HIF Banwell Bypass and Highways Improvements Project

Design and Access Statement

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Contents

1 Introduction

1.1 Purpose of this report

1.1.1 The purpose of this Design and Access Statement ("DAS") is to set out the design principles that have been embedded in the design development of the Housing Infrastructure Fund (HIF) Banwell Bypass and Highways Improvements Project (the "Scheme"), and how access to the Scheme has been considered during operation.

1.1.2 This DAS has been prepared by Arup on behalf of and in support of a full planning application made by North Somerset Council ("NSC") major projects department for the proposed Scheme. NSC is the Local Planning Authority ("LPA"), with the entirety of the Scheme to be situated within North Somerset.

1.1.3 It provides evidence of the design processes that have been undertaken and demonstrates the evolution of the proposed development. This includes how the design development work has been informed by the technical and environmental surveys and other appraisals and surveys, along with stakeholder engagement and public consultation.

1.1.4 This DAS includes an exploration of the thorough site context analysis which has informed the design process, alongside an interpretation of the site's key opportunities and constraints.

1.1.5 The principal content of this DAS is guided by the Town and Country Planning (Development Management Procedure) (England) Order 2012 [1]and Article 4 of the Town and Country Planning (Development Management Procedure) (England) (Amendment) Order 2013[2], which sets out requirements for the DAS.

1.1.6 The structure of the DAS is also guided by the Making an application guidance from the Department for Levelling Up, Housing and Communities and Ministry of Housing Communities & Local Government[3].

1.1.7 In addition, this DAS has been informed by the North Somerset Council Design and Access Statement guidance[4].

1.1.8 This DAS forms one component of the appraisal and justification for the proposal and should be read in conjunction with the other supporting plans and documents that support this planning application. Those are set out and described in the Planning Statement.

1.2 Scheme overview

1.2.1 The following section provides a brief description and overview of the HIF Banwell Bypass and Highways Improvements Project. Reference should be made to *Environmental Statement (ES) Volume 1 Chapter 1 - Introduction* for the Scheme objectives, and *ES Volume 1 Chapter 2 - Scheme Description* for the full description.

1.2.2 The Scheme comprises 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
- Traffic mitigation in connection with the Banwell Bypass and the Southern Link, including Improvements to the wider local road network.

1.2.3 Together, these elements comprise the "Scheme". Each element as listed is described in more detail below.

Banwell Bypass

1.2.4 The Banwell Bypass would be located within the administrative area of North Somerset. The village of Banwell is located approximately 8km east of Weston-super-Mare. The Bypass would primarily consist of:

a) signalisation and capacity improvements to the Summer Lane/Wells Lane junctions on the A371;

b) a 40mph single carriageway bypass, connecting the existing A371 (east of Summer Lane) to A368 (west of Towerhead Farm);

c) a 3 metre wide shared use path provided along the majority of the Banwell Bypass providing a link from Weston-super-Mare to Sandford;

d) Banwell West Junction - a three arm roundabout located east of Knightcott Industrial Estate at the western end of Banwell;

e) Wolvershill Road Junction – a traffic signalised junction, providing access for all users to the west, east, and north. Access to the south would be restricted to public transport and walking, cycling and horse-riders, and limited agricultural access only;

f) Banwell River Bridge – an overbridge across Riverside and the River Banwell. There would not be a direct connection between Riverside and the Bypass;

g) Moor Road to Riverside Link - a side road connection between Riverside and Moor Road; and

h) Banwell East Junction - A three-arm traffic signalised junction, with dedicated turning lanes from the bypass towards the Southern Link.

Southern Link Road

1.2.6 The Southern Link will provide the new primary route south to Winscombe, as Castle Hill and Dark Lane are proposed to be stopped up. The Southern Link would be a 30mph single carriageway, connecting the A368 (East Street) to the A371 at Castle Hill. The Southern Link would be located within the Mendip Hills AONB. The Southern Link would link into the Banwell Bypass at the Banwell East Junction. A T-junction located along the Southern Link would provide access into the east of Banwell (at East Street).

Reclassification of highways

1.2.7 Changes to the highway network and road classification are proposed to take place as a result of the Banwell Bypass. Appendix B of this report shows and lists the Banwell Bypass proposed route classifications.

1.2.8 Traffic Regulation Order(s) (TRO) will be required to authorise NSC to set and amend speed limits, and any other vehicular restrictions (e.g., weight limits). As part of the Scheme's delivery, the following would likely be included in the TRO(s);

a) Changes to speed limits, including speed reductions in Banwell and the surrounding villages.
b) Weight and width restrictions to replace/relocate the current restrictions on Castle Hill.
c) Prohibition of stopping or waiting or loading.
d) Creating a rural clearway.
e) Prohibition of traffic with an exemption for buses, bicycles at some agricultural traffic turning onto Wolvershill Road southbound.
f) Prohibition of traffic with an exemption for bicycles (this may be required for active travel routes depending upon designation as part of the detailed design).

1.2.9 The TRO process would be undertaken during detailed design.

Mitigation Measures

Environmental mitigation and enhancement measures in connection with the Banwell Bypass and the Southern Link.

1.2.10 The Scheme would include mitigation measures which are provided to offset the impact of the Banwell Bypass proposal. These include (but are not limited to):

a) flood mitigation to ensure that the Banwell Bypass does not increase flood risk for third-party properties;

b) land for essential mitigation, such as ecology and landscape mitigation;

c) sustainable urban drainage systems (e.g. attenuation basins and swales), and additional groundwater mitigation, to prevent adverse water quality impacts (including the Source Protection Zone); and

d) replacement land to mitigate the impact of the scheme on Banwell Football Club.

Placemaking improvements within Banwell

1.2.11 As a result of the Banwell Bypass, there would be a reduction in traffic through Banwell. The reduction in traffic (and resulting reduction in congestion) through the village could result in higher traffic speeds without mitigation.

1.2.12 A reduced 20mph speed limit through Banwell 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).

1.2.13 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. These improvements would include, but are not limited to:

a) Alteration to the road and footways including resurfacing, widening, and narrowing (which would encourage drivers to comply with the posted 20mph speed limit);

b) Incorporation of active travel measures;

c) Soft landscaping and ecological improvements; and

d) Street signage improvements.

Improvements to the wider local road network

1.2.14 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. These mitigation measures would consist of:

a) Lowered speed limits:
   - **o** 20mph: A368 through Churchill, A368 through Sandford, A371 through Winscombe.
   - **o** 30mph: A368 between Churchill and Sandford Villages.

b) Gateway Features when entering and exiting the villages of Sandford, Churchill and Winscombe;

c) Non-physical traffic calming measures through and between villages (e.g. road markings and speed signage);

d) Capacity improvements to the Churchill Junction (A38/A368);

e) Provision of new / improvements to existing pedestrian and cycling crossings;

f) Active travel measures along the A368, with improved footway/cycleway access from Churchill and Langford to Churchill Academy;

g) Improvements to footways, shared pedestrian, and cycleway; and

h) Soft landscaping, native planting, rewilding, and ecological enhancements.

