A417 Missing Link
TR010056

8.8 Walking, Cycling and Horse Riding Access across A417 Online Section

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A417 Missing Link

Development Consent Order 202[x]

Walking, Cycling and Horse Riding Access across A417 Online Section

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1 Introduction

1.1.1 This file note describes the proposals for walking, cycling and horse-riding (WCH) crossings adjacent to Crickley Hill, and provides information to inform decision making as part of the A417 Missing Link (the scheme).

1.1.2 This file note considers feedback from stakeholders through the WCH Technical Working Group (TWG), within which some members have expressed the need for additional crossing facilities along the A417 at Crickley Hill as part of the scheme.

1.1.3 The relevant policy context for the mitigation of impact and reasonable opportunities for enhancement, and use of reasonable endeavours to address historic severance for WCH, is set out within the National Policy Statement for National Networks (NPSNN). Accessibility is considered in paragraphs 3.19 of the NPSNN onwards. In particular, paragraph 3.22 of the NPSNN sets out that severance can be a problem in some locations, and where appropriate applicants should seek to deliver improvements that reduce community severance and improve accessibility. Furthermore, paragraph 5.205 of the NPSNN is consistent with paragraph 3.19-3.22, and sets out that the applicant should provide evidence that as part of the project they have used reasonable endeavours to address any existing severance issues that act as a barrier to non-motorised users.

1.1.4 The Environmental Statement (ES) Chapter 12 Population and Human Health (Document Reference 6.2) considers the effects of the scheme on the surrounding population including in relation to the transport network and access for WCH, during both construction and operation of the scheme. A Public Rights of Way (PRoW) Management Plan is contained in ES Appendix 2.1 EMP Annex F (Document Reference 6.4) and sets out the proposals for PRoW and local routes with public access. It seeks to address impacts where possible and appropriate, and improve accessibility for WCH as part of the scheme.

1.1.5 With the current situation, all crossings of the A417 have to be made at grade, and relevant to this is the safety of people taking into account incidents involving vehicles and WCH. As set out in the Case for the Scheme (Document Reference 7.1), within the 5-year period from July 2014 to June 2019 inclusive, on the single carriageway section of the A417 between Brockworth bypass and Cowley roundabout, there were 42 Personal Injury Accidents (PIAs) recorded. These accidents resulted in 82 casualties, of which 8 were fatalities, 21 seriously injured and 53 slightly. In terms of collisions on the single carriageway section of the A417 between Brockworth bypass and Cowley roundabout involving WCH over the same period, records show two PIAs involved pedestrians, which resulted in one fatality and one serious injury.

1.1.6 With the scheme in place there would be multiple grade-separated crossings including the Grove Farm underpass, Cotswold Way crossing, Gloucestershire Way crossing, Cowley overbridge and Stockwell overbridge. This would provide a safer way for people to move around the area. For example, the proposed Grove Farm underpass would help address historic severance and fragmentation of the A417 to the west of the scheme, where north-south crossings would require pedestrians to cross the busy road, which is considered to be unsafe.

2 Current Situation

2.1.1 There are currently a number of public rights of way (PRoW) that are intercepted by the existing A417.

2.1.2 The area of interest for the purpose of this note is shown on the Gloucestershire County Council (GCC) Rights of Way online map, with an extract shown in Figure 2-1. The map is not the Definitive Map of Public Rights of Way for legal purposes but seeks to show the same information online.

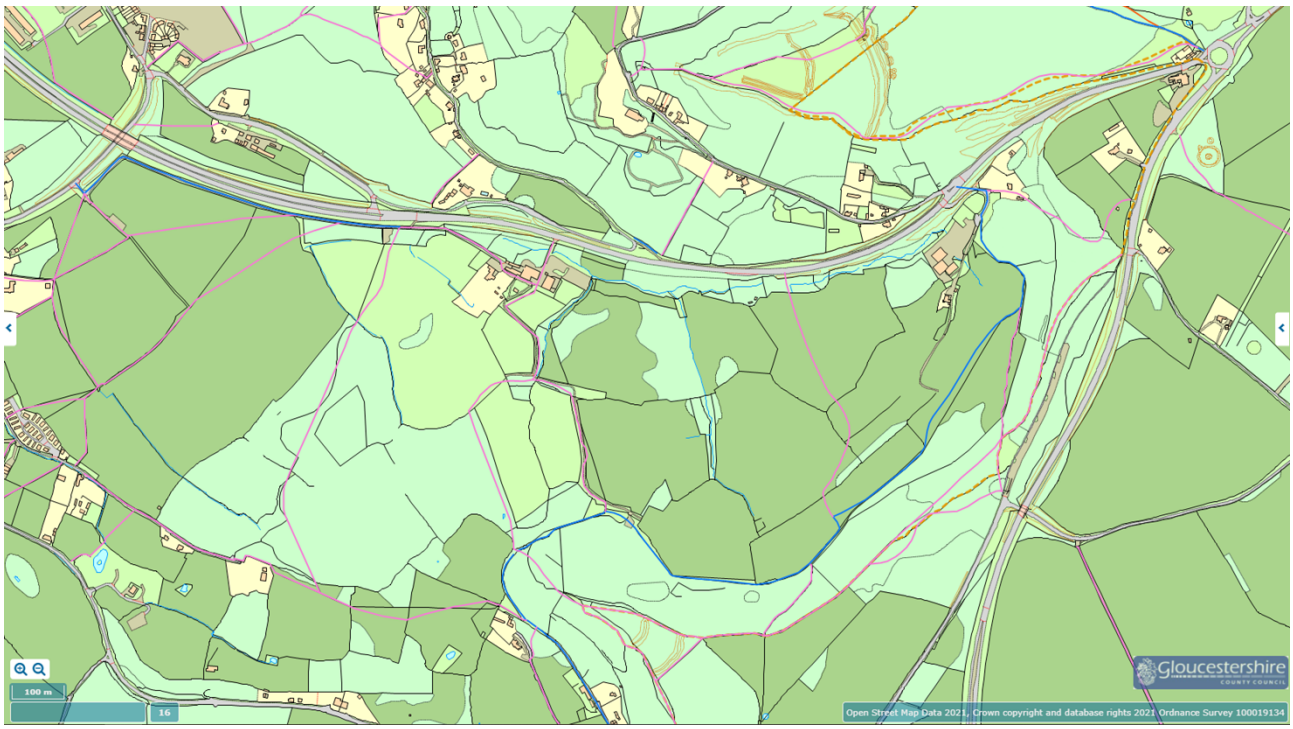


Figure 2-1 GCC Rights of Way online map

2.1.3 The scheme presents a more detailed map of existing PRoW with accurate labels in the context of the scheme design, in ES Figure 12.2 (Document Reference 6.3). An extract of the area of interest is shown in Figure 2-2 below.

2.1.4 Figure 2-3 then shows the existing locations A, B, C, D and E where PRoW lead up to the existing A417, shown on Ordnance Survey (OS) mapping provided as an extract of a submission made by some members of the WCH TWG. Locations A, B, C and E are all footpaths (FP) and D involves a bridleway (BW). When both figures are compared:

- Location A focuses on a route involving Badgeworth FP80
- Location B focuses on a route involving Badgeworth FP84
- Location C focuses on a route involving Badgeworth FP86
- Location D focuses on a route involving Badgeworth BW87 (and FP89)
- Location E focuses on a route involving the Cotswold Way National Trail (where it crosses the Air Balloon roundabout).

