BANWELL BYPASS

Environmental Statement

HIF Banwell Bypass and Highways Improvements Project

Environmental Statement Chapter 3 - Alternatives Considered

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Contents

3 Alternatives Considered

3.1 Introduction

3.1.1 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017/571 ("the EIA Regulations") are the regulations which govern the preparation of an environmental statement ("ES"). Part II of Schedule 4 of the EIA Regulations state that an Environmental Statement ("ES") must include "*a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment*."

3.1.2 This chapter presents a summary of the reasonable alternative options considered and describes the design development carried out on the Preferred Option to further reduce the impact of the Scheme on the environment, enhance the landscape and maximise the benefit / cost ratio.

3.1.3 Reference should be made to ES Volume 1 Chapter 2 – Scheme Description, which provides a detailed description of the Scheme. Specific options considered for the mitigation measures identified as part of this Environmental Impact Assessment (EIA) are outlined within the relevant chapters included within this ES.

Scheme overview

3.1.4 The following section provides a brief description and overview of the Banwell Bypass and Highways Improvements Project.

3.1.5 The Scheme would comprise the following distinct elements:

a) a bypass of the village of Banwell (referred to as the "Banwell Bypass");

b) a route connecting the A371 at Castle Hill and the A368 at East Street (referred to as the "Southern Link"); and

c) Mitigation and enhancement measures, which broadly consist of the following:

- *Environmental mitigation and enhancement measures in connection with the Banwell Bypass and the Southern Link*, examples of which include (but are not limited to) flood compensation areas, planting and habitat creation, attenuation basins etc.
- *Placemaking improvements within Banwell*, comprising mitigation and enhancement measures to the public realm; and
- Improvements to the wider local road network in Sandford, Churchill and Winscombe.

3.1.6 Together, these elements comprise the "Scheme". Each element as listed is described in more detail in ES Volume 1 Chapter 2 – Scheme Description.

3.2 Historical Background

3.2.1 Plans for a transport intervention at Banwell have been under consideration for many years. Details on the history of the Scheme, up to 2000, can be found in Table 3-1. Details of the history of the Scheme after 2000 are set out in the following paragraphs.

Table 3-1 History of the Scheme up to 2000

Year	Historic Detail
1927	Bypass first proposed with a potential alignment being pegged out by local landowners and Parish Council.
1938	First formal proposal for Banwell Bypass.
1980	Banwell Bypass listed in the County of Avon Structure Plan as a scheme that could have been constructed after 1990/91.
1982	A371 Banwell Bypass was listed in the Avon County Structure Plan as a major improvement scheme to the primary road network, which was fundamental to the highway strategy. It would continue to be safeguarded even though unlikely to be carried out before 1991 unless integral to a new development and funding becomes available from developers.
1982	The Sandford bypass and Churchill bypass were deleted as they were no longer required as part of the primary road network.
1988	Banwell Bypass was included in the Avon County Structure Plan (first amendment) as a major improvement to the primary road network to be programmed for construction until 1996.
1989	The Avon County Structure Plan key diagram shows the Banwell Bypass as proposed and the Winscombe Bypass as safeguarded.
1994	The Avon County Structure Plan included the Banwell bypass as major improvement to the primary network programmed for construction start in the period until 2001.
1994	Avon Area Transport Policies & Programme Submission for 1996/1997 – listed as a major scheme to address severe environmental problems in Banwell due to the intrusion of traffic, especially heavy commercial vehicles. Construction of a bypass would provide considerable relief to the village and ease the flow of traffic using the A371/A368. A construction start was programmed for 1999/2000.
1996	Transport Policies and Programme Submission for 1997/1998 – A bypass for Banwell was identified in the transport plan, the Avon Structure Plan, the Mendip Hills Local Plan and the Woodspring Local Plan. Detailed route studies have been proposed for many years although insufficient funding has been available. A comprehensive study was proposed to re-examine the need for the bypass as well as important issues such as environmental impacts and road safety implications. As any such study would have wider implications, the study would encompass the entire M5/A38 corridor between Jct 20 and 22 of the M5. This study was programmed to start autumn/winter of 1996/1997 with traffic surveys undertaken in 1997/1998. Final report published winter 1997/1998.
1997	Transport Policies and Programme Package Bid for the Avon Area 1998/1999 – Listed under major schemes. A study to identify options including alternatives to road building was in progress. Assessment of the options was unlikely to be before 1998/99 because of resource constraints.
1998	Transport Policies and Programme Package Bid for the Avon Area 1999/2000 – listed under major schemes. A study to assess options including alternatives to road building was programmed for 1998/1999.

2000 - North Somerset Local Plan

3.2.2 The construction of the Banwell bypass was identified to provide considerable relief to the severe environmental intrusion caused by through traffic within the village. Despite a weight restriction order operating in the village's narrow streets, a bypass was considered to be the only solution. Although the bypass did not feature in the former Avon County's five-year programme the Structure Plan indicates it was intended to be completed before 2001. The previous local plan for the area, the Mendip Hill's Local Plan, safe-guarded the route for the bypass and this was carried forward without modification in the North Somerset Local Plan.

2000 - North Somerset Local Transport Plan

3.2.3 The Local Transport Plan safeguarded an alignment for a bypass of Banwell to remove through traffic from the village. North Somerset Council appointed consultants to undertake a study of the bypass and other options using the New Approach to Appraisal (NATA) in August 2000 for completion in 2001.

2000 – Banwell Area Transport Study

3.2.4 A Banwell Area Transport Study (BATS) was commissioned in 2000 to assess transport options for the Banwell area. This study considered public transport interventions as well as highway-based solutions.

Conclusion of BATS Study

3.2.5 The BATS study identified that improvements to public transport in combination with comprehensive traffic management would be unlikely to remove sufficient vehicles to have a noticeable effect on traffic volumes in Banwell. A modal transfer of 10% from private cars to public transport as a result of the proposed improvements would remove a maximum of 28 vehicles from the centre of Banwell. Traffic management through the introduction of traffic signals in Banwell would not be feasible with the levels of traffic within Banwell.

3.2.6 The Final Study Report concluded that a bypass route to the north of Banwell would address the study objective to reduce congestion through the village. This recommendation forms the basis for the route that is currently safeguarded for planning purposes within the NSC Local Plan.[1] 2006 – Greater Bristol Strategic Transport Study

3.2.7 In 2006, the Greater Bristol Strategic Transport Study (GBSTS) (Atkins, 2006) was conducted to review potential interventions which would improve strategic transport movements into and out of the greater Bristol region. One of the options considered within this study was a Banwell, Churchill and Sandford bypass. Due to funding availability, early assessments of this option considered a phased approach to bypass delivery.

3.2.8 The GBSTS study appraised a number of options to provide relief to the villages and identified that the overall Net Present Value (NPV) was -£2 million with a Benefit to Cost Ratio (BCR) of 0.96. The scheme was therefore considered to have local rather than strategic merits and was not included in the GBSTS strategy.