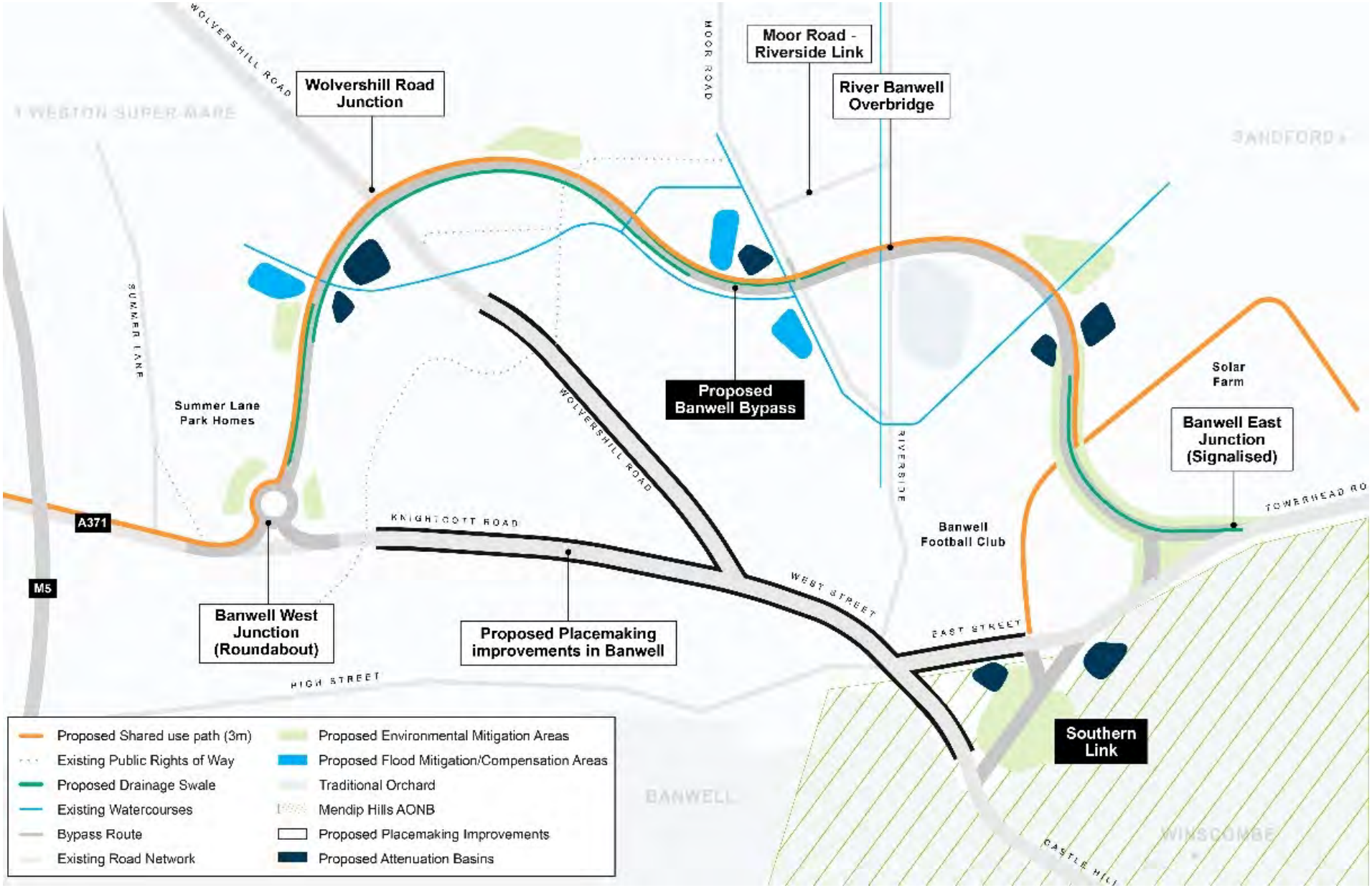


Image 1: Banwell Bypass overview plan

1.3 Structure of this report

1.3.1 Following this introduction, there are a further four chapters that address the Scheme, and comprise:

1.3.2 **Chapter 2 – The site and its context** - describes the existing site characteristics, encompassing access points, boundaries, site features, topography and provides an overview of the physical context to set the baseline for design development. This chapter presents scheme constraints and opportunities. The planning policy context is also set out in this chapter.

1.3.3 **Chapter 3 – Design approach** – sets out the Scheme's vision and objectives. Identifies the design drivers and objectives behind each element of the Scheme. The chapter also summarises the alternatives, consultation throughout the design process and design review.

1.3.4 **Chapter 4 – Design response** – this chapter presents how the design has responded to its context, stakeholder feedback and technical assessment work. This is illustrated through each element of the Scheme, considering design development.

1.3.5 **Chapter 5 – Design summary –** presents a summary of the Scheme and its design in response to the design principles and planning policy context.

2 The site and its context

2.1 Physical environment

2.1.1 This section describes the site, its location, and the surrounding land use and character. This section reflects sections 1.4 and 1.5 of the Planning Statement, however it is considered important to provide the same information in this document so to help set the scene for the design evolution of the proposed development.

The site

2.1.2 Banwell is a village and civil parish in North Somerset, its population was 2,929 (according to 2011 Census). The centre of Banwell village is covered by a Conservation Area.

2.1.3 Banwell Village is located approximately 6km east of Weston-super-Mare and 28km south west of Bristol. There are several villages in the vicinity of Banwell, including Sandford, Churchill and Winscombe to the east and Locking and Hutton to the west.

2.1.4 The immediate surrounding land use is predominately agricultural, with the Mendip Hills Area of Outstanding Natural Beauty (AONB) to the south of the village.

2.1.5 The A368 (East Street) and A371 (Knightcott Road/West Street/Castle Hill) run through the centre of Banwell. The M5 runs from south to north, approximately 0.9km west of Banwell at the closest proximity.

2.1.6 The location of the proposed Scheme is shown in Image 2.

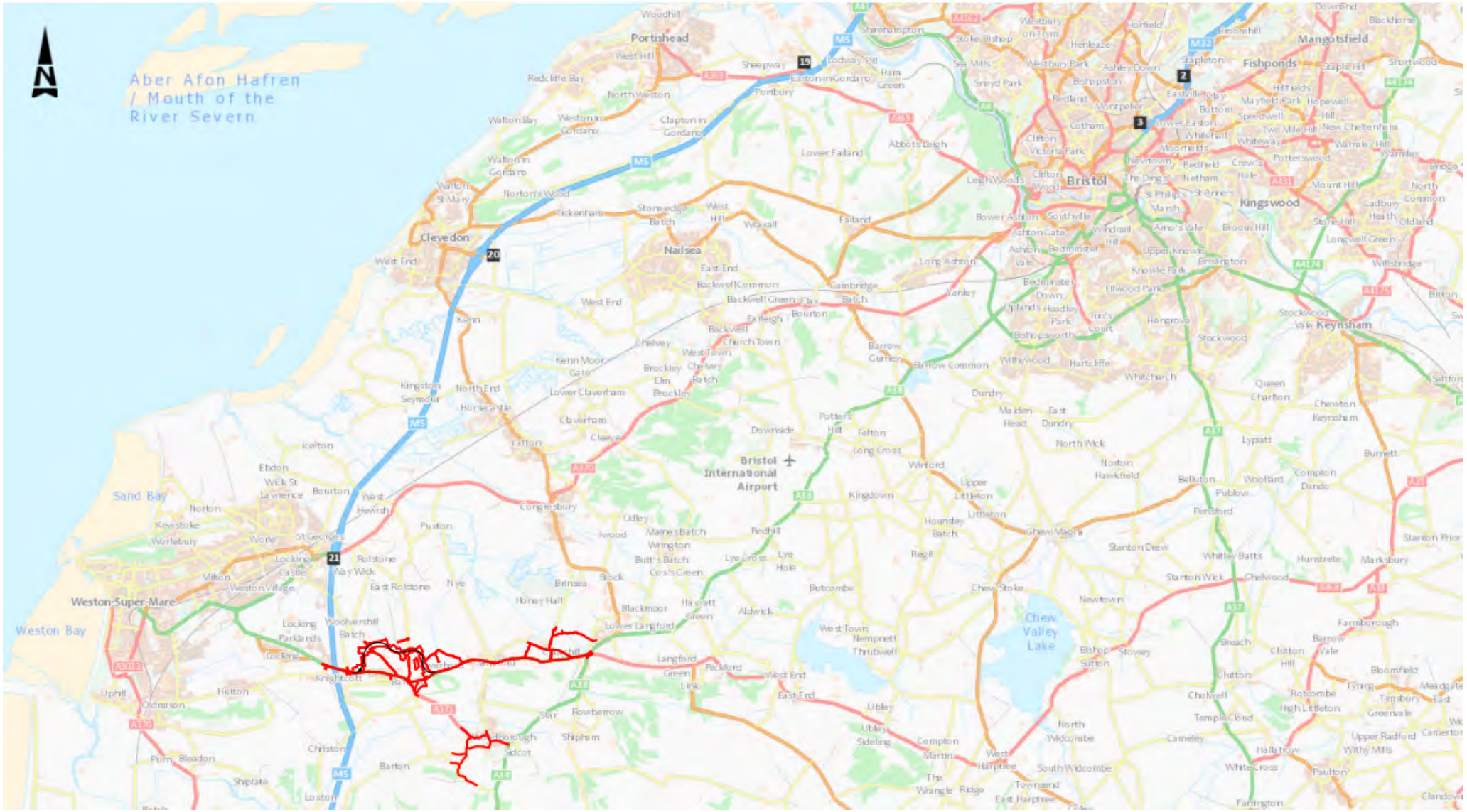


Image 2: Scheme Location plan (extract from Planning Document – Site Location Plan)

Existing land use and character

2.1.7 At the western extent of the Scheme, Banwell Bypass connects into the existing A371 and the route travels north to bypass Banwell Village crossing Wolvershill Road, Moor Road and Riverside, connecting to the existing A368.

2.1.8 The route is generally flanked by rural fields and is situated alongside residential dwellings, farms, businesses, playing field and a solar farm.

2.1.9 The existing A371 and A368 serve four villages, including a moderate number of residential properties and businesses. Villages include Banwell, Sandford, Churchill and Winscombe.

2.1.10 West of Banwell Village, there are a low number of residential properties and businesses along Knightcott Road (A371). North of Knightcott Road off Summer Lane lies Summer Lane Park Homes, a residential park home estate situated approximately 165 metres from the proposed Banwell West junction.

2.1.11 The Banwell Bypass would pass through Stonebridge Farm Caravan Park. South of this intersection would be Stonebridge Farm, with a small collection of residential dwellings further south along Wolvershill Road.

2.1.12 Travelling eastwards, the route would cross agricultural land until it reaches Moor Road and Riverside. The southern section of Moor Road includes some agricultural premises, business uses, and a small collection of residential properties. Riverside has a traditional orchard, access to the football club, and playing fields. There are residential properties on the road, with a larger collection on the eastern side of the road.

2.1.13 East of Riverside, the route passes through part of the playing fields and continues in a generally southerly direction adjacent to the existing solar farm (located to the east of the route). The route connects into the A368 west of Towerhead Farm.

2.1.14 Banwell is important to the local area in terms of services and facilities it provides. These include a nursery, primary school, local shops, sports facilities, and a number of public houses.

2.1.15 Sandford is also important to the local area in terms of the services and facilities it provides. These include a primary school, local shops, Thatchers Cider factory and associated public house.