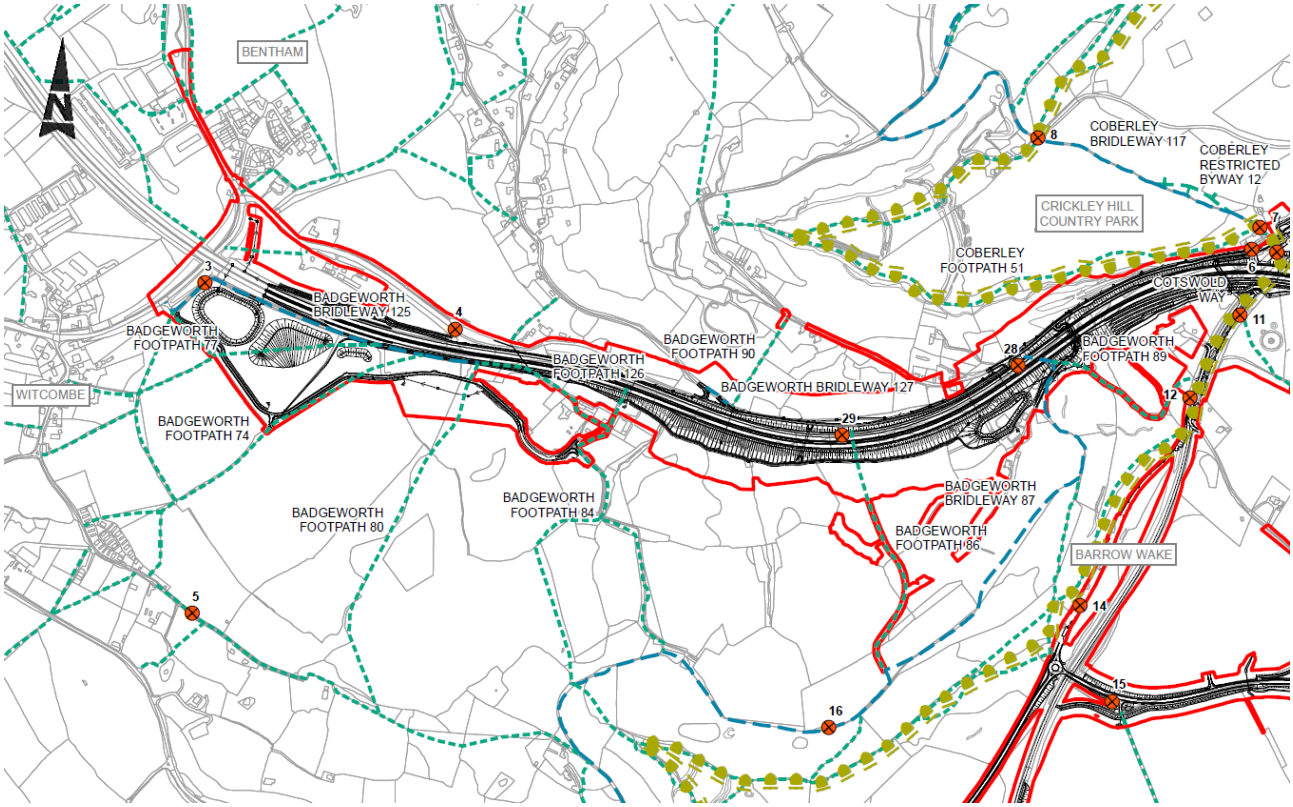


Figure 2-2 Extract ES Figure 12.2 PRoW

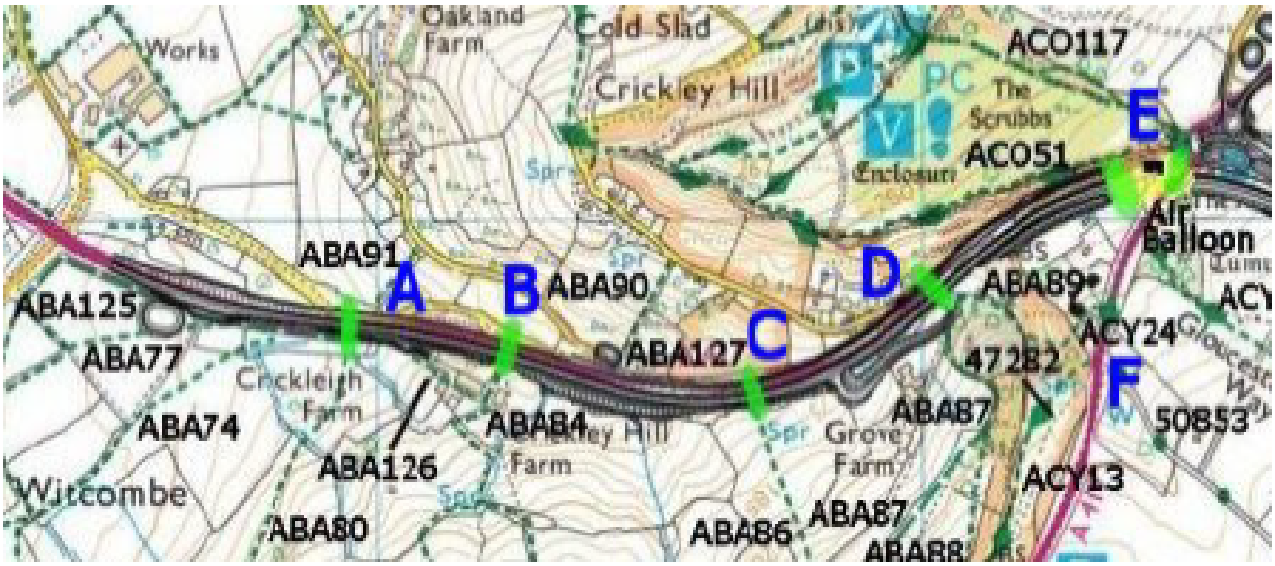


Figure 2-3 Existing PRoW crossings shown on OS mapping

2.1.5 These routes were severed or fragmented by the existing A417 when the last major improvements to the A417 were carried out in the 1990s. In particular, routes at Locations A to D require crossings of the main A417 carriageway but were not formally stopped up by the local highway authority (GCC) at that time.

2.1.6 As a result, one PRoW (at Location C, Badgeworth FP86) extends across the full width of the existing A417, whilst the others either extend partially across or are dead ends at the highway boundary. None of the PRoW have safe, suitable connections on both sides of the highway. It is possible for pedestrians to informally cross the existing A417 at these severed locations, however these crossings are unsafe, for example with barriers or obstructions across the highway and its verges either side.

2.1.7 For the five-year period from July 2014 to June 2019 inclusive, on the single carriageway section of the A417 between Brockworth bypass and Air Balloon, there were two accidents involving pedestrians, one of which resulted in serious injury and one of which was fatal.

2.1.8 With the scheme in place there would be grade-separated crossings provided near locations D (with the Grove Farm underpass) and E (with the Cotswold Way crossing). The remaining Locations A to C are therefore explored further below.

2.1 Location A - End of Badgeworth FP80

2.1.1 Figure 2-4 shows the crossing point of location A. The image shows that there is a formal and suitable provision on one side of the carriageway although this is a cycle link not FP80, and the footpath is at the back of the highway boundary. However, on the other side of the carriageway there is no connection, and the presence of vehicular restraint systems and a fence means any person crossing the road at this location would not have a safe connection or refuge area on the other side.

Source: Google Street View

Figure 2-4 A417/Badgeworth FP80

2.2 Location B - Badgeworth FP84

2.2.1 Figure 2-5 and Figure 2-6 show the crossing point of location B. The image shows that, although there is signage to depict a formal footpath at the back of the highway boundary on one side of the carriageway (south), there are a number of obstacles/constraints to users. There is no central refuge area in the middle of the carriageway. In addition, on the other side of the carriageway (north) there is no connection, and any person crossing the road at this location would not have a safe connection or refuge area on the other side.

Figure 2-5 Badgeworth FP84 (south)

Figure 2-6 Badgeworth FP84 (north)

2.3 Location C - Badgeworth FP86

2.3.1 Figure 2-7 and Figure 2-8 show the crossing point of location C. The images show that there is formal signage on one side of the carriageway (south). Here is no central refuge area in the middle of the carriageway. On the other side of the carriageway (north), users would connect onto the existing roadside footway, which runs along this section of the A417.

