

Final report:

For: Truro Cycle Campaign

Design review - cycling & walking crossing, A30/A390 Chiverton Cross junction



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Checking and sign off	
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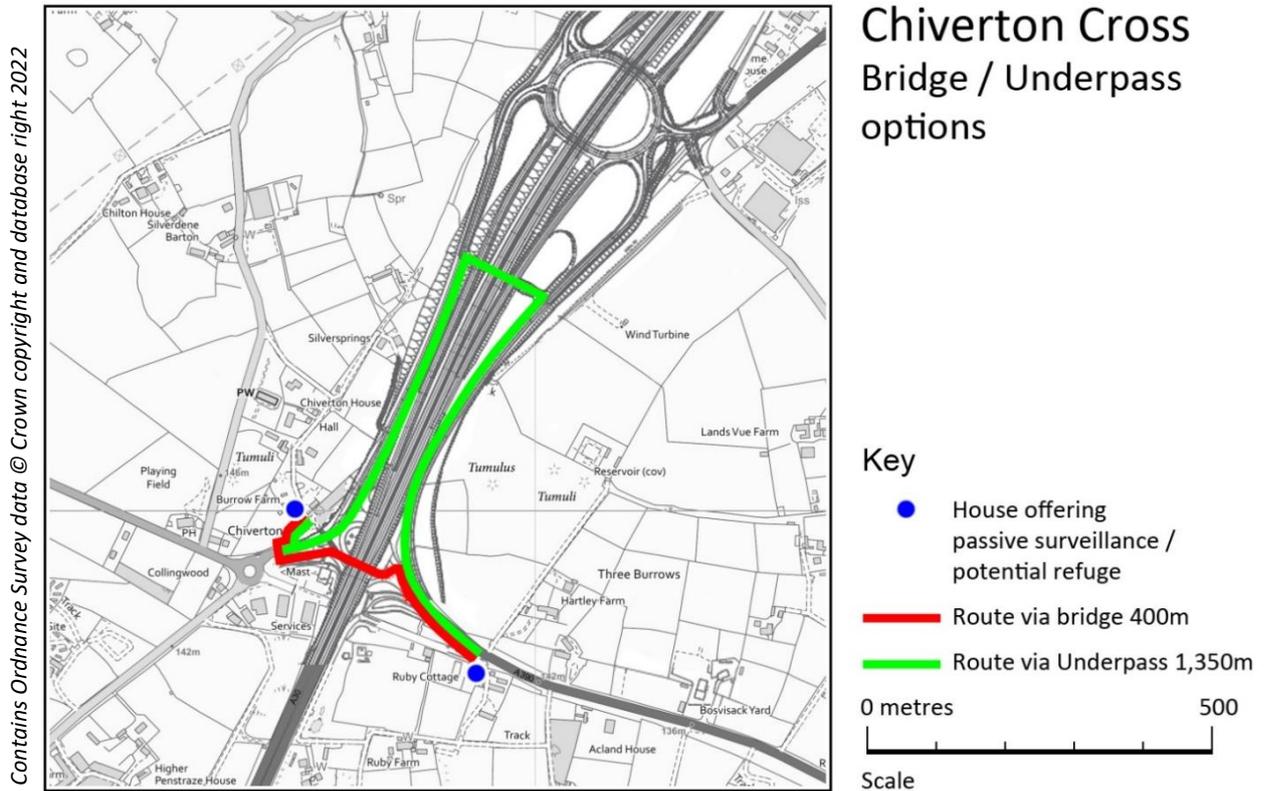
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1. Introduction

1.1 Background

Transport Initiatives has been commissioned by Truro Cycling Campaign to provide an independent assessment of the options for crossing the A30 at the A390 junction at Chiverton Cross (see Plan 1 below).



Plan 1 Chiverton Cross bridge & underpass options

1.2 History of the crossing

In 2018/19, during the planning process for the A30 improvement scheme, Truro Cycling Campaign led a campaign for a safe cycle crossing at Chiverton Cross as part of a route between St Agnes and Truro.

This helped win £17 million of funding from National Highways (formerly Highways England) for this route and three others, all to be known as the 'Saints Trails', with matching funding of £2 million from Cornwall Council.

It was proposed that the St Agnes to Truro route would include a cycle/foot bridge (shown in red above) at the present 'Starbucks' site of Chiverton Cross junction, where the A30 will be lowered by 2m and the existing roundabout removed.

The St Agnes to Chiverton segregated shared path received planning permission in October 2020 and the bridge at Chiverton Cross gained consent in March 2022.

Due to funding restrictions, the costs of delivering the A390 paths and the Chiverton Cross bridge are being assessed. There are concerns that these may lead to the underpass (shown in green above), currently under construction as part of the A30 improvement scheme, taking the place of the bridge as part of the St Agnes to Truro route.

2. Design issues

2.1 Underpass design

The Chiverton Cross underpass will be nearly 74m long, with internal dimensions of 4.0m width and 3.5m height, with usable headroom of 2.7m allowing for internal structures. It will be lit.