2.1.16 Churchill is a larger settlement which includes services and facilities such as a primary school, local shops, and a public house. Churchill Academy and Sixth Form Centre, the catchment area of which includes the villages of Banwell, Sandford, Churchill and Winscombe, lies to the west of Churchill on Churchill Green.

2.1.17 To the south of Sandford, Winscombe provides services and facilities including nurseries, primary school, boarding school, local shops, public house, and cafés.

2.1.18 Banwell lies to the immediate north of the Mendip Hills AONB. While the Mendip Hills AONB is not a designated International Dark Sky Reserve (IDSR), it is well known for its dark sky environment which is protected through the AONB management policies.

2.1.19 The Flood Risk Assessment (FRA) identifies the Scheme is in flood zone 1 (0.1-1% annual probability of river flooding) and 3 (>1% annual probability of river flooding). Major surface water features within the Scheme area are the River Banwell and Towerhead Brook. The River Banwell is a “Main River”, and the source of the River Banwell Estuary, which flows northwards through the study area immediately adjacent to the left verge of Riverside (road) and then continues north-westerly to outfall via the New Bow Sluice to the Bristol Channel approximately 8km downstream of Banwell.

2.1.20 The River Banwell is characterised as a Site of Nature Conservation Interest for its entire length from its source to the New Bow Sluice.

2.1.21 Banwell Wood is located to the east of Banwell village, south of the A368. It is a Site of Nature Conversation Interest and a designated Wildlife Site. Part of Banwell Wood is designated a Site of Special Scientific Interest (SSSI). The site is also covered by a Tree Preservation Order and is defined as Ancient Woodlands.

2.1.22 Banwell Ochre Caves forms part of Banwell Wood and is designated as a Special Area of Conservation (SAC).

2.1.23 To the southwest of Banwell village lies Banwell Hill Site of Nature Conservation Interest. This site is covered by a Tree Preservation Order and is defined as a Wildlife Site in local policy.

2.1.24 The scale and size of the Scheme has the potential to affect the setting of designated heritage assets across a wider area. There are 37 Listed Buildings (one Grade I building and six Graded II* buildings), four Scheduled Monuments and one Conservation Area (Banwell) within a c.1km radius of the proposed Scheme.

2.2 Planning policy context

2.2.1 A full review of relevant planning legislation and policy is provided within the Planning Statement and the Environmental Statement (ES).

2.2.2 The following strategies, policies and plans are considered to be of most relevance to the design and access of the proposed Scheme (pertinent to this DAS):

a) National Planning Policy Framework (2021)
b) Planning Practice Guidance (2021)
c) Joint Local Transport Plan 4: 2020 – 2036 (2020)
d) North Somerset Council Core Strategy (2017)
e) North Somerset Council Site and Policies Plan Part 1: Development Management Policies (July, 2016)
f) North Somerset Council Site and Policies Plan Part 2: Site Allocations Plan (2018)
g) North Somerset Council Draft Local Plan (2028)
h) Travel Plans: Supplementary Planning Document
i) North Somerset Council Landscape Character Assessment – Supplementary Planning Guidance, (Wardell Armstrong, 2018)
j) Mendip Hills AONB Management Plan 2019-2024 (2019)
k) Landscape Character Assessment Supplementary Planning Guidance (2018)

l) North Somerset Council Active Travel Strategy (2020-2030)

m) North Somerset Council: Green Infrastructure Strategy (2021)

3 Design approach

3.1 Scheme objectives

3.1.1 The need for the Scheme is set out in chapter 1 of the Planning Statement. That includes consideration of identified transport related problems and objectives, and the associated costs and benefits of the proposed development.

3.1.2 Responding to the identified problems, NSC's overall objectives for the Scheme are to:

a) Improve the local road network to deal with existing congestion issues.

b) Improve and enhance Banwell's public spaces by reducing traffic severance and improving the public realm.

c) Provide the opportunity to increase active and sustainable travel between local villages and Weston-super-Mare.

d) Deliver infrastructure that enables housing development (subject to Local Plan).

e) Ensure the development respects the local area and minimises visual impact upon the surrounding countryside and Mendip Hills Area of Outstanding Natural Beauty (AONB).

f) Innovative and efficient in reducing and offsetting carbon from the design and construction of the infrastructure.

g) Ensure the development provides the opportunity to increase Bio-Diversity Net Gain by at least 10%.

h) Proactively engage with stakeholders in a way that is both clear and transparent.

3.1.3 Taking the problems and objectives into account, a design strategy has been developed in order to help ensure that the design of the Scheme responds positively to the site's context, character, and key drivers for change.

3.2 The design strategy

3.2.1 The vision for the Scheme is to implement an integrated infrastructure scheme that delivers landscape scale enhancement that is resilient to future challenges and that will provide connectivity for people, the landscape, fauna, and flora. The vision for the proposed Scheme is to be achieved whilst:

a) Conserving and re-enforcing the special character of the Mendip Hills Area of Outstanding Natural Beauty (AONB);

b) Minimise environmental impact and developing effective mitigation within a framework of at least 10% biodiversity net gain;

c) Maintaining and improving the water environment;

d) Protecting and enhancing the townscape of Banwell with a focus on its valuable cultural heritage;

e) Delivering the foundation for active and sustainable modes of travel and future placemaking;

f) Improving the quality of life and creating climate resilience for the local communities and encouraging partnerships in the delivery and management of the wider scheme elements.

3.2.2 The proposed Scheme will be embedded with a Carbon led approach to delivery, with carbon considerations being at the forefront of all decision making for user, maintenance, and construction emissions.

3.2.3 In addition to the above vision, the design strategy has focussed on the need to:

a) Achieve the objectives of the Scheme.

b) Design a road and associated works that comply with modern design standards, resulting in a road that is accessible, effective, and safe for all users.

c) Mitigate and enhance the environmental impact of the Scheme.

d) Give due consideration to all user groups and take into account the needs of local people and businesses, through sufficient stakeholder engagement, including those driving the route, equestrian users and those cycling or walking along or across the route.

3.3 Design principles

3.3.1 In order to achieve the vision and design strategy for the Scheme, environmental and planning specialists have worked collaboratively alongside engineers to help ensure sustainable design outcomes. To help achieve this, the design team developed and has worked towards the following design principles, focussed on landscape, biodiversity, and people. In addition, careful consideration has been given to carbon reduction outcomes through design as an integrated climate led Scheme.

3.3.2 Chapter 5 of this DAS provides a design summary, which sets out how the design response (chapter 4) responds to the design approach (this chapter 3) through the lens of these design principles. The design principles are set out below.

Landscape and heritage

a) To conserve and enhance the special qualities of the Mendip Hills AONB – both for the wider landscape i.e. setting of the AONB when viewed from within the Somerset Levels and Moors and consideration of views from the AONB especially in proximity of the Southern Link Road.

b) To promote appropriate management to ensure that the distinctive Mendip Hills AONB and Somerset Levels and Moors landscape is conserved and enhanced.

c) To avoid environmental impacts before mitigating, reducing or offsetting effects. To deliver mitigation and enhancement that provides landscape integration, respects the local landscape character whilst also delivering biodiversity and heritage benefits.

d) To reflect the local landscape framework and character through use of locally prevalent species, plant communities and materials.

e) To re-establish and strengthen field patterns and boundaries using locally characteristic landscape features such as pollard trees, rhyne network and traditional orchards.

f) To create an enhanced green infrastructure link, maximising Biodiversity Net Gain and creating a legacy for future generations.

g) To integrate the engineered embankment and cutting slopes through grading and mitigation planting using mixed habitat types, densities and species to provide a 'softer' and more naturalistic integration of the Scheme into the surrounding landscape.

h) Structures, bridges and underpasses/culverts to form a family of structures with use of materials, finishes that reflect or complement the local vernacular style.

i) Setting for the Riverside Bridge and adjacent embankments to be carefully considered with respect to adjacent properties, available views and maintenance of ecological corridors.

j) To provide screening where appropriate. Planting of woodland, woodland edge, hedgerows with trees and individual trees to create interleaved screening and filtering of views and break up the long distance view of Scheme embankment and structures when viewed from within the levels and moors.

k) To create gateway approaches to the Scheme and to Banwell through a more formalised planting approach with standard trees at roundabouts and junctions.

l) Consideration of the setting of Banwell Conservation area and the setting within the Mendip Hills AONB along Southern Link Road with creation of a more formal parkland approach to the landscape mitigation.

m) To develop an interpretation strategy to communicate the value of the heritage, landscape, biodiversity and water assets of the locality.

n) Minimise the harm to other heritage assets through careful choice of route (e.g. avoiding route 3 which passed close to the Scheduled Villa site) and contribution to design and engineering choices.

o) To gauge the risk of encountering unknown archaeological sites through a staged programme of archaeological investigation and putting in place strategies to mitigate against any harms arising from construction.