2007 – North Somerset Replacement Local Plan

3.2.9 The Replacement Local Plan amended the safeguarded route formerly reserved for they bypass – which ran close to the village on its north side – and has reserved instead a line running further to the north, with a separate line to the east accommodating north-south movements. This amendment was based on the outcome of the Banwell Area Transport Study (BATS)

3.2.10 This safeguarded route is shown in Image 3-1, and is protected by planning policy DM20.

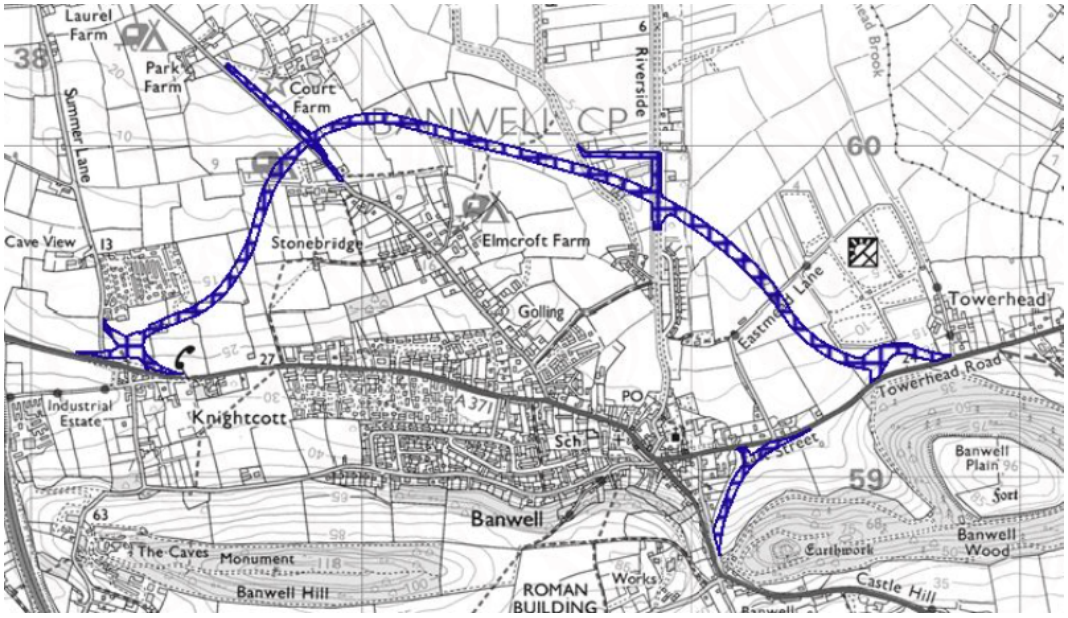


Image 3-1 Route alignment, safeguarded in the 2007 Replacement Local Plan (© NSC – Policies Map)

2018 - Options Appraisal Study

3.2.11 In 2018, an options appraisal study was conducted to review potential route alignment options for the provision of a new highway link. The link would connect a potential strategic development location for housing to the existing highway network. The purpose of the appraisal study was to assess whether the safeguarded route was still the most appropriate alignment for the new highway. The Option Selection Report hereafter referred to as the 2018 OSR – recommended a route referenced as Option 2. The Option 2 alignment broadly aligned with the route currently safeguarded in the Local Plan. The 2018 OSR concluded that this route should continue to be the preferred route subject to further technical assessments including detailed traffic and hydraulic modelling.

2021 Options Appraisal

3.2.12 The 2021 Options Appraisal (refer to ES Volume 3 Appendix 3.A) built upon the appraisal undertaken as part of the 2018 OSR. Since the publication of the 2018 OSR, the planning and legislative context relating to building roads, especially in the context of rising carbon/greenhouse gas emissions, has

changed. Therefore, further assessment of the route options previously considered was required.

3.2.13 The 2021 OSR sought to confirm whether the conclusions reached in previous Scheme reporting are still valid, and whether they accord to current local and national policies and legislation.

3.2.14 The appraisal comprised two stages:

a) review of a long list of options; and

b) further appraisal of the shortlisted options.

3.2.15 A summary of the long list of options considered within the 2021 Options Appraisal, and the summary of the decision, is outlined in Table 3-2.

Table 3-2 Summary of long list of options

Ref	Option	Description	Summary of decisions
A	Do nothing (Baseline)	No improvements above and beyond any committed / likely development in the area.	Would not solve the existing issues within Banwell and would not support the delivery of housing within the wider region.
B	Reduce the need to travel	Reduce the need to travel by; a) supporting remote working; b) locating more amenities closer to where people live; c) improving access to fast and reliable broadband; and d) encouraging deliveries to use more sustainable travel choices especially for 'last-mile' deliveries.	**Option was discounted** as a stand-alone option, however reducing the need to travel would be complementary to other Options.
C	Public transport and sustainable travel choices	Improvements considered within the wider study area to public transport provision, service timetabling, improved facilities etc. These improvements have been combined with active travel opportunities such as walking and cycling.	**Option was discounted** as a stand-alone option, however improvements to public transport and active travel could be complementary to a different Option to improve overall travel options in the area.
D	Road improvements through Banwell	The widening of existing roads and/or junctions through Banwell. The widening proposals considered would require land being allocated to facilitate the wider road.	**Option was discounted** as it does not facilitate the new housing at the proposed strategic development locations, and would result in numerous adverse impacts within Banwell (e.g. noise, air quality, etc.)
E	Bypass of Banwell, Churchill and Sandford	This option has been considered and would include a longer bypass being implemented for Banwell, Churchill and Sandford (between the M5 and A38). The bypass would be located to the north of the villages.	The larger scheme would result in more harm to the environment. It would be unaffordable within the available budget. As such, this **option was not taken forward** to a shortlist.
F	Southern bypass of Banwell	A bypass route to the south of Banwell. This option considers a bypass to the south of the village, south of Banwell Castle, linking up with the A368 east of Banwell fort. The route would pass through the Mendip Hills AONB.	**Option was discounted** given the highly constrained nature of the land to the south of Banwell. A bypass in this location would have considerable adverse environmental impacts on biodiversity and landscape.
G	Northern bypass of Banwell	A bypass route to the north of Banwell. This option would involve a bypass to the north of the village, passing between the A371 and A368 via Wolvershill Road. Any Northern bypass route would include a southern link between A368 to A371 Castle Hill.	This option scores well against the scheme objectives and WebTAG criteria. **Option was taken forward for further assessment.**
H	National Grid haul route	The temporary road associated with National Grid's Hinkley Point C Connection Project was considered as an alternative to the Southern Link. This option would need to be provided in combination with a bypass as it would not address congestion issues in Banwell on its own. This haul route has been constructed on a temporary basis and is subject to its own planning permission. Castle Hill and Dark Lane would remain open for traffic between Banwell and Winscombe.	**Option was discounted** as the haul route has been constructed on a temporary basis and the planning permission requires that it is returned to its former condition when work is complete. It would have adverse impacts to the environment if permanent. Congestion issues would still exist through Banwell.

3.2.16 Of the long list of options, a Northern Bypass was the only option carried forward to the short list for more detailed optioneering and appraisal.

3.2.17 The following options were taken forward based on the Northern Bypass option, refer to Image 3-2.

a) Northern Route 1

b) Northern Route 2

c) Northern Route 3

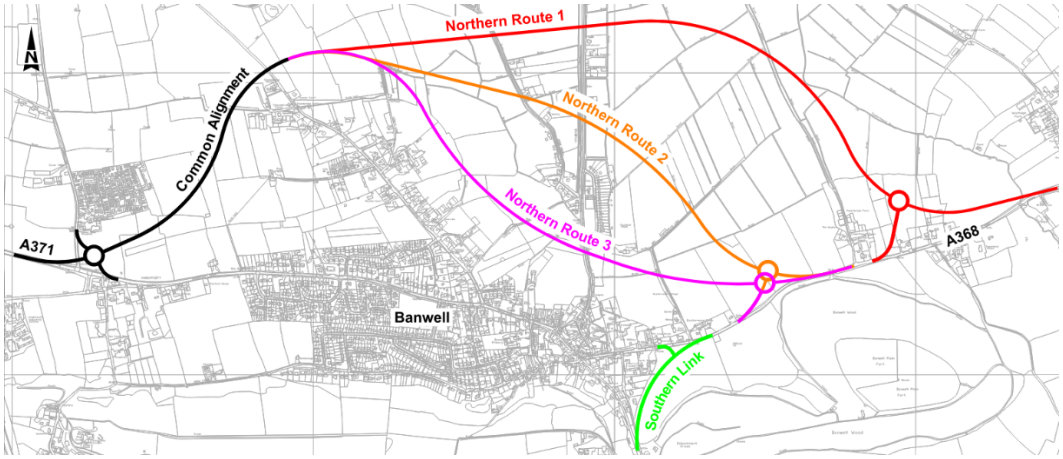


Image 3-2 Shortlisted Route Options

3.2.18 The outcome of the option appraisal concluded that the Northern Route 2 was the favoured Option and was therefore taken forward as the Preferred Option. The Northern Route 2 bypass option, together with the Common Route Alignment to the west of the bypass route option, and the Southern Link Road, was assessed as the most appropriate route when balancing social and cultural, economic, and environmental criteria as well as the Scheme Objectives. The appraisal method and results are reported in the 2021 Options Appraisal, refer to ES Volume 3 Appendix 3.A.