LTN1/20 suggests that where the two-way flow of cyclists in any peak hour is less than 300, a 3.0m wide unsegregated shared use path is acceptable. If the path is bounded by a high vertical wall (as is the case in an underpass) then the path should be 500mm wider on each side.

The recommended height of the underpass is determined by its length. LTN1/20 states that 2.4m is the desirable minimum for underpasses up to 23m in length and 2.7m beyond that. This is due to a requirement to admit more natural light. If a 2.4m high ceiling allows insufficient light into a 23m long underpass then the equivalent length for a 2.7m high ceiling is 26m, clearly much shorter than the 74m of the underpass here.

While there are cyclepaths through disused railway tunnels considerably longer than 74m, the cross section of the tunnels themselves is far larger. We consider therefore that a 74m underpass only 2.7m high will feel extremely claustrophobic both by day and by night.

DMRB CD195 paragraph E/4.37. states *“Kerb separation shall be provided between cycle tracks and any adjacent pedestrian facilities.”* This conflicts with LTN1/20 which assumes that cyclists and pedestrians can mix at low flows. However, if LTN1/20 is used to find the minimum widths the underpass width would need to be 5.7m to cover the minimum widths of the cycle and pedestrian sections plus adjustments for the kerb on one side of the cycle track and the vertical wall on the other. The underpass is thus substandard based on the requirements in CD195.

The recommended minimum width depends on the expected flows. DfT manual traffic count figures from 2019 recorded 28 cycles on the A390 at Penstraze, while at the same time 31 were counted at Silverwell. In 2020 there were an estimated 36 cycles at Penstraze with 44 cycles counted at Silverwell (data from <https://roadtraffic.dft.gov.uk>).

Cornwall Council proposes to construct the Saints Trail which will provide an alternative to cycling on the carriageway of the A390. Some new cycletracks alongside major roads result in a significant increase in cycling.

We have used the DfT's Propensity to Cycle Tool (PCT) to estimate the increase in cycling. Using the PCT's 'gender equality' option results in an increase to 105 cycle trips a day. This is an increase of 133% from the current modelled figure of 45 (relatively close to the actual count). Use of the 'e-bike' option results in a further increase to 140 a day (an increase of over 200%). These are single trips – clearly a number of users would pass through twice a day.

PCT is based on census data for travel to work. There is likely to be an increase in leisure cycling too – Cornwall's existing trails could be used to gauge how much this might be.

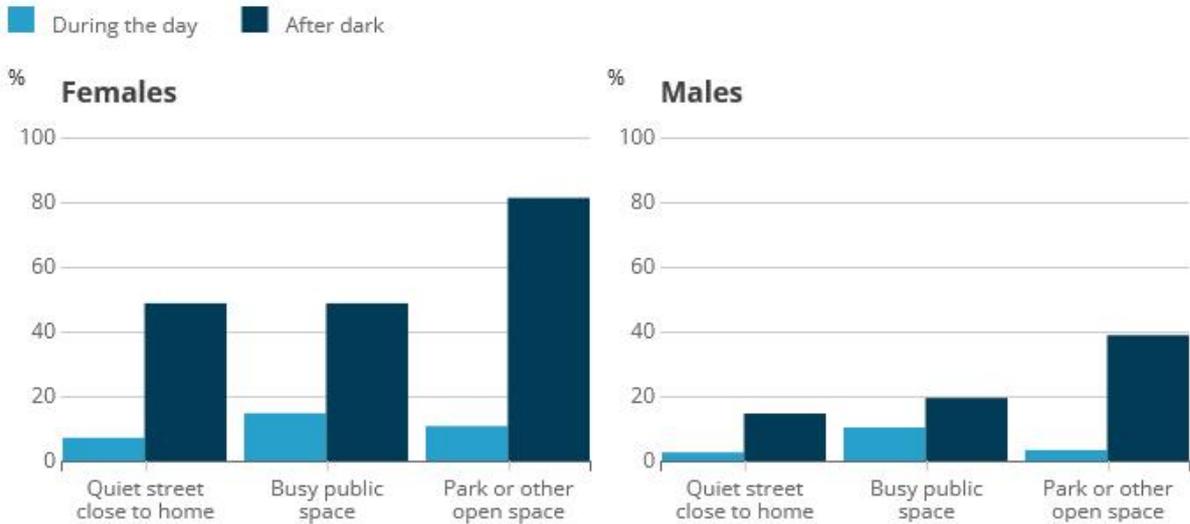
2.2 Personal safety & passive surveillance

There is little information on how places that are felt by users to be “scary” (i.e. a risk to their personal safety) suppress cycling trips, particularly in rural areas. However, there is more information on walking and about urban areas.

The Office for National Statistics surveyed people in June 2021 asking them about how safe they felt in different sorts of places. 49% of women reported feeling unsafe walking alone after nightfall. This statistic is similar whether the street is quiet or busy. However over 80% of women feel unsafe in an open space. This could equate to how a more urban dweller might feel in a rural area.

