing in the carriageway, with their back partially to traffic, when the vehicle reaches them. This would especially be the case with older and/or disabled pedestrians. While Newham Road is relatively low speed, their safety would then be dependent upon the approaching driver seeing and reacting to their presence. Failure to do so could result in a collision between a vehicle and vulnerable road user, most likely a pedestrian as cyclists cross more quickly.</p> <p>While the auditors do not wish to overstate this danger – Newham Road will remain a relatively low speed and low flow road, and this crossing movement occasionally occurs at present – the opening up of a new route across the river would inevitably see pedestrians and cyclists regularly crossing at this point.</p>	
RSA Recommendation:	
<ol style="list-style-type: none"> Improve visibility as much as possible to the northwest, for example by removing vegetation and/or grading back verge (by agreement). Provide a more direct crossing point, with a landing area and footway directly opposite the crossing point. 	

Design Organisation Response:
<p>a: Accepted. Cut-back of vegetation in this area to be included on scheme drawings.</p> <p>b: Partially accepted. It is not possible to provide a landing area opposite the crossing point within highway. Narrowing of the existing carriageway is not possible due to HGV usage, third party land cannot be obtained and widening out into the riverbank would impact on the SSSI for Truro River. The landing point in its current proposed position means that NMUs waiting to cross are safely outside the swept-path of HGVs. The diagonal angle of the crossing in some respects aids NMUs visibility of vehicles approaching from the west on Lighterage Hill, when compared to a more perpendicular crossing.</p> <p>However, it is acknowledged that due to crossing angle and distance, there is a risk that pedestrians will not be aware of a vehicle approaching and that a vehicle may need to slow to avoid a collision with the pedestrian. The only way to eliminate this conflict is to signalise the junction, which currently isn't feasible. Measures such as warning signage, road markings and surface texture/colour changes will be considered at the next design stage to highlight the presence of the crossing to drivers and effect a change on the highway environment in order to alter driver behaviour and reduce vehicle speeds, particularly on the Newham Road southbound approach, to reduce the risk as far as is practicable.</p>
Auditors' comment:
No further comment
Overseeing Organisation Response:
Acknowledged and accepted.
Agreed RSA Action:
<ul style="list-style-type: none"> a. Cut back vegetation to improve visibility. b. Incorporate warning signage, road markings and surface texture/colour changes into the design.

Paragraph 5.1 – Option 01 - Problem 02	
Drawings Numbers(s):	Infra24-187-CSL-GEN-SW830435-DE-D-0001
Location:	Lighterage Hill Junction and Malpas Road
Summary:	Cyclists arriving at junction vulnerable to collision with right-turning vehicles
Description:	
<p>While Option 1 provides an off-road route to the junction, it is likely that many cyclists coming out of the Newham Trail (south) would simply cycle down the hill to the junction, rather than join the short length of shared-use path. Essentially, for these cyclists, it would operate much as Option 2. While this choice has some advantages – the view is better at the junction and the path across to Lighterage Quay quicker and more direct – inevitably there would be an increase in cyclists approaching or at the centre of the Lighterage Hill junction. There is a high proportion of HGVs turning right into Lighterage Hill and these cyclists may be vulnerable to collision with a turning HGV trailing over the centreline, especially if the (downhill) cyclist approached the junction at some speed. Note, the increase in the number of cyclists using the centre of the junction would be an inevitable consequence of the new route with either option (see also par.5.2.i below).</p>	
RSA Recommendation:	
Separate cyclists on the road from right-turning vehicles at the centre of the junction, e.g. by providing a splitter island, road markings or similar.	
Design Organisation Response:	
Accepted – central hatched markings will be proposed – at the junction in the next design stage, to aid separation between cyclists travelling down Lighterage Hill and traffic turning right from Newham Road up Lighterage Hill. Although it should be noted that potential conflict between cyclists and HGVs cannot be eliminated due to the large swept path required for HGVs making the right-turn manoeuvre into Lighterage Hill. Physical separation, such as a splitter island, isn't possible due to the available space within the highway cross-section.	
Auditors' comment:	
No further comment.	
Overseeing Organisation Response:	
Acknowledged and accepted.	
Agreed RSA Action:	
Incorporate hatched road markings.	