3.2.19 The preferred route has been approved by the NSC Executive Member (Decision No. 21/22 DP 213 dated 7 October 2021) following the Options Appraisal and public consultation.

Additional Route Option 2a

3.2.20 Public consultation was held between 5 July and 16 August 2021 to gather feedback to help inform the decision making as part of the 2021 Options Appraisal.

3.2.21 During the public consultation, an alternative route was proposed by a member of the public. An Options Appraisal Addendum (refer to ES Volume 3 Appendix 3.B) was prepared to assess this alternative route option. The alternative route option – considered to be a hybrid of Routes 1 and 2 - is referred to as “Route 2A” and is shown as proposed by the member of the public on Image 3-3.

Image 3 - 3 Alternative route proposed during public consultation, referred as 'Route 2A'.

The outcome of this Options Appraisal Addendum is that Route 2 remains the favoured route option. The Options Appraisal Addendum concluded that the proposed next steps and further considerations, as reported in section 11.4 of the 2021 OAR, remain current and valid...

3.3 Banwell Bypass Design Development

3.3.1 Since the confirmation of the Preferred Route in October 2021, design development has continued to improve the sustainability and buildability of the Scheme and reduce its impacts on the environment and climate. The following paragraphs discuss the amendments that have been made as the Scheme has developed following public consultation and engagement, technical working group meetings, discussions with Statutory Environmental Bodies, and with landowners.

Bypass Alignment

3.3.2 The alignment has been reviewed in detail and the following amendments and alterations have been implemented:

a) Towards the eastern end of the Scheme, the horizontal alignment of the route has been moved as far east as possible (towards the Towerhead Farm Solar Farm). This has the benefit of reducing severance of agricultural fields and minimises impacts on properties at Riverside Crescent;

b) The horizontal alignment has been amended to minimise as far as is reasonably practical the impacts of the Scheme on playing fields associated with Banwell Football Club as well as a traditional orchard located along Riverside;

c) The Bypass alignment has been refined to reduce the skew of watercourse crossings. This reduces overshadowing and ecological impact;

d) The horizontal alignment at the western roundabout has been relocated along the A371, to reduce the impact on Summer Lane Park Homes;

e) The horizontal alignment has been moved further north at Riverside to minimise impact on the landfill site to the west of Riverside; and

f) The position of the Eastern Junction has been amended to avoid any direct impact on the North Somerset and Mendip Bat Special Area of Conservation (SAC) and ancient woodland at Towerhead.

Southern Link Alignment

3.3.3 The alignment of the Southern Link has been reviewed in detail and the following amendments and alterations have been implemented:

a) The horizontal alignment of the Southern Link has been moved further east. The route has been located further away from properties on Dark Lane, has environmental benefits (less imported fill and therefore reduction in capital carbon), and reduces the need for retaining structures on the turning heads located on Castle Hill and Dark Lane;

b) The vertical alignment has been amended from 9% to 8%. Reducing the gradient has safety benefits, whilst also providing environmental benefits (less imported fill, and therefore a reduction in capital carbon);

c) The position and layout of the junction has been refined to minimise construction impact, minimise impact on property accesses, and allow for traffic capacity at the junction onto East Street.

Junctions

Summer Lane and Well Lane Junctions

3.3.4 Three options have been considered for the Summer Lane / Wells Lane junction layout at the western end of the Scheme. These include do nothing, signalisation with existing layout, and signalisation with amended layout as illustrated in Image 3-4.

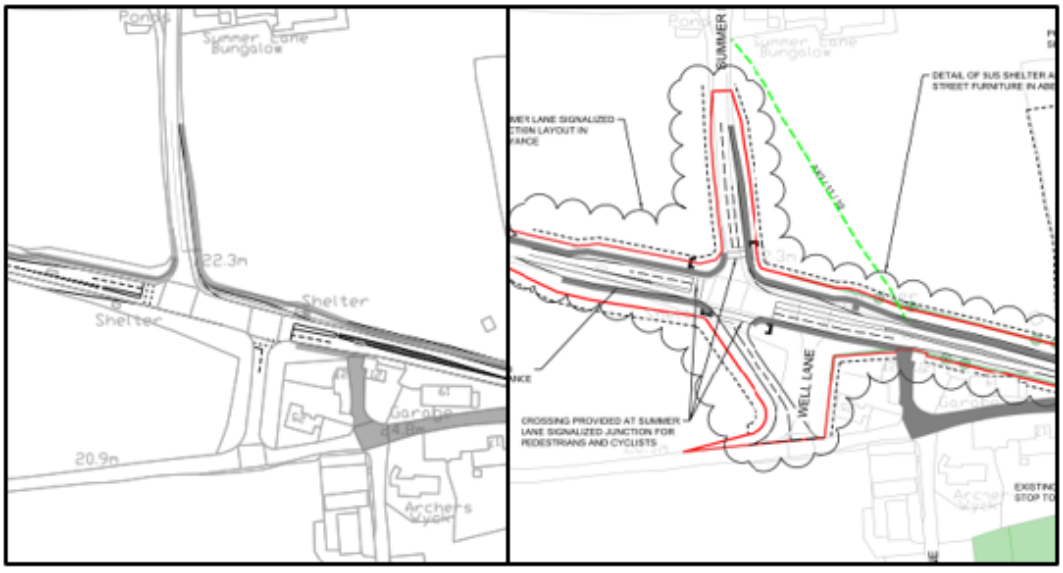


Image 3-4 Summer Lane and Well Lane junction considerations

3.3.5 The preferred arrangement is to signalise the junction with an amended layout. The A371 running east-west would remain largely unchanged. Summer Lane would stay on its existing alignment, however additional lanes for capacity would be added on the approach to the A371. The alignment of Wells Lane would be amended and would be skewed slightly westwards from its existing alignment. The chosen option would also include shared use crossings at each arm for walkers, cyclists, and horse riders to cross when traffic is stopped by the traffic signals.

3.3.6 No defined bus priority is provided at this junction given that works relate to improving the future operating capacity of the junction.

3.3.7 This option was chosen for the following principal reasons:

a) Signalisation is required to both regulate the traffic flow and to provide safe walking, cycling and horse-riding crossing facilities on the carriageway. Otherwise, the existing junction type would operate over-capacity in future years due to the predicted increase in traffic.

b) Signalisation was explored on the existing layout of Wells Lane and Summer Lane, however the separation of Wells Lane and Summer Lane meant that the phasing of traffic lights would result in significant queuing delays (around 5 mins in the AM and PM peaks) along the A371 arms with the future housing in place.

c) Amending the skew of Wells Lane to be adjacent to Summer Lane allows for the lights of the junction to be phased in a manner that traffic from both Wells Lane and Summer Lane was released simultaneously, reducing the delay time on the A371 arms of the junction. This would alleviate the queuing at the junction.

Banwell West Junction

3.3.8 Options have been considered for the Banwell West Junction.

3.3.9 These include the consideration of roundabouts in various locations, as illustrated in Image 3-5, and a traffic signalised junction.

Image 3-5 Banwell West Junction Option Locations

3.3.10 A signalised junction at the western junction at Summer Lane, was discounted as it would have resulted in the bypass being much closer to Summer Lane Park Homes in order to maintain the required horizontal curvature through the junction for vehicles travelling at higher speeds.

3.3.11 This would result in adverse environmental impacts, mainly noise, air quality and landscape/visual effects, on residents at Summer Lane Park Homes.

3.3.12 A roundabout offers the opportunity to change the horizontal alignment of the bypass over a shorter distance by staggering the arms of the roundabout. Therefore the horizontal alignment of the bypass can be moved further from Summer Lane Park Homes. Whilst a roundabout typically requires greater land take when compared to a signalised junction, this is offset by the overall reduction in the length of the bypass itself.