60% of the respondents said they would change their route to avoid a place where they felt afraid. In the case of routes passing through Chiverton Cross there are few alternatives and potential cyclists are more likely to use other forms of transport instead of starting or continuing to cycle.

Proportion of adults who felt “very or fairly unsafe” walking alone, by setting, and sex, Great Britain, 2 to 27 June 2021



Source: Office for National Statistics – Opinions and Lifestyle Survey

In general terms drivers on a road don’t provide very good surveillance of pedestrians or cyclists using an adjacent roadside path or cycletrack. They are also very unlikely to look through the underpass. While the underpass itself is what people will probably focus on, the route between the last house on the existing line of the A390 to the underpass and the first house at Chiverton Cross is around 950m longer than the direct route via the potential bridge (see plan 1 above).

The proposed bridge might receive passive surveillance from the Starbucks café but that will depend on detailed design.

CD195 states, in Table E/1.1.1 under ‘safety’, that *“Cycle networks should not only improve cyclists’ and other road users’ safety, but also their feeling of how safe the environment is (their personal security).”*

It also notes some design characteristics that can improve the personal security of users on cycle routes – see excerpt below

NOTE *The following design characteristics can improve the personal security of users on cycle routes:*

- 1) cycle routes within the view of passing people and passing traffic;*
- 2) lighting;*
- 3) underbridges that provide cross-sections wider than the specified values with flared wing-walls, good lighting and good sight lines;*
- 4) vegetation that is a low growing variety (up to 0.8m) on underbridge approaches and adjacent to entries.*

The cross section chosen is to the absolute minimum standard for the expected number of cyclists (the dimensions are deemed suitable for less than 300 in each peak hour) but at around 74m is very long. This will increase the perception of low personal safety due to the time take to pass through the underpass.

2.3 Directness of the route

The route via the underpass would be considerably longer than the direct route, requiring an additional distance of around 950m. This would take an average cyclist around 4 minutes (and an average pedestrian around 12 minutes).

The additional distance added to a trip between St Agnes and Truro would suppress the number of users by around 5%. (information from Propensity to Cycle Tool).

We would also expect an additional suppression of trips due to the way the route via the underpass appears to take people cycling (and walking) away from the desire line. The suppression of shorter trips would be greater, with, for instance, 4km long trips being suppressed by around 13% plus the extra for the route appearing to be indirect.

Design Manual for Roads & Bridges (DMRB)¹, otherwise known as “Standards for Highways” is the binding design standards document for National Highways (previously known as Highways England).

‘CD195 Designing for cycle traffic’ is part of DMRB and sets out how cycling should be accommodated on the trunk road network. Paragraph E/4.38. states *“Where an overbridge is being introduced because a road severs an existing right of way, the overbridge shall be sited and aligned to minimise the diversion from the existing line of the cycle route.”*

There is no such statement in the section on underbridges (which includes underpasses) but it seems reasonable that the spirit of paragraph E/4.38., that routes should be as direct as possible, should also apply to underbridges.

2.4 Equality Act 2010

All new services are required to be compatible with the Equality Act – this includes paths and crossings. Public bodies such as National Highways are also required to comply with the Public Sector Equality Duty.

Four of the Protected Characteristics set out by the Equality Act are directly relevant here while some of the others could be. The directly relevant ones are

- Age
- Disability
- Maternity and Pregnancy
- Sex

Age, Disability, and Pregnancy have a bearing on how far people can travel unaided. We have also noted that women are particularly disadvantaged by environments that could be seen as threatening.

The Equality Act not only applies to situations where there is a direct connection such as an ability to walk or cycle a particular distance but also to situations that someone with a protected characteristic perceives as a problem. The direct bridge option is far more compliant with the Equality Act than the underpass option.

¹ <https://www.standardsforhighways.co.uk/dmr/>

3. Conclusion

3.1 Comparison of options

Compared to the route option via the bridge, the option via the underpass is likely to:

- Suppress active travel trips due to its additional length
- Suppress active travel trips due to the fact that many users would feel insecure using it at night and during autumn and winter evenings
- Have lower compliance with the Equality Act compared to a bridge
- Reduce the value for money of Cornwall County Council investment in the Saints Trail

Furthermore the underpass does not fully comply with CD195. Although it does comply with the letter of Local Transport Note 1/20, it does not comply with the spirit of the Government policy on Active Travel set out in Gear Change (July 2020) as well as the DfT's recent statements including their recent funding announcement on the Active Travel Fund (20 May 2022).



Entrance to the new underpass (photo by Truro Cycling Campaign)

3.2 Recommendation

Based on these issues, we conclude that the underpass is an unsatisfactory option. We recommend that:

- a. The cycle and pedestrian route across the A30 should be via the bridge option, on a direct alignment**
- b. a detailed Equality Impact Assessment (EqIA) should be carried out into the two options by Cornwall Council / National Highways**