Biodiversity

a) To improve habit connectivity within the land available - create new habitats based on woodland, woodland edge, and scrub within species rich grassland within Banwell village.

b) To enhance existing habitats and create new mosaic habitats for the benefits of protected species including dormouse, bats, otters, and reptiles / amphibians by way of inclusion of nesting or roosting opportunities, such as nest boxes (for dormouse, bat boxes, bird boxes, hibernacula for reptiles, appropriate planting).

c) To protect and enhance habitats adjacent to existing SAC through creation of extended foraging habitats or linear features where possible.

d) To minimise lighting along the Scheme. Where necessary provide low level lighting – extent of lighting and light spill to be minimised to reduce impacts on nocturnal wildlife species.

e) To create diverse mixed habitats – scrub, woodland edge/woodland matrices, damp/flush meadow, species rich grassland providing increase in insect biomass.

f) The retention of existing vegetation, woodland, individual trees, veteran trees. Opportunity taken to enhance their setting and connectivity to adjacent habitats through extended planting.

g) To ensure that there is no net loss of characteristic habitats and species and aim to reach at least 10% Biodiversity Net Gain.

h) To ensure connectivity is preserved for species using water bodies within the site by way of appropriate planting and culverts.

3.3.3 Structures, bridges, and underpasses/culverts to form a family of structures with connectivity and enhancements considered for populations of notable or protected species. Mammal ledges to be provided on culverts.

3.3.4 To limit as much as possible impacts of new structures on large mammal movements by way of fencing. Development of a Nature Park to provide for long term integrated opportunities for mitigation in particular bats and potential future enhancement.

People

a) To create an active and vibrant place - Reviving the heart of the village/community.

b) To create Pedestrian friendly streets and safer roads.

c) To improve active travel - Improved accessibility and better wider connectivity and accessibility.

d) To preserve and enhance the interesting and historically sympathetic street scenes.

e) To improve health and resilience - create calm, quite places to relax and contemplate, meet friends, exercise, work out enhanced green spaces.

f) To maintain access to private properties.

g) To maintain connectivity to community assets, businesses and agricultural farmland.

h) To maintain and develop public rights of way – to implement the requirements of the Countryside and Rights of Way Act 2000.

i) To maintain (where possible) frequently used walking, cycling and horse riding (WCH) routes, and provide attractive alternatives where required to encourage active travel.

j) Where possible, minimise impacts to existing businesses and land take from agricultural farmland and business.

k) To maintain access and connectivity to those who are differently abled i.e. wheelchair users, mobility scooters.

l) To provide safe travel routes to schools and colleges.

m) To provide safe travel routes and access to health services (e.g. Banwell pharmacy, GP surgery and family planning) including Weston General Hospital which some residents travel to regularly. It is also the closest A&E department to Banwell.

n) To provide safe access to public transportation (e.g. access routes and crossing points to bus stops).

o) To ensure safe access of emergency service vehicles to retirement villages and care homes.

p) Undertake Equality Impact Assessment to inform design.

Climate

3.3.5 The design of the Scheme has sought to minimise the impact of the Scheme on climate (greenhouse gas emissions (GHG)). The effect on the climate of GHG emissions arising from the Scheme, including how the Scheme would affect the ability of government to meet its carbon reduction plan targets, has been integral to the design development process. Furthermore, the Scheme design has been adapted to take account for the projected impacts of climate change.

3.3.6 The Climate Change Act 2008 (2050 Target Amendment) Order 2019[v] amended the Climate Change Act 2008 by introducing a target for at least a 100% reduction of GHG emissions (relative to 1990 levels) in the UK by 2050. The West of England Climate and Ecological Strategy and Action Plan sets an ambition for the West of England to reach net zero by 2030. The Tyndall Centre for Climate Change has allocated North Somerset a carbon budget of 6.9 MtCO2 between 2020 to 2100. To achieve this, carbon emissions would need to reduce by 13.9% per year.

3.3.7 The Scheme's carbon target during preliminary design was set to achieve a 33% reduction of the overall embodied carbon compared to the baseline (based on end of construction works), whilst aspiring to achieve a 50% reduction.

3.3.8 A target of 10% reduction of the overall operational carbon compared to the baseline has been set (over the 60-year climate change appraisal period from opening year).

3.3.9 The design process has sought to be innovative and efficient in reducing and offsetting carbon from the design and construction of the infrastructure, and this has been achieved throughout the Scheme design evolution.

3.4 Engagement with stakeholders and public consultation (community involvement)

3.4.1 A comprehensive approach to stakeholder engagement and public consultation has been undertaken to help inform the proposals for the Scheme, focused around the following events:

a) Environmental Impact Assessment (EIA) Screening and Scoping (May 2020);

b) Transport assessment scoping,

c) Ecology scoping,

d) First Banwell Bypass and Highway Improvements non-statutory consultation (5 July 2021 to 16 August 2021);

e) Second Banwell Bypass and Highway Improvements non-statutory consultation (10 March 2022 to 22 April 2022); and

f) Ongoing stakeholder engagement.

EIA Screening and Scoping

3.4.2 Statutory bodies were consulted regarding the EIA Combined Screening and Scoping exercise prior to submission. An EIA Combined Screening and Scoping exercise was undertaken in May 2020. The purpose was to identify the likely significant environmental issues resulting from the Scheme and establish the scope of the EIA across a range of environmental topics. Details are provided within section 1.5 of the ES and ES Volume 3 - Appendix 1.B – Combined Screening and Scoping Report.

3.4.3 The EIA Combined Screening and Scoping Report, July 2021 covered specialist topic chapters and also included A Habitat Regulation Assessment (HRA) Screening, Equality Impact Assessment (EQiA) Screening and Health Impact Assessment (HIA) Screening as Appendices.

3.4.4 ES Appendix 1.D includes a summary of consultation responses that form part of the screening and scoping. These comments have been used to inform this EIA and the design of the Scheme. The Scoping Opinion received from the Local Authority Planning Officer is included in ES Volume 3 - Appendix 1.D – EIA Combined Screening and Scoping Consultation.

Transport Assessment Scoping

3.4.5 Bodies including NSC Highways Development Management and National Highways (NH) were consulted on the Transport Assessment (TA) Scoping Report (ref: 70072083/TAS/2) and an addendum to the Scoping Report (doc ref: BNWLBP-ARP-HGN-XXXX-TN-TR-000001). The Scoping Report undertaken in April

2021 sets out the proposed requirements for the Transport Assessment (TA) to support the planning application for the Scheme.

3.4.6 The Scoping Report and the Addendum can be found in Appendix A of the Transport Assessment and the responses from the key stakeholders, including NSC and NH, can be found in Appendix B of the Transport Assessment. Nearby junctions have been assessed, the outcome of which is summarised in Appendix F of the Transport Assessment. Modelling of the traffic impact on Junction 21 of the M5 has been undertaken, the outcome of which is summarised in Appendix G of the Transport Assessment.

Ecology Scoping

3.4.7 The Ecological Scoping Report undertaken in May 2021 outlines the scope, method and programme of surveys proposed, and follows on from the recommendations made in the Housing Infrastructure Fund – Banwell Bypass, Preliminary Ecological Appraisal prepared by WSP, March 2021.

3.4.8 The scope and approach that will be applied to the ecological impact assessment is contained within the Banwell Bypass Environmental Impact Assessment Combined Screening and Scoping Report.

3.4.9 The document was consulted on through the LPA.

First Banwell Bypass and Highway Improvements non-statutory consultation

3.4.10 Stakeholder engagement before the first public consultation event included setting up public working groups with the help of Banwell, Churchill and Winscombe and Sandford Parish Councils in May 2020. These provided a forum for members (put forward by the parishes) to share their aspirations for the Banwell Bypass Scheme and wider network improvements, as well as raise their concerns about possible impacts of the Scheme on their local area.

3.4.11 Over the course of the six-week non-statutory consultation, NSC provided a range of opportunities for local people to engage and respond. In addition to the public information drop-in events,

statutory and non-statutory groups were invited to engage in environmentally focussed discussions – including Natural England, Somerset Internal Drainage Board, Environment Agency, and Mendip Hills AONB.

3.4.12 Both statutory and non-statutory groups were written to as part of the consultation.

3.4.13 Inclusivity was a key focus of the consultation, providing a range of ways for residents to get involved and share their feedback, regardless of where they live in the local area. The following channels were used to promote the consultation:

a) Dedicated Banwell Bypass webpage on the NSC website, linking directly to the eConsult platform.

b) The launch of the consultation was supported with a press release.

c) Postcards were delivered to 3500 households in Banwell and neighbouring villages.

d) An article signposting to the consultation was included in NSC North Somerset Life magazine, delivered to approximately 100,000 households in the area.

e) Further signposting was included in NSC eLife newsletter which is sent to a distribution list of approx. 70,000 email addresses.

f) NSCs social media channels were used to highlight the consultation. Parish councils also used their own social media channels to reach their communities.

3.4.14 Formal responses to the consultation were accepted by completion of the online survey, or by paper copies returned to NSC, by Monday 16 August 2021. Responses were received from residents, businesses and other local bodies, including Banwell, Churchill and Winscombe & Sandford parish councils.

3.4.15 Engagement was undertaken with Parish Council's, public working groups, statutory and non-statutory environmental liaison groups and Banwell Football Club (FC). Engagement has helped understand the breadth of local issues, opportunities, and concerns.

3.4.16 Sections 4.12.11 4.12.22 of this DAS outlines how the feedback was analysed, the common themes that arose from the responses and how the feedback was responded to. Each matter

raised was passed on to the technical team for consideration in development of the Banwell Bypass design.