Figure 2-7 Badgeworth FP86 (south)

Figure 2-8 Badgeworth FP86 (north)

2.4 Survey Data

2.4.1 Following engagement with stakeholders through the WCH TWG, it was clear that some participants consider these locations A to C provide for crossings of the carriageway and additional crossings should be provided along the A417 at Crickley Hill to those proposed as part of the scheme.

2.4.2 Despite the current situation set out in 2.3 above, some users may choose to cross the carriageway. As a result of the engagement with the WCH TWG, Highways England commissioned additional surveys to help better understand user behaviour along this section of the A417.

2.4.3 The additional surveys supplement data recorded in Environmental Chapter 12 Population and Human Health, and its Appendix 12.2 Walking, Cycling & Horse riding including Disabled Users Review at Preliminary Design (Document Reference 6.4).

2.4.4 Surveys undertaken on Saturday, 2 September 2017 for the WCH studies are comprehensive across the network and include Dog Lane, the PRoW between locations A and B (Badgeworth FP126) and location C. An additional survey on Saturday, 20 March 2021 records users at location A.

2.4.5 To summarise, the survey data shows a high walking demand along Dog Lane but less demand on the eastern part of this stretch of A417 to Air Balloon roundabout. No users are recorded crossing the road, but this could reflect a lack of safe facilities rather than a lack of desire. The data shows a noticeable uplift in user numbers between years 2017 and 2021, which is assumed to be as consequence of the current pandemic.

2.4.6 The 2017 surveys record WCH users only but the 2021 survey records WCH and vehicles.

2.4.7 The non-motorised WCH users are:

1. pedestrian,
2. pedestrian with dog,
3. pedestrian pushing pram/pushchair,
4. wheelchair user,
5. jogger/runner,
6. cyclists, and
7. horse riders.

} Users 1-5 are categorised as walkers

2.4.8 Motorised vehicles are recorded as motorbikes, car/light goods vehicles and heavy goods/agricultural vehicles.

2.4.9 Figure 2-9 shows the observed users at location A. Movements to/from arm A refer to a small number of cars/light goods vehicles using the lay-by. Movements to/from arms B and C were predominantly walkers, the second main user being cars/light goods vehicles, third cyclists and finally horse riders were the least observed user. No movements to/from arm D were counted, i.e. walkers crossing the road.

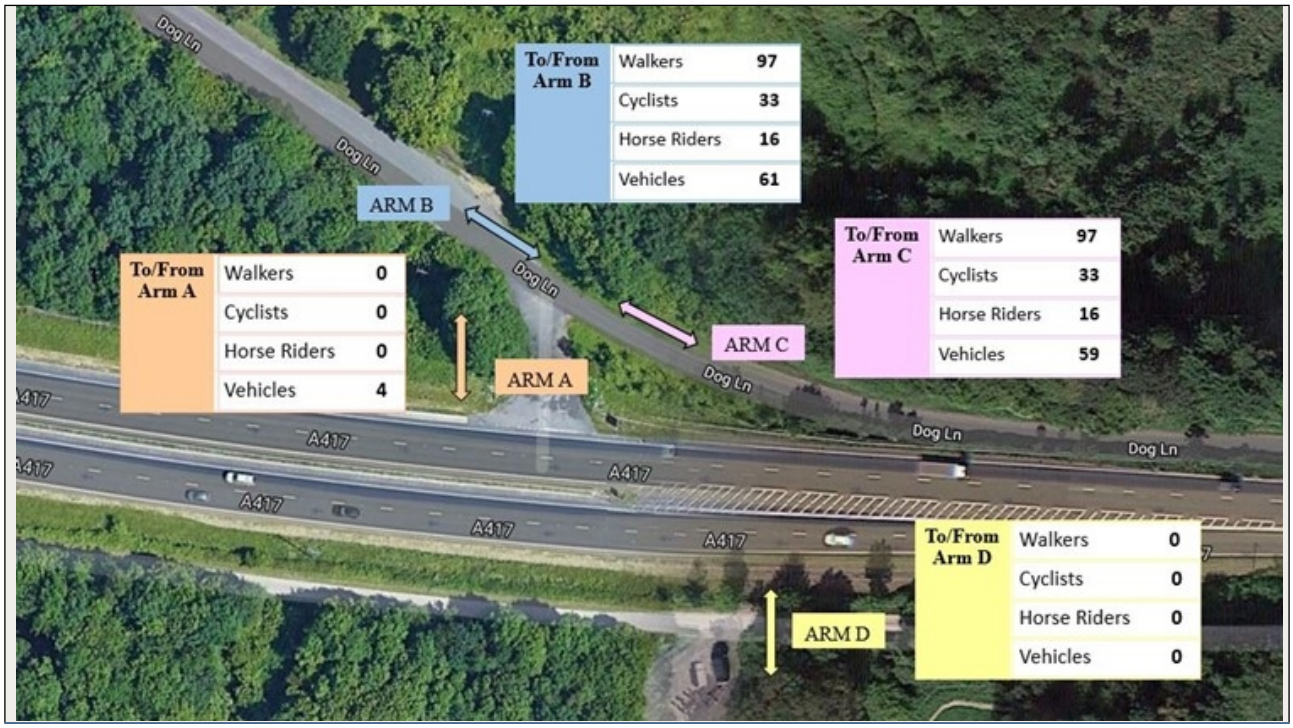


Figure 2-9 Survey data at location A (2021)

2.4.10 Figure 2-10 shows the observed users on the southern side of the A417 between locations A and B. The predominant user is cyclists, which could be because the track caters for Flyup 417 Bike Park and its visitors. The number of walkers on the southern side of the A417 is much fewer than along Dog Lane on the northern side.

Figure 2-10 Survey data between locations A and B (2017)

2.4.11 The recent survey at location A also captures movements further along Dog Lane to ascertain desire lines. Figure 2-11 shows the recorded data and most users stay on Dog Lane (arms A and B) with a few using the footpath to/from Cold Slad Lane (arm D) or A417 footway/cycleway (arm E). Vehicular access is restricted at arm E and the observed vehicle, which was a car/light goods vehicle, is assumed to have used the recess in the lane to make a U-turn.

