



# Newham Road Cycle Facilities, Truro

## Safety Review

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## Issue & Revision Record

Revision	Date	Originator	Checked	Authorised	Purpose of Issue	Nature of Change
V01	16/12/22				Original	N/A

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# 1. Introduction

This report results from a Safety Review carried out on proposed cycle route improvements on Newham Road, Truro, between Garras Wharf car park and Lighterage Hill. The proposals effectively extend the Newham Cycle Trail, which runs along the former railway line from Highertown to the northwest, into the city centre.

This Review has been requested by [REDACTED], Project Manager (Engineering Design), Cormac Solutions Ltd.

The Reviewer was:

- [REDACTED], Senior Technician (Infrastructure), Cormac Solutions Ltd

The Reviewer visited the site on 16 November 2022. The weather conditions were overcast with continuous moderate to heavy rain. Road surfaces were wet with extensive ponding in places.

Diagram numbers in this report refer to the Traffic Signs Regulations and General Directions 2016. References to the Traffic Signs Manuals (TSM) relate to the 2018 editions.

# 2. Information received

[REDACTED] supplied the following information:

Drawing No.	Rev.	Title
INFRA22-093-CSL-HGN-SW830439-DE-CH-0035	P02	Option 1D – Shared Use Path, Eastern Side, Sheet 01 of 02
INFRA22-093-CSL-HGN-SW830439-DE-CH-0036	P02	Option 1D – Shared Use Path, Eastern Side, Sheet 02 of 02

### 3. Description

The proposals consist of the following elements:

- a new two-way marked cycle route through the western side of Garras Wharf car park, running between the subway access to Lemon Quay to the north and a new access point at the southwest corner onto Newham Road at the junction with the car park;
- raised table cycle priority crossings across the accesses to Garras Wharf car park and Tesco supermarket;
- widened footways along the northern side of Newham Road between the Garras Wharf junction to the north and Higher Newham junction to the south, providing shared cycle and pedestrian use;
- reduction of the carriageway width between Garras Wharf car park junction and Aldi car park junction, including removal of the right-turn lane for Aldi;
- a new Zebra crossing to the south of the Aldi vehicle entrance, replacing an existing pedestrian refuge;
- a new parallel crossing at the southern end of the route, to the north of the Gas Lane junction;
- a new priority give way incorporating build-outs with an uncontrolled dropped crossing on Lighterage Hill;
- introduction of a 20mph Zone speed limit along Newham Road.

The Safety Review was also asked to consider an alternative option to the proposed route through Garras Wharf car park, using the existing shared-use route between the subway access and the Tesco junction, via a riverside path on the eastern side of Tesco supermarket. This section in particular forms part of the National Cycle Network Route 3.

## 4. Issues raised by this Review

### 4.1 Garras Wharf – Tesco vehicle access junction

National Cycle Network Route 3 presently runs from Truro city centre and Lemon Quay towards the Newham Trail to the south, via a subway under the A390 which brings cyclists into Garras Wharf car park. The route then takes cyclists and pedestrians around the northern perimeter of Tesco supermarket, along a shared-use path located between the supermarket building and the adjacent harbour edge. The route joins Newham Road on the southern side of the vehicle entrance to the supermarket, where it diverts along a narrow riverside path for approximately 80 metres, before ramping up to the carriageway and proceeding south, towards the Newham Trail. This whole section up to the ramp is off-carriageway and traffic free.

The proposed scheme directs cyclists south through the car park, to a new access point which would bring cyclists onto a new shared-use facility on Newham Road, at the western corner of the car park junction. A new raised table priority crossing across this junction would then take cyclists onto a widened footway converted to shared-use with pedestrians, along the frontage of Tesco car park. This would then proceed along the eastern side of the carriageway to another raised table priority crossing across the supermarket vehicle access junction, and then onto a newly widened footway, again converted to shared-use with pedestrians. This would extend southwards linking with an existing shared-use facility towards the Newham Trail.