Second Banwell Bypass and Highway Improvements non-statutory consultation

3.4.17 This consultation was undertaken in accordance with the previous consultation event as per sections 3.4.10 and 3.4.16 above. The key differences between this consultation and the first consultation are postcards were delivered to 5000 households in Banwell and neighbouring villages. NSC also had 5000 downloads of the documents from NSC dedicated consultation webpage.

3.4.18 Formal responses to the consultation were accepted by completion of the online survey, or by paper copies, returned to the council, by Friday 22 April 2022. Responses were received from residents, businesses< and other local bodies including Banwell, Churchill, and Winscombe & Sandford parish councils.

3.4.19 A total of 442 formal survey responses (received online) were received during the consultation period, and a further 46 letters and written responses were also returned to the council. As per above, 4.12.23– 4.12.29 of this DAS outlines how the feedback was analysed.

Ongoing stakeholder engagement

Environmental Liaison Group (ELG)

3.4.20 Statutory bodies have been consulted throughout the options appraisal process and the preparation of the ES through formal meetings, email, and telephone communications. The ELG are made up of statutory and non-statutory groups. These were consulted on the options proposals as part of the options appraisal.

3.4.21 Environmental Liaison Group (ELG) meetings have been held throughout the development of the Scheme design and the outcomes of consultation have been considered when identifying the key issues and effects associated with the Scheme.

3.4.22 Meeting minutes can be found in ES Volume 3 - Appendix 1.G – ELG Minutes. The following list shows the represented

organisations who formed part of the ELG:

a) North Somerset Council;
b) Somerset County Council;
c) Natural England;
d) Historic England;
e) Environment Agency;
f) Mendip Hills AONB;
g) Avon Wildlife Trust;
h) Woodland Trust;
i) Somerset Internal Drainage Board; and
j) Levels and Moors Partnership.

3.4.23 The first ELG meeting was held on 7 July 2021. This was split into two separate sessions (for statutory and non-statutory bodies). The session provided an overview: of the approach to options appraisal; to EIA screening and scoping and to the planning process.

3.4.24 The ELG meeting 2 was held on 5 November 2021. At this ELG the outcome of the options consultation was discussed and the early development of the preliminary design. The group was provided with an update of the ecological surveys and initial themes from specialist EIA topic areas.

3.4.25 The ELG meeting 3 was held on 2 February 2022. At this ELG the Scheme design, including landscape considerations were presented. The group was provided with an update of the Ecological Surveys and the specialist EIA topic areas.

3.4.26 ELG meeting 4 was held with non-statutory consultees on 28 April 2022 and with statutory consultees on 4 May 2022. The updated General Arrangement drawings and Environmental Masterplans (EMPs) were presented together with an update on all the topic chapters.

Parish Council Meetings

3.4.27 Several Parish Council meetings and workshops were held in May 2021 with Banwell, Winscombe & Sandford and Churchill Parish councils. These meetings provided an opportunity to gain a better understand the existing situation in each village and to

listen to the concerns of the communities.

3.4.28 Meetings were held in November/December 2021 to discuss the Scheme developments with the Parish Council Working Groups, with their feedback considered in the development of the Scheme design.

3.4.29 Further meetings held with Banwell, Churchill, Sandford, Winscombe and Locking in early 2022, where they were updated on latest design and upcoming consultation.

3.4.30 Webinars were held on 16 December 2021 for residents of Banwell with access alterations as a result of bypass. Residents of Castle Hill, Dark Lane, Eastermead Lane & Moor Road were engaged.

3.4.31 Placemaking review included looking through design proposals with the Parish Councils via Teams in March 2022. The Parish Councils suggested relevant amendments ahead of second consultation.

3.4.32 A Walking, Cycling and Horse-riding Workshop (Teams Meeting) took place in March 2022.

Local Planning Authority

3.4.33 A Pre-Application was entered into with the LPA. This consisted of fortnightly meetings with the LPA Development Management team (including separate regular meetings with Highways Development Management (HDM)). These meetings provided the opportunity to gain a better understanding of the planning requirements and any design changes which may be required. Pre-Application advice was issued 23rd June 2022.

Public working groups

3.4.34 Public working groups were held on week commencing 17 May 2021 and week commencing 22 November 2021 in Banwell, Winscombe, Sandford and Churchill. These included an initial introduction to the scheme and then update on design proposals.

National Highways

3.4.35 The project team met with National Highways on 5 separate occasions to discuss traffic as a result of the Scheme on the

strategic road network. The project team have also engaged with National Highways on the proposal to extend the A371 Safer Roads Scheme across the M5 to tie into the Banwell Bypass.

3.4.36 The scope of the TA has been agreed with NSC and National Highways (NH) through collaborative discussions and the submission of a TA Scoping Report and Addendum. A comprehensive approach to stakeholder engagement and public consultation has also been undertaken to help inform the proposals for the Scheme.

Banwell Football Club

3.4.37 On 16 November 2021 an initial meeting was held with key stakeholder of Banwell FC to discuss the Scheme and next steps. On 14 December 2021, there was a further meeting with the club to discuss progression of finding replacement land. On 10 March 2022 and 29 April 2022 virtual meetings took place with Banwell FC, land agents and legal representatives to investigate and assess the status of the land occupied by the football club.

Members of Parliament

3.4.38 On 18 June 2021 a letter was sent to Member of Parliament (MP) John Penrose to inform of the start of the first consultation and offering a briefing. An update on the first consultation was provided to John Penrose MP in response to a constituent query on 10 September 2021. On 4 March 2022, a letter was sent to John Penrose MP to inform of the start of the second consultation and offering a briefing. A letter to other local MPs outlining the start of the second consultation on the Scheme was sent on 11 March 2022.

Landowner engagement

3.4.39 Initial engagement took place in June/July 2020 with landowners likely to be affected by the scheme, these have been updated with frequent newsletters informing of progress, many landowners signed licence agreements with us to undertake environmental surveys over the last 18 months.

3.4.40 Follow up meetings took place in November/December 2021 with landowners along route of the Banwell Bypass with general arrangement drawings to discuss accommodation works and sentiments towards land negotiations. Many have received follow

up letters informing them of design alterations ahead of latest round of public consultation. Early 2022 meetings were undertaken with landowners affected by wider mitigation works.

3.5 Design review

3.5.1 Design review is an independent and impartial evaluation process in which a Panel of experts on the built environment assess the design of a proposal.

3.5.2 A design review was undertaken on 31st March 2022. The review included a presentation of the Scheme to the Panel. To gain further understanding of the Scheme, a site visit of the site was undertaken with the Panel.

3.5.3 Following the review, the Panel issued a formal response in writing, detailing their views. The outcomes are further considered in section 4.12.30 of this DAS.

3.6 Alternatives

3.6.1 The proposed Scheme considered a range of alternatives for the Banwell Bypass, junctions, mitigation measures, structures, drainage, lighting, and shared use path route. Full details on the alternatives considered is detailed in ES Volume 1 - Chapter 3 – Alternatives Considered.

3.6.2 This section of this DAS provides a summary of the alternatives considered for the different elements and stages of the Scheme. Section 4 of this DAS outlines why preferred designs were taken forward, to help explain decision making about the design and access of the Scheme.

Long List of Options

3.6.3 A long list of options has been considered to reduce traffic in Banwell dating as far back as 1927. Options have been carefully identified and appraised more recently and up to 2021 when the Scheme subject to this application was selected as the preferred way forward. In summary, the main options were as follows:

a) Do nothing (Baseline);

b) Reduce the need to travel;

c) Public transport and sustainable travel choices;

d) Road improvements through Banwell;

e) Bypass of Banwell, Churchill and Sandford;

f) Southern bypass of Banwell;

g) Northern bypass of Banwell; and

h) National Grid haul route (Hinkley Point C Connection Project).

3.6.4 These options were assessed at a high level against the WebTAG[vi] criteria as well as the Scheme objectives. A description of the long list of options, together with a brief description and the summary of the decisions, are outlined in ES Volume 1 Chapter 3 Table 3-2.

3.6.5 The northern bypass of Banwell scored well against the Scheme objectives and WebTAG criteria. As such, this option was taken forward for further assessment and the other options were discounted.

Banwell Bypass route (Shortlist of Options)

3.6.6 The following options were taken forward based on the Northern bypass option, selected from the long list of options (as detailed in ES Chapter 3):

o) Northern Route 1

p) Northern Route 2

q) Northern Route 3

3.6.7 As part of the design development, the mainline of the routing was considered alongside the other associated elements of a potential Scheme, for example junction arrangements, associated highway works, placemaking, wider network measures, and WCH routes.

3.6.8 Whilst ES Chapter 3 details the assessment of alternatives, a summary is provided in section 4 of this DAS for each design element in terms of how the Scheme design has evolved whilst considering alternative options.

4 Design response

4.1.1 This design response separates the Scheme into individual elements, in order to explain how the design of the Scheme responds to its location and character, as well as the consideration of different options through design development and how access to the Scheme has been considered during operation.

4.1.2 This chapter then considers how the design response has satisfied the Scheme vision and design principles set out in chapter 3.

4.2 Design proposals

4.2.1 As set out in section 3.6 of this report, design development has focussed on a northern bypass of Banwell with assessment work helping determine the mainline of the routing alongside the other associated elements of a potential Scheme, for example junction arrangements, associated highway works, placemaking, wider network measures, and WCH routes. The assessment is detailed in the 2021 Options Appraisal Report (refer to ES Volume 3 Appendix 3.A).