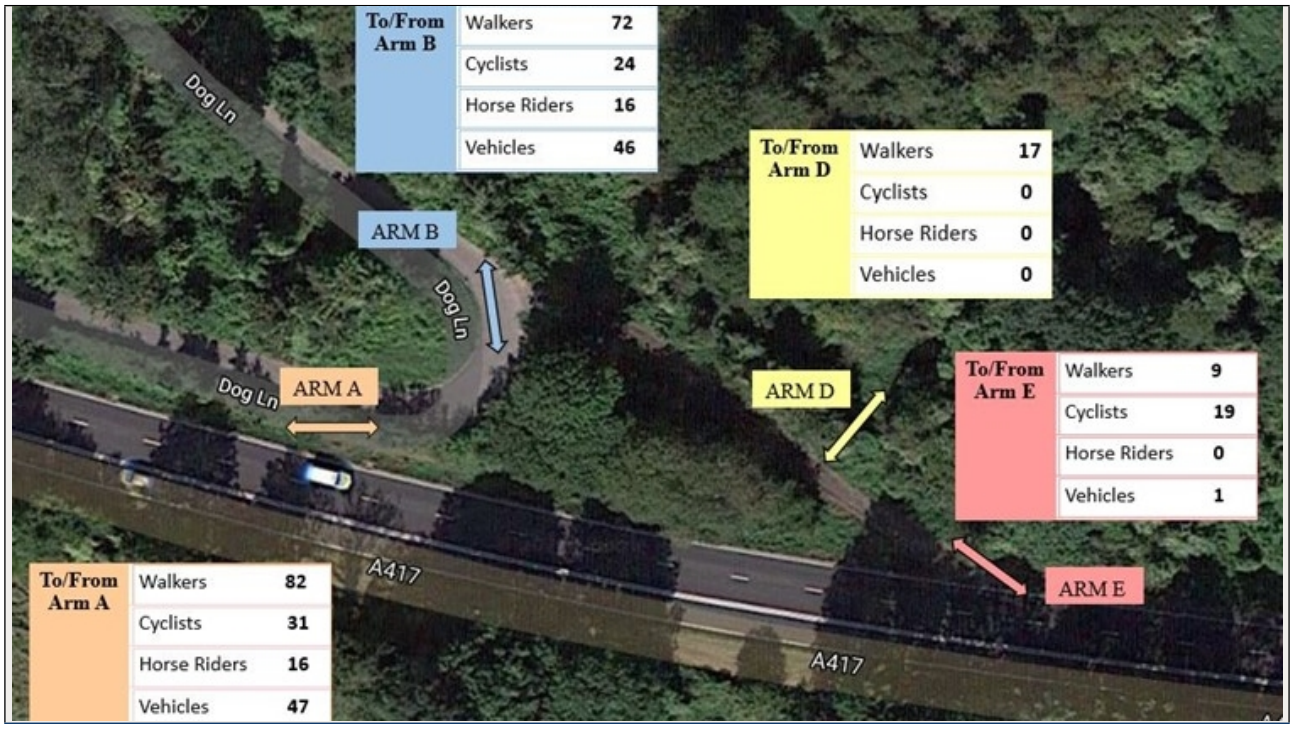


Figure 2-11 Survey data north-east of location A (2021)

2.4.12 Survey data at location C is shown on Figure 2-12 and walkers and cyclists continue to use the footway/cycleway on the northern side of the road. As for location A, no-one crosses the road. The footway/cycleway is a continuation of arm E in Figure 2-11. Comparing arm E with movements 1 & 2 in Figure 2-12 indicates a noticeable uplift in the numbers of users between years 2017 and 2021. This supports anecdotal evidence that walking and cycling in the countryside has increased as a consequence of the current covid-19 (coronavirus) pandemic.

Figure 2-12 Survey data at location C (2017)

2.4.13 The surveys confirm the linear demand to walk and cycle along the A417 corridor and the scheme would retain the linear route with a new bridleway between Dog Lane and Cold Slad Lane. This would be an improvement over the current situation because it would be offset from the carriageway and also cater for horse riders. Walkers and equestrians would be able to cross the A417 at the new Grove Farm underpass, which would be a substantially safer facility than the current situation.

2.4.14 The observed 28 walkers/cyclists on the northern side and 17 walkers on the southern side do not support provision of an additional crossing between Witcombe Court underbridge and Grove Farm underpass. Potential growth in the numbers of users and latent demand is unlikely to affect the need for a new crossing.

2.4.15 The following sections describe the WCH crossing proposals and considerations of additional crossings.

3 Proposed Situation and Alternatives

3.1 Proposed Crossing Provision

3.1.1 The scheme seeks to provide safe and attractive routes and crossing points for users across the existing and proposed A417 mainline. The proposals for PRoW including WCH crossing points are detailed in the PRoW Management Plan contained in Annex F of ES Appendix 2.1 EMP (Document Reference 6.4). The relevant extracts of the PRoW Management Plan drawings sheets 1 and 2 are provided in Figure 3-1 and Figure 3-2 respectively. Figure 3-3 shows the proposed location and local context of the proposals compared to the crossing points that form the focus of this note.