3.3.13 The roundabout location incorporated into the design would reduce material use as the overall length of the bypass is shorter. In addition, the roundabout location moves the alignment away from the junction with Summer Lane / Wells Road, thereby reducing direct impact on these junctions and the surrounding private means of access. This results in reduced construction carbon due to the reduced volume of material used and reduction in extent of construction work.

3.3.14 The location of the proposed roundabout is approximately equidistant between Summer Lane Park Homes and the outer extents of the village of Banwell.

3.3.15 The design uses more of the existing road and does not impact on the Summer Lane and Well Lane junctions to the west. Positioning the roundabout further east along the A371 maintains access to the existing properties.

3.3.16 No specific bus priority measures are provided at the junction. The traffic flows from the arm leading west from Banwell do not indicate that there would be delays to bus journeys due to queuing at the roundabout.

Wolvershill Road Junction

3.3.17 During Scheme development, the following options were appraised for the Wolvershill Road junction:

a) Full movement junction;

b) Restricted movement on southern arm;

c) Restricted movement on northern and southern arm.

3.3.18 Restricted movement on the southern arm was chosen as the favoured option. In summary, closing Wolvershill Road to the south of the bypass has the following benefits:

a) The reduction in vehicular traffic along Wolvershill Road would increase safety, and perceived safety, for walking, cycling and equestrian users, and as such may encourage more active travel trips to be made between properties on Wolvershill Road (south of the bypass) into Banwell village centre;

b) The reduction in vehicular traffic along Wolvershill Road would improve safety, and perceived safety, for vehicles entering and existing their driveway/properties along Wolvershill Road (south of the bypass); and

c) The reduction in vehicular traffic would reduce traffic noise and improve air quality for those properties immediately adjacent to Wolvershill Road (south of the bypass).

3.3.19 Wolvershill Road to the north of the bypass would have sufficient capacity for peak hour flows for the forecast traffic in 2024 and 2039. The road narrowing along Wolvershill Road to the north of the bypass has been assessed as a sensitivity test and is likely to have sufficient capacity for the 2024 traffic forecasts but would

be approaching capacity with queuing for the 2039.

3.3.20 Applying a restriction to the northern arm would have an impact elsewhere on the local road network due to the re-routing of traffic. This would likely cause additional delay on the A370 and A371.

3.3.21 The decision has therefore been taken to prohibit private vehicles from using the southern arm of the junction. Walking, cycling and horse-riding (WCH) users, future public transport provision would still be able to use the southern arm, which would be a bus gate (form to be decided in detailed design). Limited agricultural movements would also be allowed.

3.3.22 The provision of the bus gate, and the decision to allow public transport to use the southern arm, is a form of bus priority provided at this junction. No further measures have been implemented.

3.3.23 The emerging Local Plan considers the future role and function of Wolvershill Road, including opportunities for encouraging active travel and public transport access, however this is not being progressed as part of the Scheme.

Moor Road

3.3.24 Four options were considered for Moor Road. In summary, these were:

a) Option 1 – Vehicular Connection onto Bypass with WCH underpass underneath bypass
b) Option 2 – Vehicular Connection onto Bypass with WCH route underneath Riverside bridge
c) Option 3 – Vehicular Connection onto Bypass with Bridleway only direct connection to Riverside
d) Option 4 – Vehicular and bridleway access connection between Riverside and Moor Road

3.3.25 Option 1 was discounted as it did not provide a direct link between Moor Road and Riverside, which was identified to be a key requirement for the proposed link. This requirement was needed to maintain circular walking, cycling and equestrian routes, as well as to maintain agricultural access.

3.3.26 Option 3 was discounted as it did not provide agricultural access

between Moor Road and Riverside.

3.3.27 In summary, Option 4 is the most favourable solution as it maintained a reasonable route for agricultural users between Moor Road and Riverside. It is a similar route to the existing provision, and therefore does not result in unreasonable diversions.

Riverside

3.3.28 Three options were considered at Riverside. These included the provision of an at-grade junction, the crossing of Riverside over the bypass, and the crossing of the bypass over Riverside.

3.3.29 The preferred arrangement is to elevate the Bypass over Riverside. The Bypass would cross Riverside on an overbridge. This option was chosen for the following principal reasons:

a) Concerns were raised at the 2021 public consultation regarding existing rat-running along Riverside and its perceived use as a shortcut to the M5 Junction 21. There were concerns that the provision of a junction would exacerbate existing rat-running issues. By raising the Bypass over Riverside and omitting a direct connection onto the Bypass, through traffic on both roads acts independently. This option would not exacerbate the existing rat-running from Banwell to M5 Junction 21 which would otherwise have occurred if a junction had been in place at this location.

b) WCH surveys identified that Riverside is frequently used for leisure walks, cycle rides and equestrian rides. It is particularly popular with horse-riders, with bridleway connections along Riverside enabling circular equestrian riding routes in the local vicinity. The omission of a junction / direct connection at Riverside, and the subsequent reduction in traffic volumes as described in a) above, would remove interaction between Riverside WCH users and vehicular traffic. WCH users would not have to navigate a crossing of the Bypass. Overall, this would increase amenity and safety of Riverside for leisure walks, cycle rides and equestrian rides.

c) No junction enables through vehicular traffic on the Bypass and Riverside Road to maintain constant speed. There would be air quality improvements introduced through maintained traffic flow.

d) Whilst elevating the bypass over Riverside results in adverse land impact on either side of the overbridge due to higher and wider earthworks embankments. The provision of a junction, or raising the existing road over the bypass, would have

required a greater footprint and had a direct impact on the River Banwell and properties located along Riverside.

Banwell East Junction

3.3.30 Several different junction options have been considered at this location as summarised below and shown in Image 3-6.

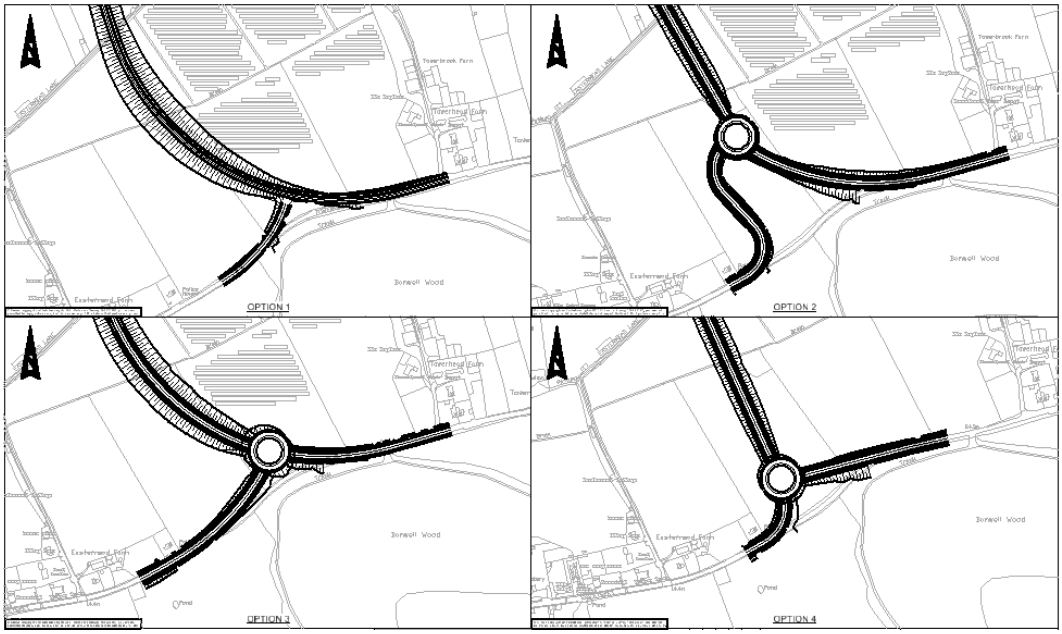


Image 3-6 Junction options considered for Banwell East Junction. Early optioneering did not consider whether junctions would be signalised or unsignalised.