The existing route around the north of Tesco, has the advantage of being completely traffic-free and is subject to lower pedestrian flows, therefore, minimal risk of conflict with motor vehicles or pedestrians. However, it is subject to poor surfacing, vegetation encroachment and pinch points created by the main building and planters projecting out into the path. This creates a less friendly environment for cyclists and pedestrians, as they have to pass one another closely risking collision, or negotiate large puddles after periods of heavy rain (photo 1). Forward sight lines are also restricted in places, due to vegetation growth or sharp corners.

The proposed scheme has the advantages of taking cyclists into a more open environment, where visibility of pedestrians is improved, and overall, a wider route to share with pedestrians. However, it also directs cyclists along a route where vehicle and pedestrian flows are much higher and risks of conflicts are greater. Consequently, the proposals bring about some significant road safety issues, and are highlighted as follows:

i. Cycle route through car park increases risk of collision with vehicles

This is a very busy car park with driver attention focussed on looking for vacant parking spaces, other vehicles moving around in and out of spaces, and pedestrians moving around between vehicles (photo 2). Drivers may not expect to see cyclists travelling through a car park, particularly when pulling out from a space, and so there is a higher risk of them failing to see a cyclist and colliding with them. The proposals suggest the cycle route through the car park may be marked with surface markings, however, this could be confusing for both drivers and cyclists. Cyclists may feel they have priority but due to the car park 'lane' widths, drivers may not be able to avoid driving within the cycle lane and avoid oncoming cyclists, (or cyclists may not be able to avoid approaching vehicles), therefore the risk of collision between the two, is increased.

ii. Vegetation obscuring forward visibility at junction increases risk of collision with crossing cyclists and pedestrians

The route brings cyclists from the car park onto Newham Road, at the corner of the car park access junction. There is substantial vegetation growth on the northern side of Newham Road, west of the junction (photo 3), which would reduce visibility, making it difficult for cyclists to see left-turning vehicles approaching from Fairmantle Street roundabout. Conversely, visibility would also be reduced for drivers to see cyclists or pedestrians about to cross the priority crossing, when coming from the roundabout. Whilst the proposals do seek to mitigate this somewhat by extending the footway out to reduce the minor road junction width, the vegetation will likely still create visibility issues in the summer months. There is, therefore, an increased risk of drivers colliding with cyclists or pedestrians at the junction. This risk would be in addition to the inevitable higher risk of collision created by directing cyclists across the carriageway at a busy junction mouth.

iii. Removal of right-turn lane, Aldi increases risk of rear shunt collisions

The widening of the footway across the frontage of Tesco, to provide a shared-use facility, results in the reduction of the carriageway width and removal of the right-turn lane for Aldi. The removal of the right-turn lane will at times, result in drivers wishing to turn into the supermarket car park, being stationary in the southbound lane whilst waiting for a gap in opposing traffic. This could be unexpected for southbound drivers behind, particularly given the relatively short distance from the bend to the north and the Garras Wharf

car park access and could result in drivers failing to slow or stop in time leading to rear shunt collisions with vehicles waiting to turn right.

#### iv. Provision of Zebra crossing

The narrowing of the carriageway also results in the removal of the existing pedestrian refuge crossing to the south of the Aldi vehicle access and replacement with a Zebra crossing. Whilst Zebra crossings can offer safety benefits and improved opportunities for pedestrians to cross the carriageway under certain conditions, they can be less safe than pedestrian refuges in other circumstances. For example, with an uncontrolled crossing at a refuge, pedestrians judge when there is a safe gap in traffic to begin crossing the carriageway and the refuge enables them to deal with the two opposing traffic flows separately. The emphasis on when it is safe to cross lies entirely with the pedestrian to judge for themselves. With a Zebra crossing, legally, a pedestrian is required to step onto the crossing in order to establish priority and for traffic to stop to allow them to cross. Pedestrians then cross the full width of the carriageway in one movement, requiring opposing traffic flows to give way at the same time. However, driver impatience or lack of observation can result in drivers failing to stop and narrowly missing pedestrians crossing, or braking suddenly leading to rear shunt collisions. The emphasis at Zebra crossings is on the driver to identify a crossing pedestrian and stop accordingly and so the onus of pedestrian safety is more towards the driver's responsibility.