4.2.2 The design of the Scheme has also been informed by stakeholder engagement and public consultation as outlined in section 3.5 of this DAS.

4.2.3 Following these assessments and consultations, preferred elements of the Scheme were agreed. The key features of the Scheme are summarised below:

r) Banwell Bypass

s) Mainline alignment

t) Junction arrangements

u) Crossings and structures

v) Other associated highway works including drainage and lighting

w) Southern Link

x) Placemaking improvements within Banwell

y) Improvements to the wider local road network

z) Environmental mitigation and enhancement measures in connection with the Banwell Bypass and the Southern Link

aa) Active travel and Public Rights of Way

4.3 Mainline alignment

4.3.1 This section describes the mainline alignment (online and offline sections) between Summer Lane (A371) in the west to Towerhead Road (A368) in the east. This also outlines the design development and key considerations behind the preferred options progressed to form the Scheme and the focus of this planning application.

Online section

Description of the proposed design

4.3.2 At the intersection between Summer Lane, the existing A371 and Well Lane a new online signalised junction would be provided. The existing junction between Well Lane and the A371 would be realigned to the west of its existing location to create a four-arm signalised junction arrangement. The remainder of Well Lane would not be affected. On the southbound approach to the junction, Summer Lane would be widened to provide an additional traffic lane and shared use path.

4.3.3 East of Well Lane the existing A371 would be realigned to the north of its existing location on a short left hand curve (from the perspective of a vehicle travelling eastbound) becoming the western arm of the new 3-arm roundabout (Banwell West Junction).

4.3.4 The existing A371 between the western and eastern arms of the roundabout (Banwell West Junction) would be retained to provide access for properties. Access would be via the eastern arm of the new 3-arm roundabout (Banwell West Junction), where a short section of the existing A371 would be realigned to create a T-junction with the eastern arm.

4.3.5 A new signalised junction (Wolvershill Road Junction) would provide a connection to the north of Wolvershill Road for all vehicles. The existing road would be widened to provide a three-lane southbound approach to the junction. A connection to the south of Wolvershill Road would be provided for buses (via a bus gate), for walkers, cyclists, and horse-riders.

4.3.6 The existing Moor Road to the south of the Banwell Bypass would be stopped-up, becoming a 'no through road' accessed from Riverside only, with no direct access from the Banwell Bypass. Access to the northern section of Moor Road would be via a new link, named the Moor Road to Riverside Link, connecting Riverside and Moor Road directly. The Moor Road to Riverside Link is located north of the alignment of the Bypass and crosses the River Banwell on a small bridge structure.

Offline section

Description of the proposed design

4.3.7 The Banwell Bypass would include a 3.3km long bypass of the village of Banwell, including a new junction at Summer Lane. The General Arrangement of the Scheme is shown on the six General Arrangement drawings submitted as part of this application (Planning Document General Arrangement Sheet 1-6).

4.3.8 The Scheme would be generally a 6.8m wide carriageway (3.4m lanes) with 1m verges. The carriageway would be locally widened around bends to allow for HGV movements. The detail of the carriageway cross sections is shown on the Typical Cross Sections in Planning Document – Typical Cross Section Drawings. The Landscaping and Environmental Mitigation can be seen on the Planning Document – Environmental Masterplan (EMP) Drawings.

4.3.9 To the West of Banwell, a new 3-arm roundabout (Banwell West Junction) would be required (Ch. 0,000) to accommodate the Banwell Bypass; to provide access into Banwell village; and to tie into the existing A371 Knightcott Road.

4.3.10 To the east of the roundabout (Banwell West Junction) the existing A371 would be realigned to the north on a short curve becoming the eastern arm of the roundabout.

4.3.11 To the northeast of the roundabout, the Banwell Bypass would descend on embankment in a northerly direction to around Ch. 0+500, where it would then travel around a long curve through Stonebridge Farm caravan park and crossing Wolvershill Road (Ch. 0+750). Much of the Banwell Bypass would be on embankment due to its location on the floodplain

4.3.12 To the east of Wolvershill Road the Banwell Bypass would enter a cutting at Ch. 0,750 to Ch. 1070, continually on the same long curve. At Ch. 1,180 the road would transition on to an embankment continuing around the same curve. From Ch. 1+300 the road would continue in a generally easterly direction on embankment.

4.3.13 The Banwell Bypass would climb from Moor Road to where it would pass over the Banwell River and Riverside Road (Ch. 1+940) on a proposed bridge structure (Banwell River Bridge). No access from the Banwell Bypass would be provided to Riverside Road. The proposed embankment would encroach on a historic landfill site, to the south of the Banwell Bypass (Ch. 1+900).

4.3.14 Continuing east, Banwell Bypass would descend on embankment from the River Banwell and Riverside Road crossing, where it would pass to the north of a traditional orchard (Ch. 2+000) and would curve around the playing fields used by Banwell Football Club. The Banwell Bypass would then continue travelling to the south passing over Eastermead Rhyne (Ch. 2+300) and passing to the south of an existing solar farm.

4.3.15 The Banwell Bypass would pass over Eastermead Lane (Ch. 2+600), then climb up hill, on embankment and curves around to the east to tie in to the existing A368 Towerhead Road (Ch. 3+100) and avoid any impacts to the ancient woodland to the south of this area.

4.3.16 A new signalised junction (Banwell East Junction) at Ch. 2+920, would provide access to the east of Banwell, tying into the Southern Link. The existing section of the A371 that would become redundant between the Banwell Bypass and Southern Link would be removed and the area landscaped.

Design development and key considerations

4.3.17 Three mainline routes and a further stakeholder suggested alternative have been considered as described below.

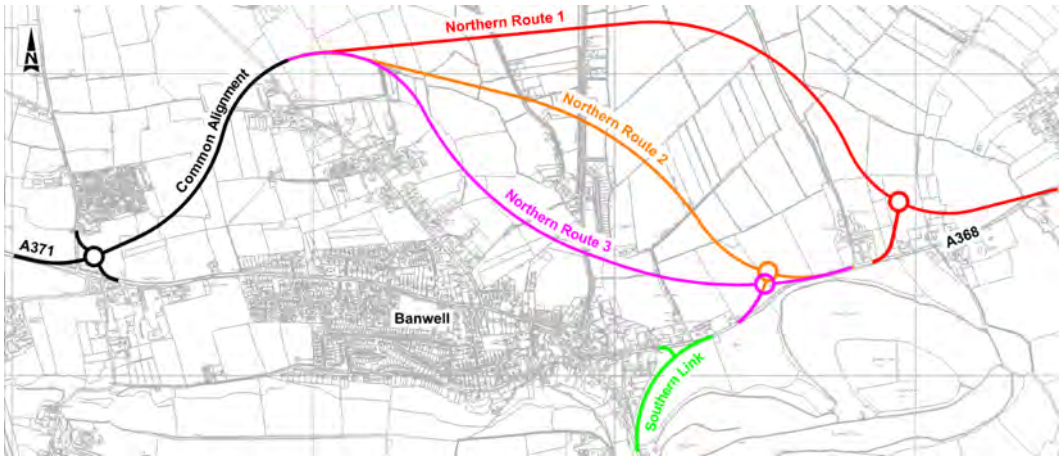


Image 3: Shortlisted Route Options subject to further assessment

4.3.18 During the public consultation held between 5 July and 16 August 2021, a further alternative route was proposed by a member of the public. That alternative route is considered to be a hybrid of Route Options 1 and 2 (as shown on Figure 4). The alternative route is called Option 2A.

Image 4: Layout of Route 2 (orange) and Route 2A (purple)

4.3.19 To help ensure that the options were assessed equally, several design factors were analysed in greater detail, prior to the appraisal. These factors include traffic volumes, highway cross-section, design speed / speed limit. Public consultation and further technical investigations also informed the appraisal process. This was all in accordance with WebTAG.

4.3.20 The shortlisted options were appraised against the assessment criteria. The results for Northern Routes 1,2 and 3 are detailed in the 2021 Options Appraisal Report (refer to ES Volume 3 - Appendix 3.A). The results for Route 2A are detailed in the 2021 Options Appraisal Report Addendum (refer to ES Volume 3 - Appendix 3.B).

4.3.21 The speed limit was reduced to 40mph limit, the originally proposed dual carriageway was reduced to a single carriageway and a junction at riverside was changed to no junction.

4.3.22 The shortlisted options were appraised against the WebTAG criteria as per Table 1. The WebTAG criteria appraised the options against social and cultural, environmental, economic, public accounts, distributional impact elements and indicative benefit cost ratio.