3.3.31 The location of the Banwell East Junction is particularly environmentally and ecologically sensitive. The southern edge of the existing A368, where the bypass ties into the existing network, forms the boundary of the Mendip Hills Area of Outstanding Natural Beauty (AONB). It is also a Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) primarily due to bat roosting in the area. Whilst the bats roost to the south of the A368, their feeding grounds are located to the north of the A368 and as such the Bypass crosses their flight path.

3.3.32 As a result, the junction form for Banwell East Junction was driven primarily to mitigate the environmental / ecological impact of the bypass. The section below provides some discussion around the design development of this junction.

3.3.33 WCH options were discounted for the eastern junction, due to space constraints along the A368 towards Sandford. WCH use

in the vicinity of the junction would also have required the junction to be lit, having adverse ecological and landscape impacts. WCH options are considered in Section 3.5.

3.3.34 No specific bus priority measures have been implemented at this junction.

Junction – T-Junction

3.3.35 An unsignalised T-junction was considered for the junction between the bypass and the Southern Link. This option was discounted as it did not provide enough capacity for the predicted traffic flows on the bypass. It is likely that there would be a large amount of driver frustration for vehicles undertaking the right turn from the Southern Link onto the bypass due to the delay caused by the volume of traffic.

Junction - Roundabout

3.3.36 A three-arm roundabout was considered at a number of different locations in the vicinity (as shown in Image 3-6).

3.3.37 A roundabout would meet the requirements for the predicted traffic volumes and was an appropriate junction form to consider.

3.3.38 The main negative aspects of this junction option is that it requires a large amount of land for construction. The vehicle movements around the roundabout result in a lot of light movements in the direction of Banwell Wood which is a sensitive receptor for bats. The wide footprint of the roundabout would also have adverse impacts on bats crossing the bypass to get to their feeding grounds to the north of the A371. This could result in bats dropping down to road level and potentially being struck by moving vehicles along the bypass.

3.3.39 Provision of a roundabout would require streetlighting, which would have an adverse impact on Bats and the AONB dark skies.

Junction – Traffic Signal Junction

3.3.40 A traffic signal junction, including a ghost island waiting area and dedicated turning lanes, was assessed for Banwell East Junction. The provision of this junction type was assessed for traffic movements and did not result in any adverse traffic impacts when compared to a roundabout.

3.3.41 The provision of a traffic signal junction, with the inclusion of a ghost island, results in a narrower crossing of the bypass for bats along their key north/south flight-line.

3.3.42 The alignment of the traffic signals junction has been refined so that headlights are diverted as best as possible away from the area where the bats roost.

3.3.43 The requirement for street lighting at a traffic signal junction has been designed out, minimising the impacts on bats and the AONB dark skies.

3.3.44 A traffic signal junction was considered the most effective in this location.

Shared Use Path

3.3.45 One of the Scheme's overarching objectives is to provide the opportunity to increase active and sustainable travel between local villages and Weston-super-Mare. This relates to travel by walking, cycling and public transport. This objective satisfies NSC's aims of promoting the use of active travel as a primary means of transport for everyday journeys and promoting a modal shift from private car use.

3.3.46 The shared use path is intended for use by all users (including horse riders). It provides connections into Banwell village via Wolvershill Road, Riverside, and Eastermead Lane.

3.3.47 Various options have been considered for a shared use path around the bypass rout. This would tie into the A371 Safer Roads Scheme being delivered by NSC, and would provide a link eastward from Weston-super-Mare toward the Strawberry Line and into Sandford and Churchill. The detail of the alternatives considered and the reason they were accepted or rejected are included in Table 3-3.

Table 3-3 Alternative WCH routes considered

Options	Description	Taken forward Y/N
General		
Proposals to provide segregation between cyclists and other users (Walkers and wheelchair users)	Route has been designed to appropriate standards, considering the likely user numbers. Shared use of path around the bypass is appropriate.	No.
Bypass around Banwell		
Provision on both sides of the road.	User numbers from WCH surveys, and predicted future users, do not support this. On one side the path would be segregated from the proposed development by the bypass and therefore would not be convenient as an east west connection for the existing village.	No
Route only on the north of the bypass route.	Provides continuity of existing active travel route from Western-super-Mare. Would serve the proposed development north of Banwell. This option has been incorporated into the design.	Yes
Route only on the south of the bypass route.	Would not serve the expected development north of Banwell and would result in a greater number of road crossings, which is less direct for users of the path.	No
Route crosses from north to south of bypass at Wolvershill Junction	Adds unnecessary route crossings of the bypass highway. Is not as direct as continuation of the path around the northern edge of the bypass.	No
Route at top of embankment	This option would increase the footprint of the embankment, increasing construction carbon and materials required for the Scheme. (Refer to	No
Route at toe of embankment	This option would reduce the footprint of the embankment, reducing construction carbon and materials required for the Scheme and provide separation from the road. This option has been incorporated into the design. (Refer to	Yes

Options	Description	Taken forward Y/N
Shared use path from Banwell to Sandford		
Route along A368	Insufficient space within the highway and verge to incorporate route. Would require significant utilities works and disruption of property accesses. Would require crossings at Banwell East Junction, which would necessitate lighting at the junction which in turn would have adverse biodiversity impacts.	No
Route to Sandford (north of solar farm)	Provides a segregated, traffic free route. Extended connection needed from Eastermead Lane to crossing point. Extended length of impact on green field land.	No
Route to Sandford (on track through centre of solar farm)	Provides a segregated, traffic free route. More direct than alternative to the north of the solar farm.	Yes
Shared use path along Southern Link		
Route along Southern Link	Providing a route along the Southern link would increase its footprint, requiring more materials and increasing carbon usage. Route will utilise the existing A371, through Banwell and Castle Hill before re-joining the main highway. This is a more direct route from the west of Banwell to Winscombe, and is a low traffic alternative to the Southern Link	No

Image 3-7 Visualisation showing shared use path (left hand side of image) segregated from the highway.

Ground Improvements

3.3.48 Various options for ground improvement for embankments underlain by the soft soils of the North Somerset Levels have been assessed for the Scheme. These are:

a) Do nothing;
b) surcharged embankments with band drains;
c) partially penetrating band drains;
d) raised drainage blanket;
e) lightweight fill (with no band drains);
f) soil mixing;
g) Controlled Modulus Columns (CMCs) and
h) Piled embankments

3.3.49 Settlement durations in the do-nothing case would be in the region of 10-120 years, and settlement magnitudes of up to 1m are anticipated. This is too great a settlement magnitude and duration, and as such ground improvement is required.

3.3.50 Installation of band drains and surcharging the highway embankment aims to control embankment settlement magnitudes and durations in a manner that is less carbon intensive than other options. As such, this is the primary ground improvement method following options assessment.

3.3.51 As discussed in ES Volume 1 Chapter 2 – Scheme Description, the primary approach to ground improvement that has been assessed in this ES is to install band drains and surcharge the highway embankment. The presence of artesian groundwater has resulted in the need for further monitoring of the artesian groundwater as the band drains could act as pathways for the artesian groundwater to flow up to and out of the base of the embankments. The release of the artesian groundwater may have an impact on the Banwell Spring. As such, dialogue with the Environment Agency (EA) and Bristol Water is ongoing to determine the impact on Banwell Spring based on the findings of the further monitoring.

3.3.52 As a result, alternative ground improvement solutions are being considered to negate the impact on the Banwell Spring and are dependent on the outcome of the ongoing monitoring. These options include Controlled Modulus Columns (CMC) and piled embankments (secondary ground improvement option).

3.3.53 The other options listed in paragraph 3.3.48 were discounted on the basis of material volume and waste, construction programme, construction cost, and carbon/sustainability.

Structures

3.3.54 A number of different forms of overbridge were considered for the proposed bridge structure that crosses Riverside. In summary these are:

a) A wide span overbridge crossing Riverside, the River Banwell, access track and ditch;

b) A narrow span bridge crossing Riverside and the River Banwell, with the ditch crossing through a culvert;

c) A precast arch bridge.