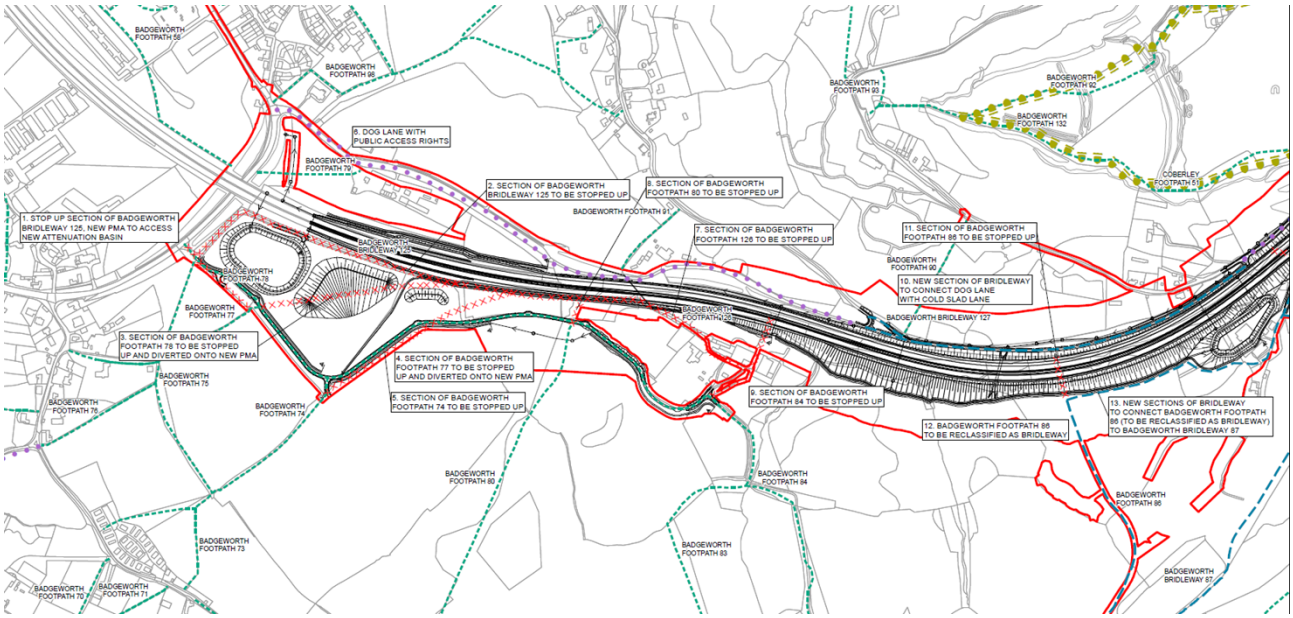


Figure 3-1 Extract from PRoW Plan Sheet 1

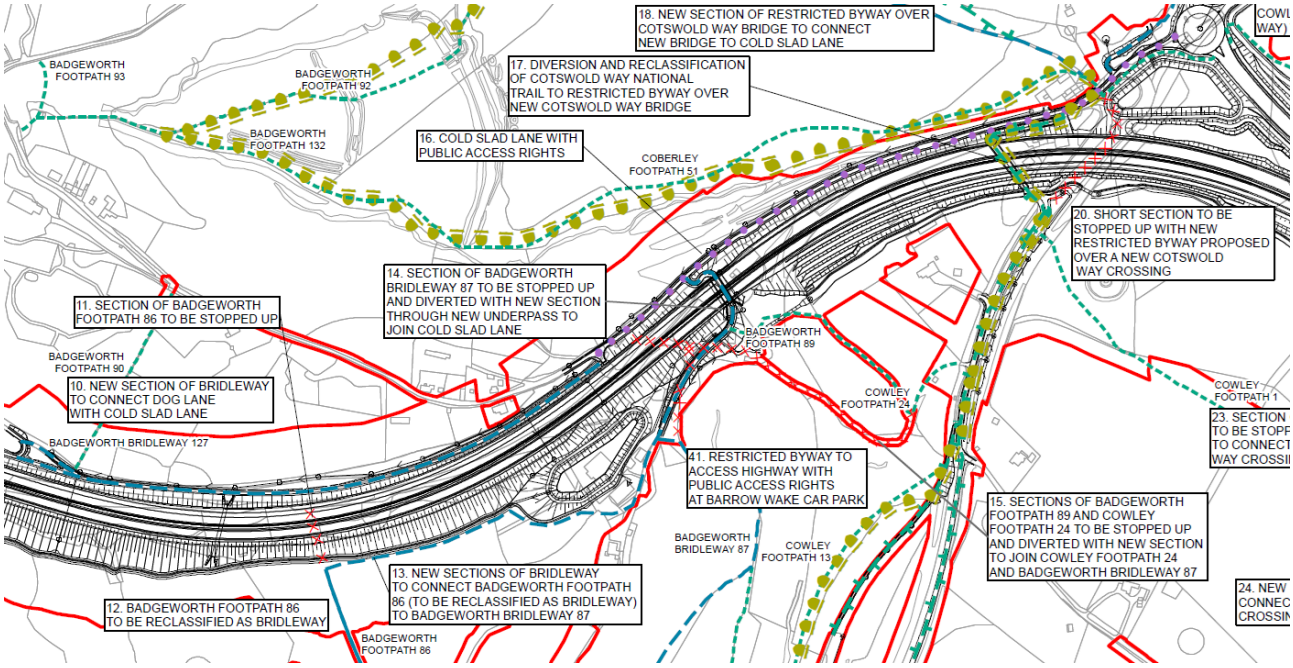


Figure 3-2 Extract from PRoW Plan Sheet 2

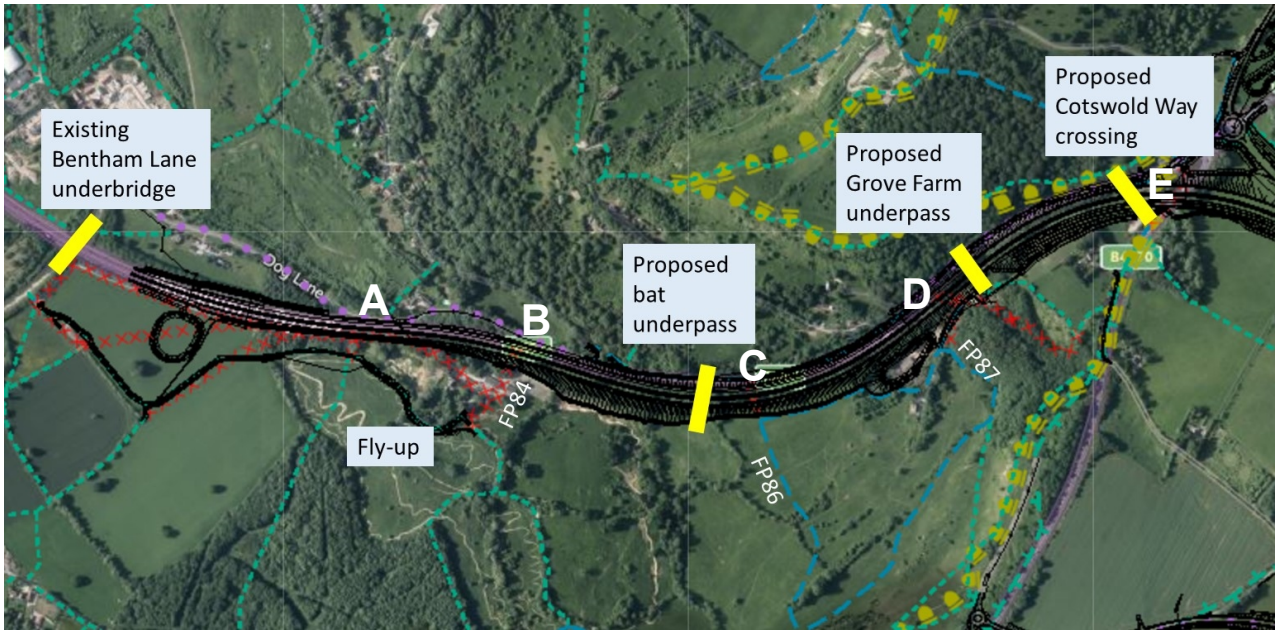


Figure 3-3 Location plan in relation to the proposals

3.1.2 Focusing on the western section of the scheme in the area of interest for the purpose of this note, in addition to the existing crossing point at Witcombe Court underbridge in the west (also known as a crossing of the A417 at Bentham Lane underbridge), crossing points are proposed at chainage (ch) 1+580 via a new Grove Farm underpass, and at ch 2+000 via a new Cotswold Way crossing. These crossings are in similar locations to D and E shown on Figure 2-3. Figure 3-3 helps to illustrate the proposed locations of pedestrian and ecological crossings in the area.

3.1.3 During stakeholder engagement and public consultation, there have been suggestions from some members of the WCH TWG for one or more further additional crossings, in the vicinity of the section of A417 between Bentham Lane and Grove Farm (points A, B and C on Figure 2-3).

3.1.4 Highways England has considered provision of additional crossings as suggested, and the following sections of this note describe the findings of Highways England's considerations.

3.2 Crossing Design Principles

3.2.1 Any PRoW crossing should be designed to current design standards. The main design reference is the England National Application Annex to CD 143 *Designing for walking, cycling and horse-riding* (Highways England, March 2020).

3.2.2 At grade crossing facilities on the proposed A417 are discounted on safety grounds, given they would be unsafe due to the high speeds of vehicles and the presence of a concrete central reserve.

3.2.3 Any connection across the A417 on Crickley Hill would thus need to form either a bridge or an underpass structure.

3.2.4 The provision of bridges on Crickley Hill is discounted for the following reasons:

- The span and form of any bridge along Crickley Hill would be extensive and require significant permanent land take to accommodate the topography, geology and difference in levels in the area.
- Any additional land take to construct new bridges would reduce the ability to provide enhancements to biodiversity as a result of permanent loss of habitat(s).
- The presence of businesses and agricultural holdings along this section would be affected by significant land take and require associated compensation through negotiation to accommodate a bridge structure, or with significant risk to compulsory acquisition given the nature and likely impacts of the proposals.
- Additional bridges along Crickley Hill would have a detrimental impact on the landscape and be visually intrusive on critical viewpoints such as Barrow Wake. This is an essential consideration in the Area of Outstanding Natural Beauty (AONB) where stringent policy tests apply such as through the *National Policy Statement for National Networks* (Department for Transport, December 2014).

3.2.5 The above is a summarised list that helps to set out the likely significant engineering, environmental and value for money complexities associated with a bridge structure in this area.

3.2.6 The minimum underpass size would be 2.3m x 2.3m to cater for pedestrians only. Any provision for other users would require the underpass to increase in size.

3.2.7 On this basis, the remainder of this note considers the provision of pedestrian crossing points via underpass connections.

3.3 Underpass near Location A

3.3.1 Figure 3-4 shows the typical cross section between ch 0+000 and 0+560. This shows that the proposed design is at grade with the existing carriageway. Although this is a historical route that has been severed by the existing A417, no connection across the carriageway is shown on the current definitive map. The existing A417 therefore severs connectivity between PRoW on the southern side and Dog Lane on the northern side, via a highway crossing, which is unsafe.

3.3.2 The existing crossing point at Witcombe Court underbridge (at Bentham Lane) is situated approximately 500m west of location A along the A417, or approximately 600m west of location A via Dog Lane. This arrangement provides a safe grade separated crossing of the A417 in the existing situation. An additional crossing at location A would therefore only offer journey savings up to around eight minutes.

3.3.3 Pavement, structural and headroom allowances for a pedestrian underpass at location A would lead to the footpath being approximately 3.8m below the road surface level.

3.3.4 Access to the underpass would need to consist of approach ramps/steps on both sides and require major reconfiguring of Dog Lane.

3.3.5 This would lead to the need for additional land being required for the scheme, that would impact on the Flyup 417 Bike Park business given the location of its assets in this area. The extent to which land is required and its associated impacts on that business would require design development work and consultation. A risk of

further objection from the landowner as a statutory consultee would carry weight at the expected examination of the Development Consent Order application.

3.3.6 It would also lead to additional ecological and biodiversity impacts due to the increased footprint that would be required to construct the structure. Any additional land take would reduce the ability to provide enhancements to biodiversity as a result of permanent loss of habitat(s). Furthermore, a crossing at or near location A would be immediately adjacent to (if not within) Bentham Dog Lane Fields potential Local Wildlife Site. Whilst this is a non-statutory site that is yet to be officially designated, it is to be treated in the same way as a Local Wildlife Site, which have been designated by the local planning authority and is protected through local planning policies as they support important habitats and/or species of nature conservation value within the county.