Table 1: Overall Appraisal Summary Table

		Do Nothing	Common Route Alignment	Route 1 (Northern Route)	Route 2 (Central Route)	Route 3 (Southern Route)
Social and Cultural	Non-business users	- - -	0	+++	+++	+++
	Physical activity	-	+	++	++	++
	Journey quality	- -	0	+++	+++	+++
	Accidents	-	-	+	+	+
	Security	-	-	0	0	0
	Access to services	- - -	- -	++	++	++
	Affordability	0	0	0	0	0
	Severance	-	0	++	++	0
	Option values	0	0	0	0	0
Environmental	Noise	-	+	+++	++	+
	Air quality	0	0	++	++	+
	Greenhouse gases	0	0	- - -	- -	- -
	Landscape	-	-	- -	- -	-
	Townscape	-	-	++	+	-
	Historic environment	0	0	0	0	-

		Do Nothing	Common Route Alignment	Route 1 (Northern Route)	Route 2 (Central Route)	Route 3 (Southern Route)
	Biodiversity	0	0	- -	- - -	- - -
	Water environment	0	-	- - -	- -	-
	Flood Risk	0	0	- - -	- -	-
	Geology and Soils	0	- -	- -	- -	- -
	Agricultural Land Holdings	0	-	- - -	- -	-
Economic	Business users & transport providers	- - -	0	+++	+++	+++
	Reliability	- -	0	++	++	++
	Wider impacts	0	0	0	0	0
Public Accounts	Cost to broad transport budget	0	0	- - -	- -	- -
	Indirect tax revenues	0	0	0	0	0
Distributional Impacts	User benefits	- - -	0	+++	+++	+++
	Noise	-	+	+++	+++	+++
	Air quality	0	0	++	++	++
	Accidents	-	-	+	+	+
	Security	-	-	+	+	+
	Severance	-	+	+	+	-
	Accessibility	- - -	- -	++	++	++
	Affordability	0	0	0	0	0
Indicative Benefit Cost Ratio	Cost to Private Sector	0	0	0	0	0
	Indicative Net Present Value	0	0	0	0	0
	Indicative Economic BCR	0	0	0	0	0

4.3.23 The following paragraphs provide a comparison of the key differentiators of the different route options.

4.3.24 **Carbon emissions** – From the initial carbon assessments, both

Route 2 and 3 had a lower impact on embodied carbon than Route 1 due to Route 1's overall length and greater length of construction in the floodplain. Route 2 is the shortest overall alignment, however there is a slightly greater embodied carbon impact than Route 3 again due to greater length on the floodplain. With respect to user carbon (greatest contributor of carbon impact) all Routes have a similar impact however Route 1 had a slightly greater impact than the others and Route 2 has the lowest impact for the future year (2038) scenario.

4.3.25 **Flooding** – Though all Routes impact on the flood plain, Route 2 travelled through the floodplain for a shorter length than Route 1, requiring fewer mitigation features and their associated impacts. Route 3 had the least impact as it crosses the shortest length of flood plain.

4.3.26 **Land take and severance –** Route 3 separates the properties at Riverside from Banwell, which would have resulted in a negative impact on that community. All routes pass through agricultural land and would result in some severance of land and access. Route 2 passes to the north of the Banwell Football club, but it severs the land used as football pitches. Route 1 had the highest amount of land take due to the route length, alignment and especially at the eastern junction. On balance Route 2 has the least impact.

4.3.27 **Noise and Air Impacts** – All three routes improve existing noise and air quality issues by removing traffic from the centre of Banwell, therefore meeting the Scheme objective to improve and enhancing Banwell's public spaces. Routes 1 and 2 share similar air quality and noise benefits, whereas Route 3 would have been the least beneficial due to its close proximity to Banwell, and therefore resulting in greater noise and air impacts on houses at the edge of Banwell and at Riverside. Route 1 had the lowest traffic noise impact on existing properties. Route 2 was less beneficial because of its proximity to properties at Riverside, but overall it still delivers benefits to properties in Banwell.

4.3.28 **Biodiversity –** Route 2 and 3 are closest to the North Somerset and Mendip Hills Bats Sites SAC and Banwell Ochre Caves SSSI, which could have an indirect impact on these sites. Although Route 1 was furthest from the SAC and therefore has less of an indirect impact, it is the longest route and therefore

would have impacted on a greater area of habitat loss and severance when compared to Routes 2 and 3. Route 2 has the greatest opportunity for providing a balance of impacts and habitat enhancements to meet the Scheme objectives and can be satisfactorily mitigated to provide the required BNG.

4.3.29 **Historic and landscape impact** – Route 2 required less land than Route 1 so was less likely to impact on the landscape or encounter buried archaeology. Route 2 was also further away from the Banwell Conservation Area, Scheduled Monuments and Banwell historic core than Route 3, however Route 2 passes through a traditional orchard at Riverside. Route 2 had the greatest opportunity for providing a balance of impacts to meet the Scheme objective of minimising visual and landscape impacts. Routes 1 and 2 were considered to have a greater adverse impact on views from the Mendip Hills AONB.

4.3.30 **Traffic Impacts** – All Routes had a positive impact on reducing traffic through Banwell. However, when travelling to Winscombe along the A371, Route 1 was the longest and least direct route, which means more traffic would have continued to use the route through Banwell village rather than the Banwell Bypass. Routes 2 and 3 provided the most direct route and therefore best met the Scheme objective of improving the local road network and dealing with existing congestion as well as facilitating enhancing Banwell's public spaces.

Consideration of member of public suggested alternative Route 2A

4.3.31 The alternative Route 2A proposed by a member of the public during consultation was subject to appraisal consistent with the appraisal undertaken for the other shortlisted options.

4.3.32 The appraisal included detailed WebTAG appraisal for the Do-Nothing scenario and for Route 2 against the alternative Route 2A. In summary, the following paragraphs provide a comparison of the key differentiators of the different route options.

4.3.33 **Carbon emissions** - from the initial carbon assessments, Route 2 had a lower impact on Embodied Carbon than Route 2A due to Route 2A's overall length and greater length of construction in the floodplain where ground treatment is required to control settlements of the embankment overlying soft soils. With

Respect to User Carbon (greatest contributor of Carbon Impact) Route 2A had a slightly greater impact than Route 2 for the future year (2038) scenario.

4.3.34 **Flooding** –Route 2 travels through the flood zone for a shorter length than Route 2A, requiring fewer mitigation features and their associated impacts.

4.3.35 **Land take and severance –**Both routes would have passed through agricultural land, resulting in some severance of land and access. Route 2 passes to the north of the Banwell Football club, severing the land used as football pitches. However, Route 2A had a higher amount of land take, impacting on a greater number of farm holdings. Route 2A would have led to increased severance of the land holdings affected (resulting in potentially long diversionary routes for farm management). On balance, Route 2 had a lower impact than Route 2A

4.3.36 Overall, the outcome of the further options appraisal was that Route 2 remained 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.

4.4 Southern Link

4.4.1 The Southern Link would provide a link between the eastern junction of the Banwell Bypass, to the A371 Castle Hill north of Banwell Castle; and to the A368, East Street. The Southern Link is located within the Mendip Hills AONB and in the Source Protection Zone (SPZ).

Online section

Description of the proposed development

4.4.2 The existing A371, south of Dark Lane would be realigned to head northeast and become the Southern Link. To the north of this, the A371 and Dark Lane would be stopped-up at their southern ends, with no direct vehicular access provided onto the Southern Link. Turning heads would be provided in these locations. Access to Castle Hill and Dark Lane would be retained in its current form at their northern intersection with the A368 East

Street.

Offline section

Description of the proposed development

4.4.3 The Southern Link would be 0.6km in length, travelling generally in a northeast direction, from the A371 to the eastern junction of the Banwell Bypass. The Southern Link would be on embankment for the majority of its length, with a small section of localised cutting, halfway along its length.

4.4.4 At Ch. 0,470, a T-junction would connect the A368 East Street to the Southern link by realigning the eastbound A368; providing links to Castle Hill and the eastern end of the Banwell Bypass and onto Towerhead Road and Eastermead Lane (“Banwell Village Link”).

Design development and key considerations

4.4.5 The Southern Link is common for all route options. The link will include measures to ensure its impact is lessened, this includes enforcing an appropriate speed limit for the link road and HGV restrictions. The Southern Link arrangement is shown in Image 3.

4.4.6 Consideration was given in the long list of options to the National Grid Haul Road as an alternative route to the Southern Link. This option was discounted as the haul route has been constructed on a temporary basis. It would have adverse impacts to environment if permanent. Congestion issues would still exist through Banwell.

4.4.7 Based on the points considered above, a Southern Link is considered to be required as part of the overall Scheme. A WebTAG assessment was undertaken of the Southern Link, with details included within Table 2 below.