A Zebra crossing here would have a number of issues. Firstly, there is a risk that Zebra crossing may be underused by pedestrians as the numbers crossing the carriageway are relatively low. This can result in drivers who use the road regularly, getting used to not stopping for pedestrians and so becoming increasingly less observant when someone is about to cross. This can in turn lead to them failing to stop and potentially colliding with a pedestrian. Locations where pedestrian numbers crossing the carriageway are low are often better catered for with refuge facilities. Secondly, forward visibility towards the crossing from the south, is hindered by vegetation growth on the western side of the carriageway, south of the crossing, within the Aldi-owned land (photo 4), see also issue 4.2 (i). As this is outside the public highway boundary, there is a risk that, even if removed now, there may be nothing to prevent vegetation growth happening in the future, which could result in a northbound driver not seeing a pedestrian crossing, leading to a collision or harsh braking and a rear shunt from a following vehicle. Thirdly, with three vehicle accesses/junctions in close proximity, there would be a number of different vehicle manoeuvres going on over a short distance,

which could result in driver attention being diverted away from pedestrians using the crossing, resulting in them failing to see someone using it.

In summary, the proposals to amend this cycle route redirect cyclists from a completely traffic free route, free of vehicle conflicts and minimal pedestrian conflict, to a route where cyclists would have to negotiate a busy car park, with its multitude of turning movements, two busy car park access junctions, as well as a route used by a comparatively larger number of pedestrians. The proposed route may offer a slightly more direct route between Lemon Quay and Newham Road and the design incorporates priority crossings on raised tables at the junctions to slow vehicles. However, given the volume of traffic using the junctions and higher level of environmental distractions for pedestrians, cyclists, and drivers in this busy area, there would inevitably remain a higher risk of cyclists being struck by vehicles turning into or out of the junctions.

Improving the existing route around the north of Tesco would overall, appear to be a safer option for pedestrians and cyclists. Improvements to this route such as resurfacing, relocation of the harbourside guardrailing further out, vegetation removal, signing, drainage and street lighting, would likely make this route more attractive and easier to use. Given the limited public facing aesthetics of the raised planters, it may be possible that Tesco would be open to reducing their size or removal, in order to widen the shared-use route and eliminate pinch point areas.

This would also enable the right-turn lane for Aldi as well as the pedestrian refuge on Newham Road to remain.

However, if the proposed scheme were to proceed, to minimise the issues highlighted, the following options are suggested:

- a) Provide the necessary width needed for the shared-use facility across the frontage of Tesco car park, by way of removing low-level shrubbery and widening the towards the rear of the footway (photo 5). This may provide adequate width to allow the right-turn lane and pedestrian refuge to remain in place.
- b) Provide a segregated traffic-free two-way cycle lane through the car park, thereby eliminating vehicle conflict and clarifying the route cyclists should take. This would likely require redistribution of parking spaces in order to provide the necessary width.



- c) Remove the vegetation from the southern corner of Garras Wharf car park to maximise visibility towards, and from the junction. Removal would be preferential to trimming, to ensure visibility is not obscured as a result of any future delayed maintenance.

Furthermore, the proposed design results in a very wide section of southbound lane, across the car park access junction, leading into the righthand bend. An improved alignment, bringing the give way line and kerblines to the south of the junction further out into the carriageway, would enable the raised table crossing to be positioned slightly further southwards, resulting in a small additional improvement in visibility.