3.3.7 The underpass would be an enclosed space and people's perception of safety would be heightened. It is unlikely that daylight would penetrate the full length of the underpass and there would be no through visibility. A lack of natural light leads to fear and intimidation and people may be deterred from using the underpass even during daylight hours.

3.3.8 If the underpass is not maintained sufficiently, leaf debris is likely to accumulate leading to slips and falls because people won't be able to see where they are walking. Walkers not familiar with the area are unlikely to have a torch with them whatever the time of day and, without daylight penetration or artificial lighting, the underpass would be unsafe for people to use. There would also be an associated and increased risk of anti-social behaviour given the lack of lighting and length of crossing.

3.3.9 It is estimated it would cost up to £1 million. As such, the solution is likely to offer very poor value for money.

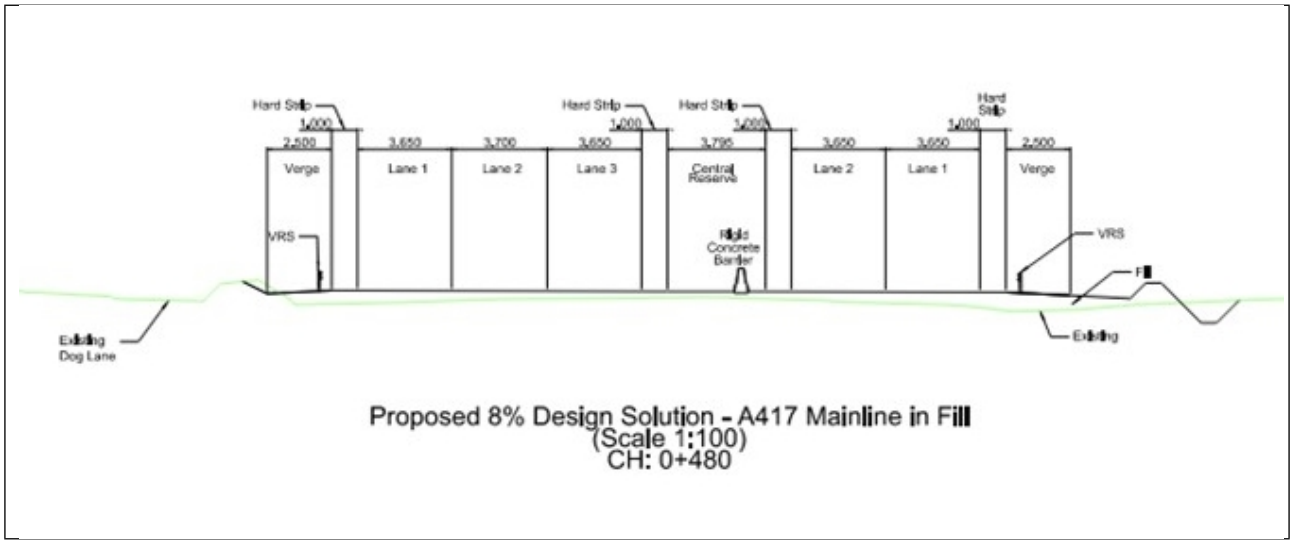


Figure 3-4 Typical cross section ch 0+000 to 0+560

3.4 Underpass near Location B

3.4.1 The existing crossing point at Witcombe Court underbridge (at Bentham Lane) is situated approximately 850m west of location B along the A417, or approximately 1km west of location B via Dog Lane. This arrangement provides a safe grade separated crossing of the A417 in the existing situation. Alternatively, with the

scheme in place, people could cross the A417 safely via the proposed Grove Farm underpass that would be situated approximately 900m east of location B via a new section of bridleway. An additional crossing at location B would therefore only offer journey savings up to around fifteen minutes.

3.4.2 To the south of the A417, Badgeworth FP84 is offset 360m west and Badgeworth FP86 is 100m east. Both of these PRoW are dead-ends where they intersect the A417. Proposed measures to overcome the historical severance of the two PRoW as part of the scheme comprise an improved footpath from Bentham Lane to FP84, and a new path from FP86 to Badgeworth BW87. These measures would create circular routes that guide users to the road crossings at Bentham Lane and Grove Farm.

3.4.3 The pavement, structural and headroom allowances for a pedestrian underpass at location B would be similar to that needed at location A, which would lead to the footpath being approximately 3.8m below the road surface level. Access to the underpass would also need to consist of approach ramps/steps on both sides and require major reconfiguring of Dog Lane.

3.4.4 It would also lead to additional ecological and biodiversity impacts due to the increased footprint that would be required to construct the structure. However, from an ecological perspective, in principle, a pedestrian underpass should be acceptable in this location, on the provision that:

- It strictly uses on-demand lighting only (due to the existing bat activity on either side of that location, proximity to the proposed bat underpass, existing bat roosts and the proposed bat barn); and
- Planting above the portals of the underpass remains continuous so that the underpass does not create a gap in the landscape and habitat connectivity is retained along either side of the A417.

3.4.5 As at location A, the underpass at location B would be an enclosed space and people's safety would be a concern in addition to an associated and increased risk of anti-social behaviour.

3.4.6 As with a crossing at location A, a crossing at location B would lead to the need for additional land being required for the scheme, that would impact on the Flyup 417 Bike Park business given the location of its assets in this area. The extent to which land is required and its associated impacts on that business would require design development work and consultation, but the likely impact is expected to be greater at location B when compared with the likely impact at location B.

3.4.7 The proposed A417 highway and embankment already affect the Flyup 417 Bike Park business and at location B a new PRoW adjacent to the embankment would be needed and would exacerbate the adverse impact on their landholding and commercial operations. Reconfiguration of off-road bike tracks would be needed which would be costly and undoubtedly raise valid security concerns if a new PRoW crossing were to be proposed on the land.

3.4.8 The Flyup 417 Bike Park business has made it clear through engagement that it would object to any measures that would increase walking, cycling or horse riding on its land, with concerns about safety and impact on its commercial operations.

3.4.9 A risk of further objection from the landowner as a statutory consultee would carry weight at the expected examination of the Development Consent Order application.

3.4.10 Any additional land take would also reduce the ability to provide enhancements to biodiversity as a result of permanent loss of habitat(s).

3.4.11 It is estimated the crossing would cost up to £1 million. As such, the solution is likely to offer very poor value for money.

3.4.12 Through engagement with the WCH TWG, an alternative crossing for location B has been suggested, utilising the proposed bat underpass that would be provided as part of the scheme.

Option to utilise the proposed bat underpass

3.4.13 Recent bat survey results show a requirement for a bat underpass at ch 1+100. That is situated approximately 360m east of location B. Figure 3-3 shows the proposed location and local context.

3.4.14 Providing appropriate and effective bat flight mitigation at this location is a legal duty and the proposed bat underpass at Crickley Hill Farm is essential mitigation as part of the design.

3.4.15 Assessment has been undertaken to consider the potential to provide access for people through or near the proposed bat underpass.

3.4.16 The decisions affecting whether to accommodate people are based on biodiversity, access and engineering issues, which are considered below.

3.4.17 Ecological surveys in this area identify several species of bats, including rarer species such as lesser horseshoe bats (which are particularly vulnerable to traffic collisions).

3.4.18 Ecologists, working collaboratively with the environmental regulators, confirm the bat underpass should be unlit and sufficiently large for bats to travel through, and the length of the bat underpass should be minimised.

3.4.19 Some bat species are very sensitive to light and installing any form of permanent or temporary (e.g. motion sensor) lighting can prevent bats from moving through the landscape.

3.4.20 Routes in rural areas primarily used for recreation are not generally lit, but Highways England requires underpasses to be lit where there is a perceived risk to personal security.

3.4.21 Traditional options for lighting would include low level, warm ambience and triggered via motion sensors. However, in this location, the number and vulnerability of bat species makes lighting of any sort unacceptable.