3.3.55 The precast arch bridge resulted in a larger height of overbridge, which impacted on embankment height on either side of the overbridge. This increase in embankment height has an adverse environmental and cost impact.

3.3.56 A narrow span bridge would result in potential impacts on water quality due to disruption of the River Banwell and the unnamed rhyne during construction. It also has construction cost and

programme impacts, as well as ongoing maintenance costs, due to two separate structures being present. As such, this option was discounted.

3.3.57 A wide span overbridge maintains the view underneath the bridge, therefore reducing perceived severance of properties to the north of Banwell from the village. This has been supported by the AONB and NSC Landscape Officer. As such, this was the option chosen.

Lighting Strategy

3.3.58 Road lighting has been considered along the entire length of the Scheme. Due to landscape and ecological concerns, the project team has minimised the extent of road lighting as far as reasonably practical without compromising on road safety. This reduces the impact on the ecology of the area especially for bats, nocturnal animals and any impacts on the North Somerset and Mendip Bat SAC; conserves dark skies in particular in association with the Mendip Hills AONB and reduces the carbon impact of the Scheme. Refer to details of proposed strategy in ES Volume 1 Chapter 2 - Scheme Description.

Road Drainage and disposal of water

3.3.59 Various surface water capture methods were considered during the design development of the bypass. These included consideration of the following:

a) Kerb & gully;
b) Grassed surface water channels;
c) Over the edge drainage; and
d) Filter and combined carrier drains.

3.3.60 The drainage strategy for collecting surface water runoff from the bypass is as follows:

a) Combined kerb and drainage systems collect surface water runoff and feed into swales or, in limited instances where necessary, into carrier pipes in verge.

b) Lined cut-off ditches at the top of cuttings and unlined cut-off ditches at the bottom of embankments will intercept natural runoff. If the natural topography falls away from the road alignment, cut-off ditches will not generally be provided other than to mitigate local flooding risk.

c) Any existing land drains encountered will be intercepted and diverted to the cut-off ditches.

3.3.61 Whilst the inclusion of a swale in the drainage strategy / highway cross-section increases land take and therefore increases the embodied carbon of the Scheme due to importing additional earthworks, on balance it is considered to align with Sustainable Urban Drainage (SUDS) principles and provides potential for biodiversity mitigation. The proposed shared use path running for the entire length of the Scheme would be segregated from the main carriageway by the swale, and as such this segregation from the highway would provide amenity benefit for users. (Refer to Image 3-7).

3.4 Banwell Placemaking Improvements

3.4.1 Reference should be made to ES Volume 1 Chapter 2 - Scheme Description and Planning Document – Placemaking General Arrangement Drawings for a description of the measures included as part of the Banwell Placemaking Improvements.

3.4.2 As a result of the Banwell Bypass, there would be a reduction in traffic through Banwell. Further measures have been considered, as part of the Scheme, in order to encourage traffic onto the Banwell bypass avoiding Banwell itself. The reduction in traffic (and resulting reduction in congestion) through the village could result in higher traffic speeds without mitigation. Further mitigation measures have been considered in order to reduce traffic speed through the village.

3.4.3 The provision of mitigation measures through would discourage vehicles from travelling at higher speeds, whilst also discouraging the use of the road as a through route (instead of the Banwell Bypass).

3.4.4 The reduction of traffic through Banwell due to the provision of the Banwell Bypass provides the opportunity to make improvements to the existing road and public spaces within

Banwell to enhance the historic and urban setting of the village.

3.4.5 As part of the EIA, the impacts of the bypass and Southern Link were identified and options / alternatives to mitigate those impacts were considered. In addition, in order to meet the objectives of the Scheme, options to provide additional enhancement works were also considered.

3.4.6 During the public consultation held between 5 July and 16 August 2021, the following key themes in relation to placemaking were raised by members of the public:

a) Incorporation of traffic measures;

b) Improvements to public transport infrastructure provision;

c) Improvements to active travel provision;

d) Inclusion of green infrastructure (including biodiversity); and

e) Community enhancements.

3.4.7 The following list outlines the opportunities considered and incorporated into the placemaking improvements within Banwell:

- Gateway features at either end of the village– with signage and landscaping;
- Narrowing of the wider sections of the road to encourage slower traffic speeds and facilitate better use of space
- A priority system through the narrow/single lane sections and junction layouts within the village
- Green infrastructure (such as avenue planting, raised planters and wildflower planting);
- Enhanced biodiversity using wildflowers and other planting
- Improved active travel routes and facilities – such as cycleways and footways, additional road crossing points and shared spaces including links back to Weston-super-Mare;
- Provision of cycle parking;
- Creation of more outdoor space for local businesses (such as cafes, and shops);
- Traffic enforcement – such as banning Heavy Goods Vehicles (HGVs) except for access / deliveries;
- Physical traffic calming – such as road markings, traffic tables, shared space;
- Reduced speed limits to 20mph to improve safety;

- Improvement of pedestrian permeability through the widening of existing pavements and the introduction of the new sections of pavement;
- Improved active and sustainable travel on Wolvershill Road; and
- Improvements to public transport infrastructure such as bus stop locations.

3.4.8 Provision of seating area outside the Crafty Cuppa (Now closed) was rejected due space constraints and land ownership issues. Other design options have been rejected in consultation with Banwell Parish Council (due to the likelihood of objection from local residents).

3.4.9 The placemaking measures implemented within the Scheme have been considered and developed to meet the proposed Scheme Objectives, taking into account the outcomes of the Public Consultation and Engagement exercises.

3.5 Banwell Football Club replacement playing fields

3.5.1 The Scheme will directly impact and result in a loss of land currently used as playing fields by Banwell Football Club. As the land is protected by planning policy, it is necessary to provide replacement land in accordance with the requirements of that policy.

3.5.2 A list of seven options for possible replacement land was identified. Four and of those options were sifted at an early stage due to their distance away from Banwell FC grounds. This resulted in three options being considered for detailed assessment. These were:

a) Option 1 – land parcel located directly east of Banwell FC;
b) Option 6 – land parcel located directly south east of Banwell FC; and
c) Option 7 – land parcel located directly south of Banwell FC.

3.5.3 The options assessment was undertaken based on the relevant policy tests/criteria. These were: size of replacement land, specification/quality of replacement land, planning, accessibility, ecology, landscape, and quality of agricultural land.

3.5.4 Option 7 did not satisfy the size and specification required. Whilst Option 6 did satisfy all tests, it is further away from the existing clubhouse and as such Option 1 has been included within the Scheme.

3.6 Improvements to the wider road network

3.6.1 Reference should be made to ES Volume 1 Chapter 2 - Scheme Description and Planning Document -Wider Mitigation General Arrangement Drawings for a description of the measures included on the surrounding road network.

3.6.2 Improvements to the local road network and junctions including the surrounding villages of Churchill, Sandford and Winscombe are proposed to mitigate increases in traffic as a result of the Banwell Bypass and Southern Link.

3.6.3 Increased traffic could result in negative impacts for the following:

a) Road Safety;
b) Severance;
c) Environmental Impact; and
d) Congestion.

3.6.4 During the public consultation held between 5 July and 16 August 2021, the following key themes in relation to the wider road network were raised by members of the public:

a) Congestion through Banwell and in the villages along the A368 and A371 corridors (Churchill, Sandford, Winscombe);
b) Restrict access of HGVs through Banwell, Winscombe and Sandford;
c) Improved connections of walking and cycling, especially from Banwell to the Strawberry line and make Wolvershill Road a safer route for cycling;
d) Safer school routes, especially the implementation of footways between Sandford and Churchill;
e) Implementation of 20mph speed limits in Sandford and/or the surrounding communities; and
f) Impact to horse riding due to the scheme and the opportunity to improve horse riding in and around Banwell.