## 4.2 Route wide issues

- i. 20mph Zone likely to be ineffective

The proposal includes introducing a 20mph Zone on Newham Road, a change from the current 30mph speed limit. 20mph Zones need to be self-enforcing in order to be effective and are required to have traffic calming measures no more than 50 metres apart (TSM Chapter 3, Paragraph, 8.7). Although the carriageway is proposed to be reduced in width along the length of the scheme, and so by definition, includes a 'traffic calming feature', the carriageway width is proposed to be 6 metres which is typically considered to be a standard road width and so not self-reinforcing in terms of a 20mph speed limit. Previous traffic speed surveys along Newham Road (in the area of the Morlaix Avenue on-slip), have shown an 85%ile speed of around 33mph northbound and 35mph southbound. The slight reduction of the carriageway width is unlikely to bring about a large enough speed reduction along the route and so drivers are likely to disregard the new speed limit. This could result in drivers failing to stop in time should a pedestrian or cyclist be crossing the proposed Zebra or Parallel crossings along the route, or lead to some drivers being more likely to disregard 20mph Zones and speed limits elsewhere in the area.

### RECOMMENDATION

Review the 20mph Zone proposal.

## ii. Sign obstruction, shared-use facility

An advance direction sign is located adjacent to Peat House, Newham Road, mounted on two steel posts within the footway (photo 6). There is a risk that a cyclist using the shared-use facility could fail to see the posts, particularly during the hours of darkness and strike the posts, or clip them with their handlebars when passing another cyclist or pedestrian, resulting in a fall and injury.

### RECOMMENDATION

Ensure any traffic signs mounted within the shared-use facility are located at the rear of the footway with adequate width to pass provided e.g. by mounting the sign on a cantilevered post, and with a mounting height of at least 2.4 metres.

## iii. Signs blocking visibility, shared-use facility

At the southern end of the shared-use facility, on the eastern side of the carriageway, near the Gas Hill junction, two large signs have been erected to the wooden fencing promoting local businesses (photo 7). These signs obscure visibility to the south for pedestrians crossing east to west at the uncontrolled crossing and potentially prevent northbound drivers seeing shorter pedestrians about to step into the carriageway. There is a risk of pedestrians and drivers failing to see one another which could result in a vehicle colliding with a pedestrian.

### RECOMMENDATION

Remove the signs obstructing visibility from the wooden fencing at the end of the shared-use facility.

## iv. Potential underuse of Parallel Crossing

A parallel crossing is proposed to the north of the junction with Gas Hill, replacing the present drop kerb crossing. As with Zebra crossings, parallel crossing should be limited to locations where traffic flows are frequent enough that pedestrians and cyclists would have difficulty crossing and where vehicle speeds are below 35mph. Whilst it is appreciated that the proposed crossing has benefits in terms of being on a designated cycle route and assisting trail users to cross the carriageway, the benefits should be balanced against the risks created by underuse of the crossing. Traffic flows

at this end of Newham Road are likely to be quite low, as may the number of pedestrians and cyclists using the crossing. As a result, drivers may be used to driving through without stopping and over time, and increasingly become less observant of anyone about to step or ride onto the crossing. This could result in a driver failing to stop and striking a pedestrian or cyclist using the crossing.

#### RECOMMENDATION

Review traffic and expected pedestrian and cycle flows at the crossing area to confirm the need for a controlled (parallel) crossing.

#### v. Priority give way layout, Lighterage Hill

The proposals show a priority give way system on Lighterage Hill, with build-outs on both sides of the carriageway, at the cycle crossing. However, despite proposed signing and markings shown on the northbound approach, giving southbound (uphill) traffic priority, Give Way markings are also shown on the southbound approach. This is against TSM Chapter 3, paragraph 4.8.5 as the markings contradict the signing and could lead to drivers being confused as to who has priority, resulting in someone failing to give way and colliding with an oncoming vehicle.

Furthermore, the two narrow build-outs, split on either side of the carriageway, create a single central lane. Priority build-outs typically have the through-lane entirely on one side of the carriageway, in order to place greater emphasis on which traffic flow has priority. Centrally located through-lanes, could result in drivers who do not have priority, thinking they can get through the road narrowing first, risking a collision with a southbound vehicle.