3.4.22 Ecologists recommended an appropriate 200m lighting exclusion zone around the bat underpass.

3.4.23 Existing bat movements dictate the location of the proposed underpass and it would not align with any existing or historical road crossing for people. On the southern side of the A417, the bat underpass would not connect with any PRoW

although on the northern side it would intersect the proposed east-west bridleway between Dog Lane and Cold Slad Lane.

3.4.24 The proposed bat underpass would have an appropriate width of 3m and height of 3m. A skew alignment gives a structure length of 52.5m beneath the A417 mainline carriageway. The longitudinal gradient of the structure falls towards the realigned Tributary of Norman's Brook and reduces potential flood risk to Cold Slad Lane.

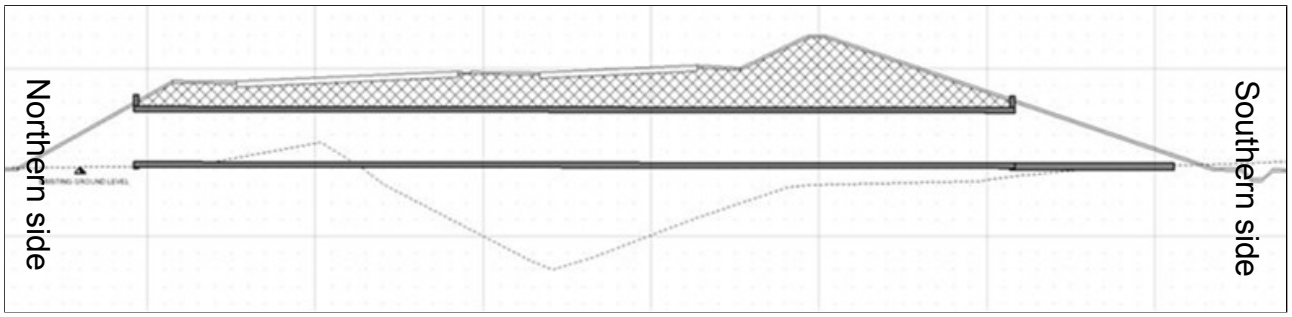
3.4.25 The entrances to the bat underpass would tie-in to the existing ground levels on both the southern and northern sides, as shown in Figure 3-5 below. The southern side would require a new PRoW that straddles the tributary of Norman's Brook; the northern side would tie-in to the bridleway between Dog Lane and Cold Slad Lane. Based on a walking speed of 1.2m/s, it would take approximately 43 seconds to walk through the underpass from one end to the other.

3.4.26 The underpass would be an enclosed space and, if people were permitted to use the underpass, their perception of safety would be heightened. It seems unlikely from the dimensions required that daylight would penetrate the full length of the underpass and there would be no through visibility. A lack of natural light leads to fear and intimidation and people may be deterred from using the underpass even during daylight hours.

3.4.27 If the underpass is not maintained sufficiently, leaf debris is likely to accumulate leading to slips and falls because people won't be able to see where they are walking. Walkers not familiar with the area are unlikely to have a torch with them whatever the time of day, and without daylight penetration or artificial lighting, the underpass would be unsafe for people to use.

3.4.28 There would also be an associated and increased risk of anti-social behaviour given the lack of lighting and length of crossing.

3.4.29 It appears feasible in engineering terms to design access for people to and through the bat underpass, or a new pedestrian underpass in close proximity. However, for the ecological and safety reasons outlined above, the bat underpass cannot accommodate people and a separate pedestrian underpass cannot be accommodated in close proximity (within the recommended 200m exclusion zone) to the bat underpass.



Source: Structure Options Report - Bat Underpass (40052), HE551505-ARP-SMN-X_XX_ XXXX_X-RP-C-000001, P03.1

Figure 3-5 Longitudinal section of the bat underpass

3.5 Underpass near Location C

3.5.1 A new underpass offset from the bat underpass considered above could potentially provide an additional dedicated crossing point for pedestrians between the bat underpass and proposed Grove Farm underpass.

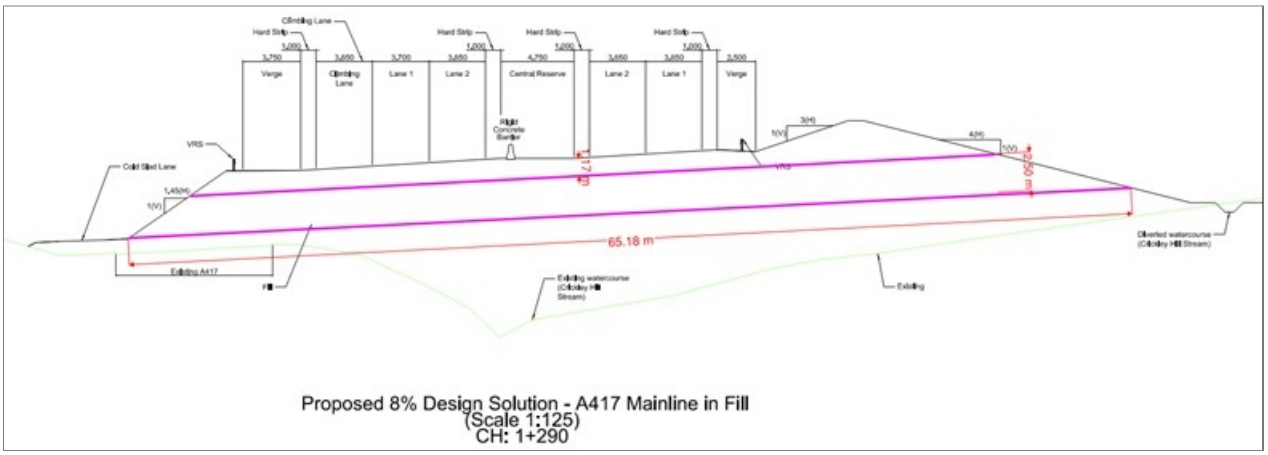
3.5.2 The proposed crossing at Grove Farm is situated approximately 560m from location C. An additional crossing at location C would therefore only offer journey savings up to around eight minutes.

3.5.3 The location of an additional crossing at location C would be midway between the bat underpass and Grove Farm underpass, and could connect to Badgeworth FP86.

3.5.4 The location of an additional crossing at location C would be approximately 65m east of the bat underpass.

3.5.5 Initial investigations show that an underpass in this location may be physically possible, although this would result in a long, dark underpass. Figure 3-6 below shows a potential arrangement.

3.5.6 The underpass would be similar in design to the bat underpass. It would also be an enclosed space and the perception of safety would be heightened. It seems unlikely from the dimensions required that daylight would penetrate the full length of the underpass and there would be no through visibility. If the underpass is not maintained sufficiently, leaf debris is likely to accumulate leading to slips and falls. Artificial lighting would be required to help address potential safety, fear and intimidation risks, with potential additional risk of anti-social behaviour.



Proposed 8% Design Solution - A417 Mainline in Fill
(Scale 1:125)
CH: 1+290

Figure 3-6 Pedestrian underpass at ch 1+290

3.5.7 The underpass at location C would present reduced engineering risks compared to locations A and B given the more favourable gradient and associated conditions at this section of Crickley Hill. It would allow for appropriate height clearances to accommodate walkers.

3.5.8 The underpass would be in relatively close proximity to the already proposed Grove Farm underpass and therefore would only reduce a crossing from Badgeworth FP86 by up to 560m or circa eight minutes' walk.

3.5.9 Furthermore, the additional crossing would be situated within the recommended 200m exclusion zone of the bat underpass, which would raise significant risks

associated with providing appropriate and effective bat flight mitigation at this location.

3.5.10 It would also lead to additional ecological and biodiversity impacts due to the increased footprint that would be required to construct the structure. Any additional land take would reduce the ability to provide enhancements to biodiversity as a result of permanent loss of habitat(s). Furthermore, a crossing or near location C would be immediately adjacent to (if not within) Haroldstone Fields potential Local Wildlife Site. Whilst this is a non-statutory site that is yet to be officially designated, it is to be treated in the same way as a Local Wildlife Site, which have been designated by the local planning authority and is protected through local planning policies as they support important habitats and/or species of nature conservation value within the county.