3.6.5 In order to address these concerns, a range of measures were considered. These are summarised below:

a) Speed enforcement and implementation of speed limits;
b) Carriageway widening;
c) Traffic calming;
d) Active Travel proposals;
e) Improvements to public transport facilities;
f) Placemaking, landscape and ecological improvements

3.6.6 Image 3-8 and Table 3-4 outline the early proposals considered for mitigation to the wider road network.

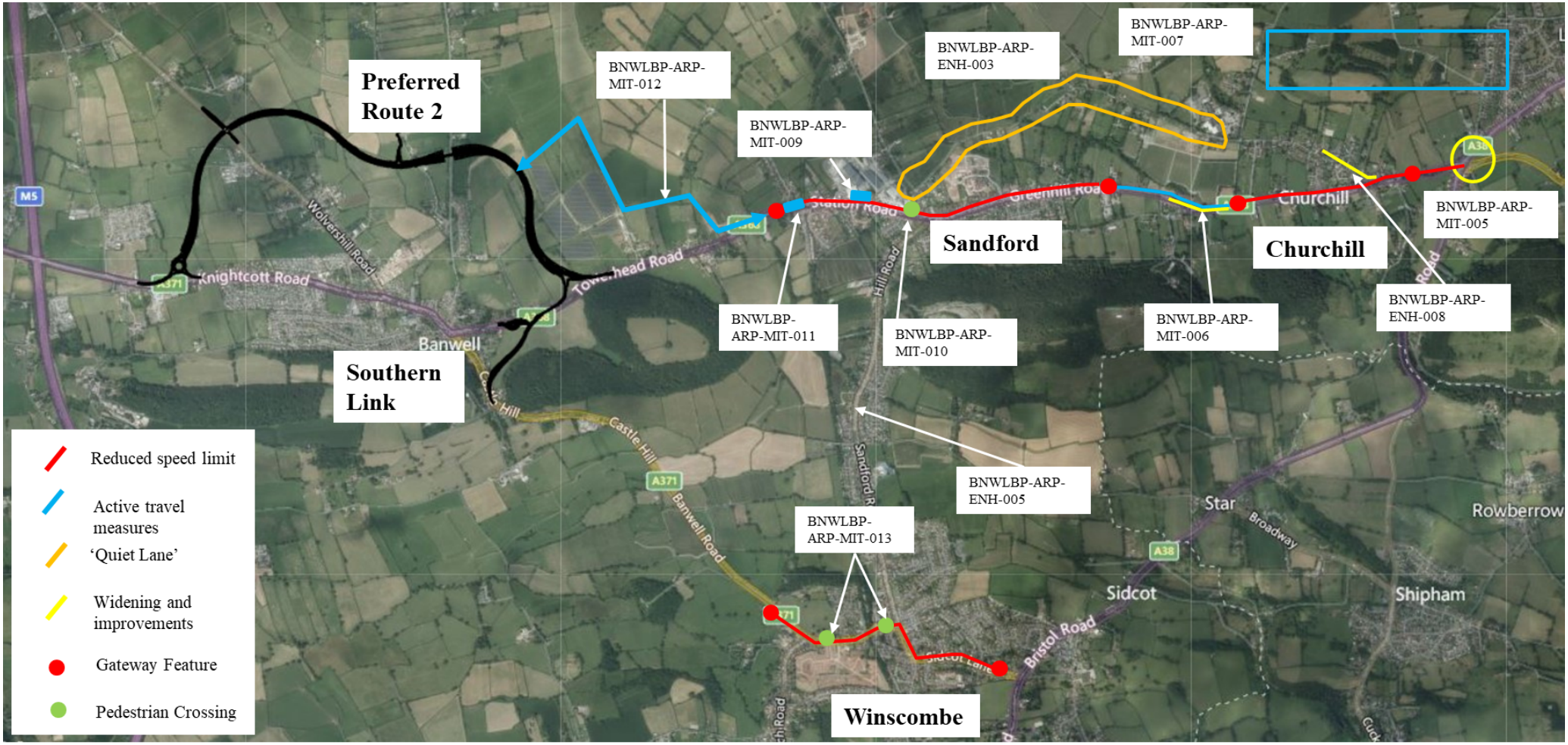
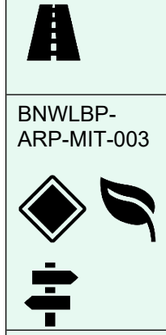
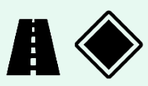


Image 3-8: Plan showing wider network mitigation options considered

Table 3-4: Summary table of all wider mitigation options considered (to be read in conjunction with Image 3-8)

Reference	Theme	Area	Description	Included / Rejected	Justification
BNWLBP-ARP-MIT-001 	Safety and traffic calming	All	Lower the speed limit to 20mph: a) On the A368 through Churchill. b) On the A368 section through Sandford (outside Sandford Primary School and Thatcher's Brewery). c) On the A371 through Winscombe. d) Other side roads TBC by further assessment	Included	To improve road safety as a result of increased traffic flows on A368/A371 corridors. To reduce environmental impacts associated with increased traffic flows (e.g. road noise). Significant public support for lower speed limits. Public support for 20mph speed limit outside Sandford Primary School and Thatcher's Brewery – there is already an existing stretch of 20mph outside Sandford Primary School.
BNWLBP-ARP-MIT-002 	Highway improvements and active travel provision	Churchill	Widening the section of A368 carriageway at Pye Cottage.	Rejected	Existing narrowing acts as traffic calming feature and supports implementation of reduced speed limits on A368. Limited benefits for congestion relief. Environmental impacts, including removal of hedgerow required, and impact on AONB. Inability to deliver within highway boundary, with third party land required Inability to provide LTN 1/20 compliant cycle route as part of widening without significant additional third party land
BNWLBP-ARP-MIT-003 	Safety, traffic calming and pedestrian, landscape, and ecological improvements	All	Introduce gateway features to: a) Churchill entrance and exit (A368), b) Sandford entrance and exit (A368), and c) Winscombe entrance from the direction of Banwell (A371).	Included	To improve road safety as a result of increased traffic flows on A368/A371 corridors. Gateway features provide a physical and visual indication to vehicles that they are entering the villages (of special character) where traffic calming features can be expected, and of the speed limit of the road. Gateway features can achieve general speed reductions, leading to improved quality of life and environmental benefits – such as reduction in noise, vibrations, and vehicle emissions – whilst minimising impact to the village character.
BNWLBP-ARP-MIT-004 	Safety, traffic calming and pedestrian improvements	All	Non-physical traffic calming measures (e.g., road markings and speed signage) in Churchill, Sandford and Winscombe.	Included	To improve road safety as a result of increased traffic flows on A368/A371 corridors. Public support for reducing speeds and traffic calming measures. Traffic calming will be required on roads where reduced speed limits are proposed that have existing 85th percentile speeds in excess of 25mph. Provides wider community benefits for vulnerable groups; helps address the demands for active modes of travel; complements new gateway features; promotes general safe, smooth travel and helps minimise potential collision issues within communities and residential areas. Reduces road noise from additional traffic
BNWLBP-ARP-MIT-005 	Highway improvements	Churchill	Churchill Junction (A38/A368) capacity improvements.	Included	To mitigate additional delay that would be experienced at the junction as a result of increased traffic flows.
BNWLBP-ARP-ENH-001 	Placemaking, landscape and ecology enhancements	All	Develop soft landscaping: native planting, rewilding, and locally indigenous planting; planting hedgerows/trees to create a sense of place and for ecological benefits.	Included	To improve road safety as a result of increased traffic flows on A368/A371 corridors. Placemaking and landscaping features promote reduction in speed by making the roads feel narrower, encourage vehicle users to respect the villages when driving through, improve residents' quality of life, ecological improvements, create distinctiveness and sense of place between villages.