Paragraph 5.1 – Option 01 - Problem 03	
Drawings Numbers(s):	Infra24-187-CSL-GEN-SW830435-DE-D-0001
Location:	Lighterage Hill Junction and Malpas Road
Summary:	Overrun of footway on junction radius
Description:	
<p>The existing footway on the northwestern side of the junction is approximately 1.5m in width. The proposal would widen this to 2.5m, narrowing the exit lane from Lighterage Hill by about a metre. Although this has been tracked (and HGVs already overrun the opposing lane of Newham Road when emerging, as at many junctions), inevitably this tightens the left-turn exit manoeuvre further. The current footway shows signs of being occasionally overrun with trailing wheels (photo 3), and it is likely that further tightening of the effective radius would only exacerbate this. The necessity for dropped kerbs across the preceding access only makes this radius harder for a driver to judge and feel. A pedestrian or cyclist standing at the crossing point would be vulnerable to the driver of a large vehicle misjudging or tightening their line on exit and trailing over the crossing point, especially as the inside of the curve may be out of sight of vehicle mirrors at the time.</p>	
RSA Recommendation:	
Relocate the crossing point and/or physically protect it in some way, for example with enhanced kerbing and/or vertical obstructions, or with a revised geometry.	
Design Organisation Response:	
<p>Accepted - it's acknowledged that there is evidence of occasional overrun on the existing north-west corner and the building-out of the corner will increase the likelihood of overrun occurring. However, it is expected that this occurrence will remain as occasional. It is also considered that HGV drivers will ensure that they do not overrun the kerb if a pedestrian is standing on the corner. It is also likely that pedestrians will step back from the edge of the footway if they see a HGV approaching, further reducing the likelihood of a pedestrian being struck whilst waiting to cross. It should be noted that there is sufficient width at the junction and along Newham Road for an HGV to safely undertake this manoeuvre without overrunning the kerb.</p> <p>A dropped kerb is required on the approach to the crossing to maintain access to Motor Parts Direct. The existing dropped kerb is long and it should be possible to reduce its length in order to provide a 1.5m section of full height kerb prior to the crossing. Which should assist in reducing the likely hood of overrun occurring at the crossing location. This measure will not prevent overrun of the kerb and therefore will provide a low level of protection. It will also require consultation with the Motor Parts Direct to ensure it doesn't disrupt business operations. Vertical obstructions such as bollards are not feasible as they will reduce the effective width of the path resulting in it not being suitable for cyclists.</p>	
Auditors' comment:	
No further comment.	
Overseeing Organisation Response:	
Acknowledged and Accepted.	
Agreed RSA Action:	

Incorporate additional kerb upstand where feasible.

Paragraph 5.1 – Option 01 - Problem 04	
Drawings Numbers(s):	Infra24-187-CSL-GEN-SW830435-DE-D-0001
Location:	Lighterage Hill, Newham Trail Crossing
Summary:	Visibility at Newham Trail (south) access
Description:	
<p>Option 1 proposes to remove a small section of walling at the Newham Trail (south) access and to clear vegetation to improve visibility to the right for an emerging pedestrian or cyclist. While this can only improve the current situation, it does not fully resolve the issues with this access, which are more fully explained in Report 722/SR2. The possibility that a pedestrian – in particular a runner – may still not see an approaching vehicle (photo 4) and emerge into its path will remain.</p>	
RSA Recommendation:	
<p>Review report 722/SR2 and ensure that any proposed works address the fundamental visibility issues, as far as is reasonably practicable.</p>	
Design Organisation Response:	
<p>Accepted.</p>	
Auditors' comment:	
<p>No comment</p>	
Overseeing Organisation Response:	
<p>Acknowledged and accepted.</p>	
Agreed RSA Action:	
<p>Incorporate measures to improve visibility where feasible.</p>	

Paragraph 5.2 – Option 02 - Problem 01	
Drawings Numbers(s):	Infra22-220-CSL-HGN-LH13-DE-CH-0106
Location:	Lighterage Hill, Footway Eastern side
Summary:	Cyclists arriving at junction vulnerable to collision with right-turning vehicles.
Description:	
<p>Cyclists from the Lighterage Hill direction intending to travel towards Boscawen Park would cycle down the hill to the junction and position towards the centre. There is a high proportion of HGVs turning right into Lighterage Hill and these cyclists may be vulnerable to collision with a turning HGV trailing over the centreline, especially if the (downhill) cyclist approached the junction at some speed. Note, the increase in the number of cyclists using the centre of the junction would be an inevitable consequence of the new route with either option (see par.5.1.ii above), although Option 2 would likely have the greater numbers.</p>	
RSA Recommendation:	
Separate cyclists from right-turning vehicles at the centre of the junction, e.g. by providing a splitter island, road markings or similar.	
Design Organisation Response:	
Accepted – central hatched markings will be proposed at the junction in the next design stage, to aid separation between cyclists travelling down Lighterage Hill and traffic turning right from Newham Road up Lighterage Hill. Although it should be noted that potential conflict between cyclists and HGVs cannot be eliminated due to the large swept path required for HGVs making the right-turn manoeuvre into Lighterage Hill. Physical separation, such as a splitter island, isn't possible due to the available space within the highway cross-section.	
Auditors' comment:	
No further comment.	
Overseeing Organisation Response:	
Acknowledged and accepted.	
Agreed RSA Action:	
Incorporate hatched road markings.	