3.5.11 It is estimated the crossing at location C would cost up to £500,000, less than the other options considered given the more favourable engineering conditions. As such, the solution is likely to offer poor value for money.

4 Policy position

4.1.1 Consistent with paragraph 3.19-3.22, it is stated in paragraph 5.203-5.206 of the NPSNN that the applicant should have regard to policies set out in local plans and should consult the relevant highways authority and relevant local planning authority as appropriate, regarding the proposed schemes' potential impacts on transport. Any reasonable opportunities to support other transport modes in developing infrastructure must be considered by the applicant, and evidence that they have used reasonable endeavours to address any existing severance issues that act as a barrier to non-motorised users should be provided. Additionally, it is stated that if a scheme requires an EIA and is likely to have significant impacts on transport networks, the ES should describe those impacts and any mitigating commitments.

4.1.2 It is stated in paragraph 5.215 that mitigation for schemes should be proportionate, reasonable, and focus on promoting sustainable development. Development that would worsen accessibility should be mitigated as much as much as reasonably possible, with a very strong expectation that impacts to non-motorised users should be mitigated.

4.1.3 As set out in the Consultation Report (Document Reference 5.1), Highways England has engaged with the local highway authority, GCC, and the relevant local planning authorities, Tewkesbury Borough Council (TBC) and Cotswold District Council (CDC), throughout the development of the scheme. This has included non-statutory engagement and consultation, such as technical or specialist meetings, as well as formal statutory consultation in 2019 and 2020, under section 42(1)(b) of the Planning Act 2008 (the Act). This engagement has taken place with the authorities both separately and together (as the 'Joint Councils') as appropriate and the position of the Councils' and Highways England following the engagement undertaken to date is reflected in the Statement of Common Ground with the Joint Councils (see Statement of Commonality, Document Reference 7.3).

4.1.4 As set out in the Consultation Report (Document Reference 5.1), Highways England has also engaged with individuals and organisations with an interest in walking, cycling and horse riding (non-motorised users) throughout the development of the scheme. This has included non-statutory engagement and consultation through a WCH TWG, as well as formal statutory consultation in 2019 and 2020, under section 42(1)(b) of the Act. The position of the WCH TWG following the engagement undertaken to date is reflected in the Statement of Common Ground with the WCH TWG (see Statement of Commonality, Document Reference 7.3).

4.1.5 In relation to impacts on the transport and PRoW networks, Highways England has specifically engaged with GCC on such matters, as the relevant authority for those networks in the county.

4.1.6 ES Chapter 12 Population and Human Health (Document Reference 6.2) considers the effects of the scheme on the surrounding population including in relation to the transport network and access for walkers, cyclists and horse riders, during both construction and operation of the scheme.

4.1.7 ES Chapter 12 identifies that during construction of the scheme, accessibility to the existing road network and public transport would not be affected significantly.

4.1.8 It identifies that no operational public transport routes or operational bus stops would be affected by the scheme. It does recognise that there would be slight adverse effects on users of PRoW during construction, with Highways England seeking to mitigate adverse effects through its PRoW Management Plan contained in Annex F of ES Appendix 2.1 EMP (Document Reference 6.4).

4.1.9 It is identified that construction would result in impacts on a number of PRoW due to diversion and disruption, subsequently affecting the availability of options for active travel. The PRoW Management Plan sets out how impacts on PRoW would be managed during construction, in which Highways England intends to keep the majority of PRoW open via local management, early re-provision and/or use of short-term, temporary closures. Realignment or diversion of local routes is proposed, utilising new side roads, overbridges and junctions where possible to maintain access for users. This would enable local communities to maintain access to active travel options during the construction phase, albeit inconvenienced for short periods.

4.1.10 During the operation of the scheme, ES Chapter 12 concludes that the resulting improved travel conditions would offer indirect benefits to people using the PRoW network and accessing other modes of transport. As is set out in the Equality Impact Assessment that has been prepared for the scheme (Document Reference 7.8), it would reduce congestion, improve safety and enhance the PRoW and WCH network in the area, which would improve access and travel conditions for all.

4.1.11 The scheme design has sought to identify opportunities for improving PRoW options around the proposed A417 and provide options for active travel for more people, including vulnerable users such as children and older people. In addition, car parking is to be provided with disabled provision near The Golden Heart Inn in close proximity to the existing A417. This would be associated with a PRoW which is segregated and tarmacked, making it suitable for wheelchairs and mobility scooters.

4.1.12 The scheme has also sought to address existing severance issues that act as a barrier to non-motorised users through the measures set out in the PRoW Management Plan. For example, the Grove Farm underpass would connect existing and new PRoW which would provide a grade separated north-south crossing of the existing A417 where there is evidence of pedestrians making dangerous attempts to cross the highway at grade.

4.1.13 With the scheme in place there would be multiple grade-separated crossings including the Grove Farm underpass, Cotswold Way crossing, Gloucestershire Way crossing, Cowley overbridge and Stockwell overbridge. This would provide a safer way for people to move around the area.

4.1.14 Overall, it is considered that the scheme meets the requirements of the NPSNN in relation to its impacts on transport networks, the mitigation of impact and reasonable opportunities for enhancement, and use of reasonable endeavours to address historic severance for WCH.

5 Conclusion

5.1.1 Survey data confirms the linear demand to walk and cycle along the existing A417 corridor. The scheme would retain the linear route with a proposed new bridleway between Dog Lane and Cold Slad Lane.

5.1.2 Walkers and equestrians would be able to cross the A417 safely at the proposed new Grove Farm underpass. The Grove Farm underpass is appropriate mitigation and enhancement for the historical fragmentation of the existing crossing at location C and D (see Figure 2-3). This would help address existing severance that could act as a barrier to non-motorised users.

5.1.3 ES Chapter 12 concludes that the scheme would provide a significant benefit to WCH as a result of its proposals for PRoW and local routes.

5.1.4 An additional intervention at locations A and/or B (see Figure 2-3) would require an additional structure to provide a grade separated and safe crossing. The definitive map shows no formal crossing of the A417 at either location A or location B, which were severed and should have been formally extinguished as part of the previous scheme (as agreed with GCC). Any additional crossing would comprise enhancement as part of the scheme and is not essential mitigation.

5.1.5 An additional crossing at location A or C would only offer journey savings up to around eight minutes. An additional crossing at location B would only offer journey savings up to around fifteen minutes.

5.1.6 The provision of pedestrian crossings at locations A and B would require significant engineering works with a major realignment of Dog Lane to the north and disruption for the Flyup 417 Bike Park business to the south. This would also involve additional land take, additional cost and result in additional adverse environmental impacts when compared to the scheme.

5.1.7 Furthermore, the observed numbers of users along the northern and southern sides of the A417 do not support provision of an additional crossing between the existing Witcombe Court underbridge (at Bentham Lane, to the west) and the proposed Grove Farm underpass (to the east). Potential growth in the numbers of users and latent demand is unlikely to affect the need for a new crossing.

5.1.8 An additional crossing at locations A and/or B are considered to be unnecessary given the proximity to Witcombe Court underbridge and collected survey data, unacceptable given the likely effects on land, property and the environment, and would be poor value for money with a significant estimated cost of up to £1 million.

5.1.9 An additional crossing at location C is considered to be unnecessary given the proximity to the proposed Grove Farm underbridge and unacceptable given it would present significant risks to essential mitigation proposed for bats It would also offer poor value for money with a cost estimate of up to £500,000.

5.1.10 Overall, it is considered that the existing provision and that proposed with the scheme will provide effective mitigation of impact and reasonable opportunities for enhancement. Reasonable endeavours have been made to address historic severance for WCH and on balance it is considered that the scheme would meet the requirements of the NPSNN.