Reference	Theme	Area	Description	Included / Rejected	Justification
BNWLBP-ARP-MIT-006 	Active Travel	Churchill	Provide a shared use pedestrian and cycle track on the A368 to the west of Dinghurst Road.	Rejected (alternative provided)	Inability to deliver LTN 1/20 compliant cycle route within highway boundary, with third party land required Environmental impacts associated with widening outside of highway boundary, including removal of hedgerows required Alternative route to Churchill Academy provided with reduced land requirements and environmental impacts by upgrading existing public right of way between Churchill Green and A368 to provide a safe, off-carriageway route for pedestrians and cyclists.
BNWLBP-ARP-MIT-007 	Active Travel	Churchill	Provision of an off-carriageway cycle route by upgrading the rights on four sections of footpath (c.1.2km) to bridleway standard.	Included	To improve road safety as a result of increased traffic flows on A368 by providing a safe, off-carriageway route for cyclists (pedestrians have an existing safe walking route). Existing PRoW footpaths are heavily used and are unsuitable for cyclists who currently must use Dinghurst Road, which has no off-carriageway provision. Route provides reduced environmental impacts compared to widening alongside Dinghurst Road east of Front Street, which would require removal of additional trees/hedgerows, as well as impacts to conservation area
BNWLBP-ARP-ENH-003 	Side road improvements – pedestrian/cycle safety and access	Churchill	Introduce Quiet Lane treatment – reduce the speed limit and restrict to ‘access only’ – on Sandmead Road and Churchill Green.	Rejected	Rejected in lieu of upgrade existing public right of way between Churchill Green and A368. Quiet lanes do not provide off-carriageway route for pedestrians/cyclists, who would still be at risk of collision with vehicular traffic on narrow lane with poor visibility. Would be a less direct route for much of Sandford (located east of junction between Sandmead Road and A368.)
BNWLBP-ARP-ENH-008 	Side road improvements – pedestrian/cycle safety and access	Churchill	Traffic restrictions and placemaking improvements for Front Street.	Rejected	No changes to traffic flows anticipated on Front Street, so not directly related to impacts of scheme. Does not align with northerly route proposed between Church Lane and Ladymead Lane.
BNWLBP-ARP-MIT-009 	Active Travel	Sandford	Improvement to footway outside of Thatcher’s Brewery - if the NSC scheme (anticipated to be delivered in the 2022/23 financial year) is not forthcoming)	Rejected	Being delivered by NSC independent of this scheme. Therefore no requirement to deliver.
BNWLBP-ARP-MIT-010 	Active Travel	Sandford	Additional pedestrian crossing provided in the vicinity of the Railway Inn.	Included	To mitigate severance and improve road safety caused by increased traffic flows on the A368, which make the road more difficult and unsafe to cross.
BNWLBP-ARP-MIT-011 	Active Travel	Sandford	Minor works to the priority junction where the Strawberry Line crosses Mead Lane, including widening of existing shared use path to traffic signal crossing.	Included	To improve road safety as a result of increased traffic flows on A368, by providing additional space and priority for vulnerable road users when crossing road.
BNWLBP-ARP-MIT-012 	Active Travel	Sandford	Cycle connection between Banwell and Sandford (/Strawberry Line) and Winscombe	Included	To mitigate severance and improve road safety caused by increased traffic flows on the A368, by providing a continuous, safe, off-road alternative route for cyclists and other vulnerable road users. To mitigate increases in traffic flows by providing a viable alternative for journeys by active modes, supporting reduction in local car trips

Reference	Theme	Area	Description	Included / Rejected	Justification
BNWLBP-ARP-ENH-004 	Public Transport	Sandford	Shelter for Greenhill Road westbound bus stop.	Rejected	Offers limited mitigation to offset impacts of scheme
BNWLBP-ARP-ENH-005 	Public Transport	Sandford	Junction improvements to following junctions to allow for bus priority: a) A371 Hillyfields Way / Sandford Road; b) A368 Hill Road/Nye Road; and c) A368 Hilliers Lane	Included (in part)	Options assessment for A371 Hillyfields Way / Sandford Road included Options Assessment for A368 Hill Road/Nye Road included for full signalisation of the junction. A sub option was considered for providing a signalised crossing to the west of the junction instead. Options Assessment for A368 Hill Road/Nye Road included
BNWLBP-ARP-MIT-013 	Active Travel	Winscombe	Additional pedestrian crossings provided east and west of the railway bridge	Included	To mitigate severance and improve road safety caused by increased traffic flows on the A371, which make the road more difficult and unsafe to cross
BNWLBP-ARP-ENH-005 	Active Travel	Winscombe	Improve the standard of a section of cycle path on the Strawberry Line.	Rejected	Limited changes forecast on Hill Road / Sandford Road as a result of the scheme.

3.6.7 Following from the feedback gathered during the initial public consultation, the following active travel mitigation options were considered in greater detail.

a) Active Travel connections between Sandford and Churchill Academy
   - Dinghurst Road shared use path
   - Quiet Lane towards Sandford
   - Footpath Improvements between the A368 and Churchill Green

b) Active Travel connections between Langford and Churchill Academy
   - Active travel route from Churchill Academy to Langford (north) - created by upgrading existing footpaths to bridleway standard;
   - Active travel route from Churchill Academy to Langford (south) – created by either widening existing footpath parallel to A368, or routing through the proposed housing development 21/P/2123/OUT between the A368 and A38;

c) Active Travel connections between Banwell Bypass and Sandford (connecting to Strawberry Line)
   - Parallel route on A368 Towerhead Road between Banwell and Sandford;
   - North connection from Eastermead Lane to Towerhead Road;
   - Repurposing of access track in Banwell Woods;
   - Southern connection via Castle Hill and Ilex Lane from Banwell to Winscombe.

3.6.8 Following options assessment, the following active travel mitigation options have been included within the Scheme:

a) Footpath path Improvements between the A368 and Churchill Green;

b) Active travel route from Churchill Academy to Langford (north) - created by upgrading existing footpaths to bridleway standard; and

c) North connection from Eastermead Lane to Towerhead Road.

3.7 Summary

3.7.1 The process of options selection in 2018 and 2021, as reported in the 2018 OSR and the 2021 OAR, led to the announcement of the preferred route option, as published in September 2021. The 2021 OAR outlines the method and results of the assessment, including the incorporation of public consultation feedback, and gives key reasons for progressing Northern Route 2 to further design development.

3.7.2 The development of the Scheme following the preferred route announcement has considered and balanced the engineering design with the potential environment effects and opportunities, as part of an iterative process, being informed by stakeholders and feedback from consultation.

3.7.3 The following amendments have been made to the preferred route option as a result:

a) Alterations to the bypass alignment reduce the impact on properties, reduce severance of agricultural fields, reduce capital carbon, minimise as far as reasonably practical the impacts on Banwell Football Club, reduce ecological impact, reduce noise impact on Summer Lane Park Homes, and avoid direct impact on the SAC and ancient woodland at Towerhead.

b) Alterations to the Southern Link alignment reduce noise impacts on properties along Dark Lane, reduce capital carbon, and minimises construction impacts.

c) Junction options have been assessed and revised for both the needs of vehicular traffic and WCH users, and to reduce environmental and ecological impact for example reduced land take and reduced lighting extents for junctions.

d) The route has been designed to balance the engineering requirements for the vertical alignment with the route primarily on embankment, with landscape integration, and to minimise impacts on the Mendip Hills AONB and the SAC.

e) The needs of WCH users have been at the forefront of the design, with options assessed along the bypass, within Banwell, and within the wider communities.

3.7.4 More details on the scheme design can be found in ES Volume 1 Chapter 2 – Scheme Description.

3.8 References

North Somerset Council, North Somerset Local Plan (North Somerset Council, 2000)North Somerset Council, North Somerset Local Transport Plan (North Somerset Council, 2000)

North Somerset Council, Policies Map (unpublished document, North Somerset Council, 2000)JMP Consultant Ltd, Banwell Area Transport Study (unpublished document, North Somerset Council, 2001)

JMP Consultant Ltd, Banwell Area Transport Study – Final Study Report (unpublished document, North Somerset Council, 2001)Atkins, Greater Bristol Strategic Transport Study (Government Office for the South West, 2006)North Somerset Council, North Somerset Replacement Local Plan (North Somerset Council, 2007)North Somerset Council, North Somerset Local Plan (North Somerset Council, 2000)WSP, Option Selection Report (unpublished document, North Somerset Council, 2018)