Paragraph 5.1 – Option 02 - Problem 02	
Drawings Numbers(s):	Infra22-220-CSL-HGN-LH13-DE-CH-0106
Location:	Lighterage Hill, Footway Eastern side
Summary:	Narrow access to Lighterage Quay may lead to collisions between cyclists.
Description:	
<p>The two-way access to Lighterage Quay is shown as only 1.5m wide, although it needs to accommodate two-way cycle traffic. A cyclist sweeping in from Newham Road may collide with a cyclist exiting Lighterage Quay, resulting in injury. Similarly, a cyclist could collide with a pedestrian stepping out from the adjacent crossing point, unaware that a cyclist may be entering from Newham Road.</p>	
RSA Recommendation:	
<ul style="list-style-type: none"> a. Widen the cycle access to allow two-way cycle flow. b. Separate the cycle access and pedestrian crossing point as much as feasible. c. Ensure clear visibility across the verge to the northwest of the access point. 	
Design Organisation Response:	
<ul style="list-style-type: none"> a. Accepted – arrangement to be reviewed in next design stage if option is progressed b. Accepted – arrangement to be reviewed in next design stage if option is progressed c. Accepted – drawings to be updated to include vegetation clearance of the verge. 	
Auditors' comment:	
No further comment.	
Overseeing Organisation Response:	
Acknowledged and accepted.	
Agreed RSA Action:	
Review and incorporate measures a-c where feasible.	

Paragraph 5.1 – Option 02 - Problem 03	
Drawings Numbers(s):	Infra22-220-CSL-HGN-LH13-DE-CH-0106
Location:	Lighterage Hill, Footway Eastern side
Summary:	Parking in hatched area may block visibility for pedestrians and drivers.
Description:	
<p>The proposed hatched area to the southeast of the Lighterage Hill junction would legally be covered by the existing 'no waiting at any time' restriction. Moving the double-yellow line to the front of hatching, however, is frequently misunderstood by drivers to create a legitimate parking area behind the line. It is likely that some drivers would park in the hatched area in consequence, where they may block visibility for pedestrians at the crossing point and for drivers and cyclists emerging from the Lighterage Hill junction (photos 5 & 6). This may contribute to a failure to give way collision with traffic approaching from the southern end of Newham Road.</p>	
RSA Recommendation:	
Build-out the hatched area to the southeast of the crossing point.	
Design Organisation Response:	
Partially accepted –it is not possible to build out this section of carriageway due to deliveries for Fresh Foods Cornwall. The design will be updated to move double yellow lines to rear of hatched area.	
Auditors' comment:	
No comment	
Overseeing Organisation Response:	
Acknowledged and accepted.	
Agreed RSA Action:	
Relocate double yellow lines.	

Paragraph 5.1 – Option 02 - Problem 04	
Drawings Numbers(s):	Infra22-220-CSL-HGN-LH13-DE-CH-0106
Location:	Lighterage Hill, Footway Eastern side
Summary:	Visibility at Newham Trail (south) access
Description:	
Although the extended footway and removal of a small section of the adjacent retaining structure will significantly improve visibility out of the Newham Trail (south) access, the detail available at this stage is insufficient to tell whether this will wholly resolve the issues discussed in Report 722/SR2, and the associated accident history.	
RSA Recommendation:	
Review report 722/SR2 and ensure that the proposed works address the fundamental visibility issues, as far as is reasonably practicable.	
Design Organisation Response:	
Accepted.	
Auditors' comment:	
No comment	
Overseeing Organisation Response:	
Acknowledged and accepted.	
Agreed RSA Action:	
Incorporate measures to improve visibility where feasible.	