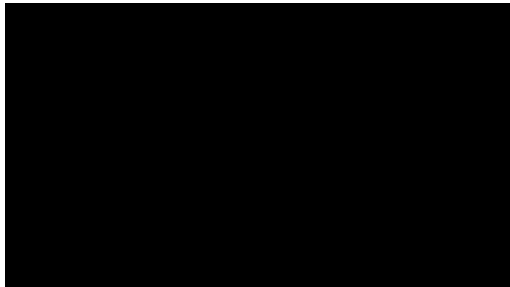
With regards to the proposed layout, it would therefore, typically, be expected to have a wide build-out on the western side of the carriageway (downhill lane), with southbound (uphill) traffic having the priority through-lane. This would mean that the downhill give way line would need to be far enough back from the build-out so that an HGV stopped at the marking, would be able to safely track out and around to pass through safely. Setting the give way marking far enough away may, however, result in reduced forward visibility towards traffic entering Lighterage Hill from Newham Road and approaching the priority system, due to the bend ahead (photo 8). Conversely, southbound traffic may not have adequate forward visibility of a large vehicle beginning to negotiate the build-out ahead. This could in turn, result in a situation where an HGV driver, travelling downhill, has committed

to moving out and around the build-out, just as a driver travelling uphill approaches and could result in a head-in collision or harsh braking and a rear shunt from a following vehicle. Alternatively, one of the drivers may attempt to reverse to allow the other through, and due to the relative restrictions in visibility, (e.g. for an uphill driver - proximity to junction, gradient, on a bend, or for a downhill driver - 'wrong' side of carriageway, gradient), could collide with a vehicle behind. For an HGV driver, reversing such a large vehicle on a steep hill, up or down, will be a difficult manoeuvre in itself but will be worsened if towing a trailer.

#### RECOMMENDATION

Review the priority give way layout to ensure that it reflects the intended traffic priority movement, whilst ensuring vehicle tracking movements of HGVs are catered for adequately, and that forward visibility meets requirements.

It may be sensible to trial a layout on site with cones, in order to establish an acceptable working arrangement, prior to construction.



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cc [REDACTED], Cormac Solutions Ltd.



Photo 1



Photo 2



Photo 3



Photo 4

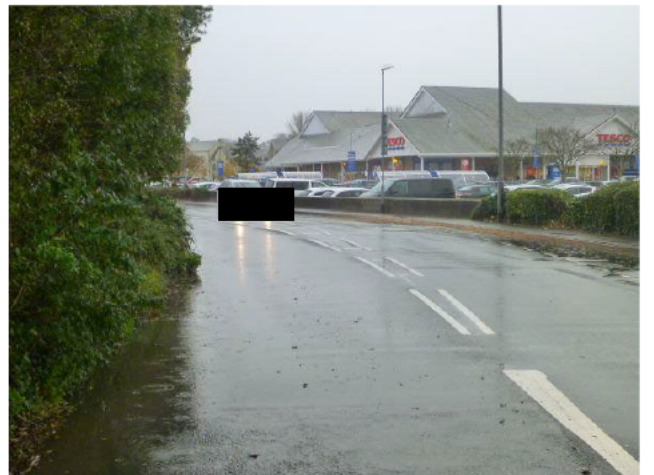


Photo 5

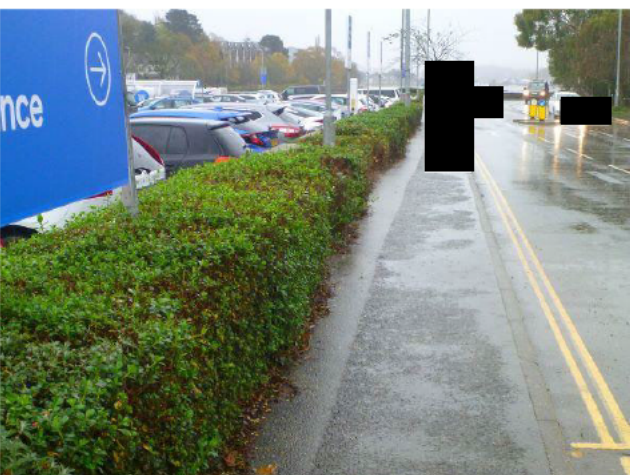


Photo 6



Photo 7



Photo 8