Paragraph 5.3 – Wider Scheme - Problem 01	
Drawings Numbers(s):	n/a
Location:	Newham Rd- Gas Hill to Lighterage Hill
Summary:	Increased use of Newham Road by pedestrians increasing risk of collision
Description:	
<p>Pedestrians and cyclists arriving at Lighterage Hill from the Newham Trail (south), from the Lighterage Hill/Heron Way industrial area, and potentially, from the large Newham residential development currently being built, will naturally use the Lighterage Hill junction (and therefore the Option 1 or 2 arrangement, if implemented), to travel between Newham and Boscawen Park via the new lifting bridge (and similarly, in the reverse direction).</p> <p>It is not known how many pedestrians and cyclists are likely to travel between the wider Newham and Truro area to the northwest and Boscawen Park if the bridge is provided. It may reasonably be assumed, however, that opening the new route will attract new pedestrians and cyclists in both directions.</p> <p>Although improved provision has been made to link Newham/Truro to the Lighterage Quay area via the Newham Trail, including signing and a pedestrian crossing, this route is approximately 360m in length compared with approximately 275m for the more direct way along Newham Road. In addition, the Trail route requires climbing either Lighterage Hill or Gas Hill to access, whereas the Newham Road section is flat. It is likely that a proportion of pedestrians and particularly cyclists will remain on Newham Road, rather than divert via the assigned route. Elderly and disabled pedestrians may be more inclined to avoid the relatively steep hill sections involved in the Trail route, although equally, they may be more sensitive to the disadvantages of the Newham Road section (see below).</p> <p>Cyclists are at little risk on this section of Newham Road; it is short, flat and easy to cycle at moderate speed. Its width, alignment and the close relative speeds would make it unlikely that a following driver (especially of an HGV) would try to overtake. Any cyclist would generally lead traffic through the short section.</p> <p>Any pedestrians using this length of Newham Road, however, would generally be passed by traffic. Wear in the sections of verge (photos 7 & 8) suggests that pedestrians use this route regularly, and the number would likely increase with the new route across the river. While there are some sections of wider verge and 'step-off' along Newham Road, at other points pedestrians have to walk in the carriageway with traffic. The alignment and width make sections of the road difficult to walk on when large vehicles are present (e.g. photos 8-10), and the risk of a collision would tend to rise broadly in proportion to any increase in pedestrian use. It should be noted though, that there have been no recorded collisions involving pedestrians (or cyclists) on this section of Newham Road in the last 25 years – despite their undoubted presence – and that the speed limit has recently been reduced to 20mph. This suggests a relatively low 'base risk', even if it might rise with extra pedestrian use.</p> <p>It would be very difficult physically to prevent pedestrian use of Newham Road, given the directness of the route and the necessity to accommodate HGV access.</p> <p>Similarly, simple encouragement and direction to use the Newham Trail would have limited effect on some users, although it is likely that detailed design would revise the current signing to the 'Newham Trail' (photo 11), broadening the destination(s).</p> <p>The audit brief makes clear that full footway provision along Newham Road has been investigated previously and is not a viable option; if the Newham Road route was only partly improved instead, by providing footway on the easier sections of verge, this may simply attract further pedestrians to use it, increasing the risk of collision in the more difficult untreated sections.</p>	

<p>Aggressive pedestrian-deterrent paving at the start of the route may reduce use, but for those who were not deterred, they could be forced into the carriageway, increasing their risk of collision.</p> <p>There is little if any scope for ‘traffic calming’ as even the most effective vertical features would only be expected to limit speed to that already found through this section of road. Such features would also be highly disruptive for HGVs, as well as potentially encouraging further pedestrian use.</p> <p>Increased pedestrian and cycle use of the more direct route along Newham Road, would be a likely consequence of the lifting bridge’s provision. Any adverse effects, if they could not be mitigated directly, would have to be weighed against the anticipated wider benefits of the scheme.</p>
<p>RSA Recommendation:</p>
<p>a) Divert as many pedestrians to the Newham Trail route as possible by enhanced positive direction signing and mild deterrent measures at both ends of the Newham Road section.</p> <p>b) Closely monitor the use of Newham Road by pedestrians and cyclists, and the associated behaviours. The auditors suggest this would require both ‘before’ and ‘after’ assessment.</p> <p>c) Provide diagram 544.1 pedestrian warning signs and supplementary plates (“no footway for X yards”) should persistent pedestrian use of Newham Road be evident, or, in the event of genuine and repeated safety issues, consider a ban on pedestrian use by Traffic Regulation Order (diagram 625.1). Note, this latter measure would likely be considered only in extremis, and would be difficult to enforce.</p> <p>d) Carry out a Road Safety Audit Stage 4 after one year.</p>
<p>Design Organisation Response:</p>
<p>Accepted – Signing and suitable deterrent measures will be assessed and proposed in order to reduce, as far as is practicable, the likelihood of pedestrians using this section of highway. Monitoring before and after using cameras will be discussed with the Client, as implementation of monitoring would enable accurate assessment of the situation identified by the auditor.</p> <p>An RSA Stage 4 should be considered by the Client if monitoring is undertaken before and after scheme implementation, and an increase in pedestrian activity is observed that may signify potential safety issues.</p>
<p>Auditors’ comment:</p> <p>No comment</p>
<p>Overseeing Organisation Response:</p> <p>Acknowledge and accepted.</p>
<p>Agreed RSA Action:</p> <p>Incorporate signing and deterrent measures where practicable.</p> <p>Implement monitoring and consider need for RSA4 post implementation.</p>