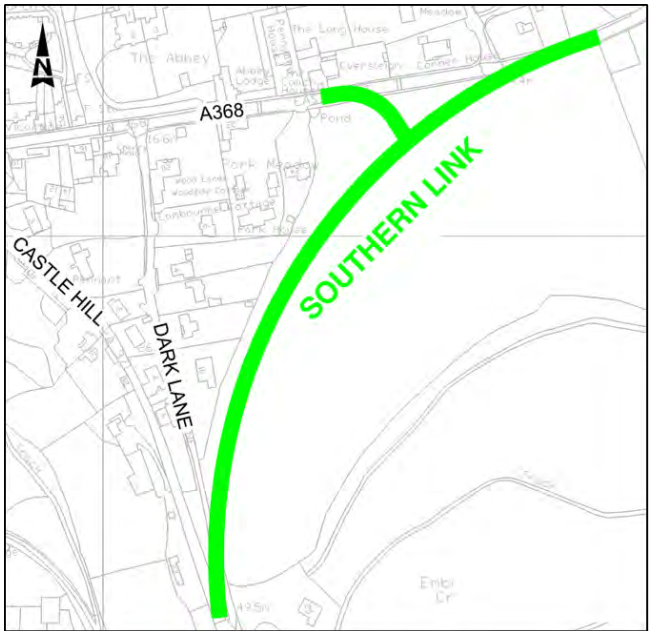


Image 3: Southern Link location considered in 2021 Options Appraisal

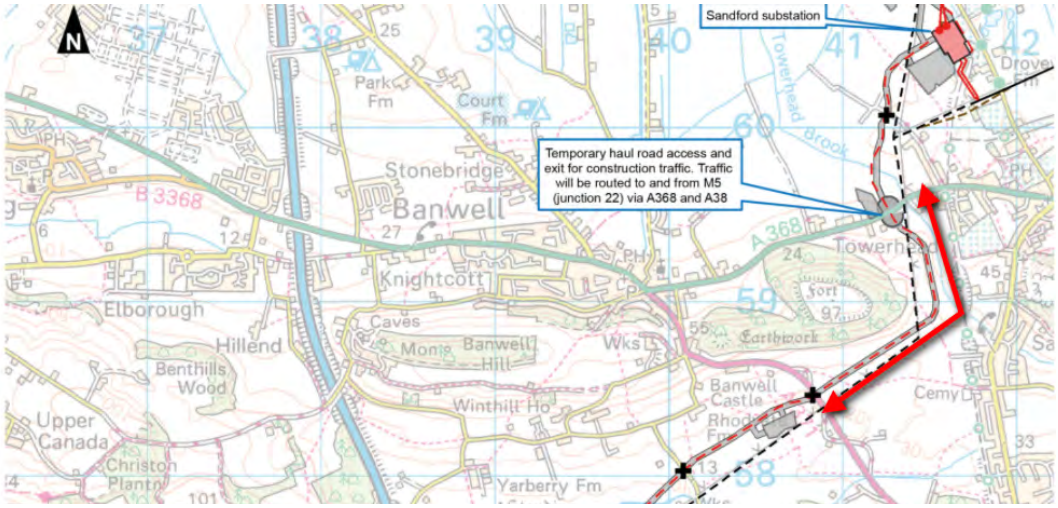


Image 4: Portion of National Grid Haul Route proposed as an alternative is outlined by the red arrow. (© hinkleyconnection.co.uk)

Table 2: Southern Link Assessment Summary Table

HIF Banwell Bypass and Highway Improvements WebTAG Criteria		Southern Link – Do Nothing	Southern Link
Social and Cultural	Non-business users	0	+++
	Physical activity	-	++
	Journey quality	-	+
	Accidents	-	+
	Security	0	0
	Access to services	-	0
	Affordability	0	0
	Severance	-	+++
	Option values	0	0
Environmental	Noise	-	0
	Air quality	0	++
	Greenhouse gases	-	-
	Landscape	-	-
	Townscape	-	++
	Historic environment	0	+
	Biodiversity	0	-
	Water environment	0	+
	Flood Risk	0	0
	Geology and Soils	0	-
	Agricultural Land Holdings	0	0
Economics	Business users & transport providers	-	+
	Reliability	-	+
	Wider impacts	0	0
Accounts	Cost to broad transport budget	0	0
	Indirect tax revenues	0	0
Distributional Impacts	User benefits	-	+
	Noise	-	-
	Air quality	0	0
	Accidents	-	+
	Security	0	0
	Severance	-	0
	Accessibility	0	+
	Affordability	0	0
BCR	Cost to Private Sector	0	0
	Indicative Net Present Value	0	0
	Indicative Economic BCR	0	0

4.4.8 The WebTAG assessment on balance considered it beneficial to include the Southern Link as part of the overall Scheme. The benefits of providing the Southern Link, delivered together with the Banwell Bypass, would likely be:

a) More vehicles driving in both directions would use the new Banwell Bypass instead of continuing to use the A371 through Banwell to get to Winscombe;

b) Vehicles travelling on routes from Winscombe and Cheddar would be able to access the Banwell Bypass without using the narrow sections of Castle Hill;

c) Reduced traffic along the A371 through Banwell would increase the opportunities for walking, cycling and horse-riding;

d) Through traffic would be removed from Castle Hill and Dark Lane, which would retain a connection for pedestrians and cyclists to the A371; and

e) The alignment has been designed to minimise gradients and earthworks as far as possible, which minimises visual impact of the route.

4.4.9 The speed limit was reduced to 40mph limit.

4.4.10 Overall, the Southern Link Road was considered beneficial to the overall Scheme.

4.5 Junction arrangements

4.5.1 There are four main junctions proposed in the Scheme, at Summer Lane Junction (Signalised), Banwell West Junction (Roundabout), Wolvershill Junction (Signalised) and the Banwell East Junction (Signalised).

4.5.2 ES Volume 1 Chapter 3 explains the need for and design development work involved in the selection of junction arrangements. A summary of the design of junction arrangements is presented below.

Summer Lane Junction

Description of the proposed design

4.5.3 The proposed Summer Lane Junction would be upgraded from a

priority T-junction to a signalised junction, which would incorporate Well Lane (as per the General Arrangement drawings Sheet 1 submitted with this planning application). This layout would future proof the junction against predicted increases in traffic in future years, and would provide improved WCH crossings. There would be a 3m wide shared use path, tying into the A371 Safer Road Scheme in Locking, which would run via Summer Lane/Well Lane signalised junction and a pedestrian/cycle/equestrian user crossing. This would be used to access the Banwell Village route via a shared use path linking into Banwell Village.

Design development and key considerations

4.5.4 Three options have been considered for the Summer Lane / Well Lane junction layout at the western end of the Scheme. These include do nothing, signalisation with existing layout, and signalisation with amended layout.

4.5.5 The preferred arrangement is to signalise the junction with an amended layout. The A371 running east-west would remain largely unchanged, however it would include additional turning lanes for vehicles turning right from the A371 into either Summer Lane or Well Lane. 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 Well Lane would be amended and would be skewed slightly westwards from its existing alignment. The chosen option would also include shared use path crossings at each arm for walkers and cyclists to cross when traffic is stopped by the traffic signals.

4.5.6 This option was chosen for the following principal reasons:

a) By doing nothing, the existing junction type would operate over-capacity in future years due to the predicted increase in traffic.

b) Signalisation is required to both regulate the traffic flow and to provide safe WCH crossing facilities on the carriageway. Signalisation was explored on the existing layout of Well Lane and Summer Lane, however the separation of Well 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 Well Lane to be adjacent to Summer Lane allows for the lights of the junction to be phased in a manner that traffic from both Well 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

Description of the proposed design

4.5.7 The proposed design of the Banwell Bypass West Junction includes a three-arm roundabout where traffic would join the Banwell Bypass. It would be located east of the industrial estate at the western end of Banwell. The junction would be lit for safety purposes, with the approaches to the junction also lit for 89m.

Design development and key considerations

4.5.8 Various options have been considered for the Banwell West Junction. These include the consideration of roundabouts at various locations and a traffic signalised junction.

4.5.9 Various potential locations for the junction were considered as illustrated in Image 5. Various designs were also considered as illustrated in Image 6.

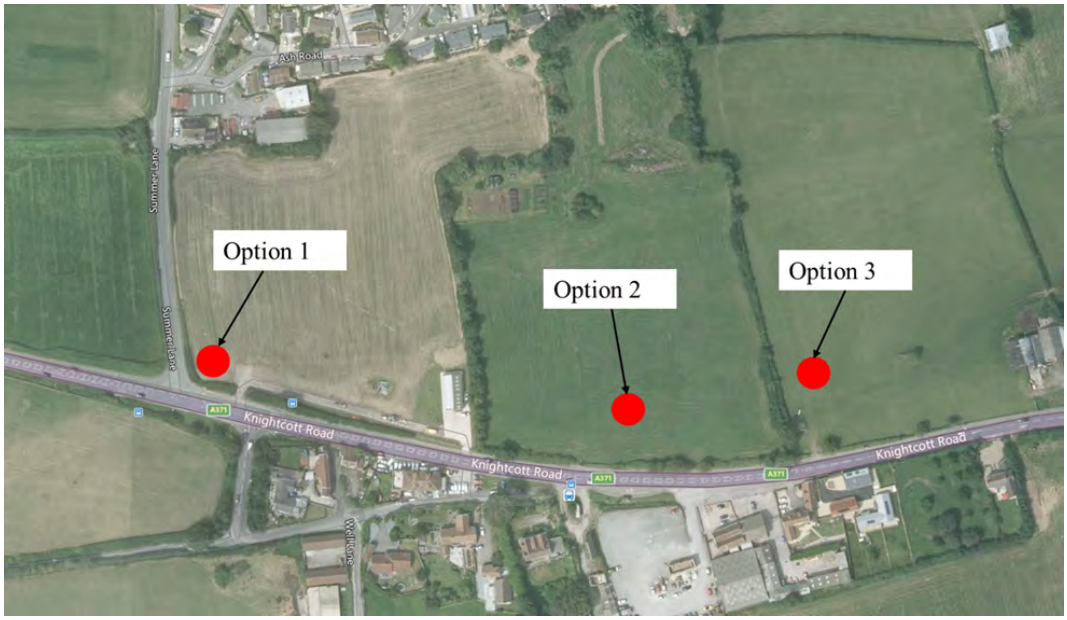


Image 5: Junction Roundabout Locations

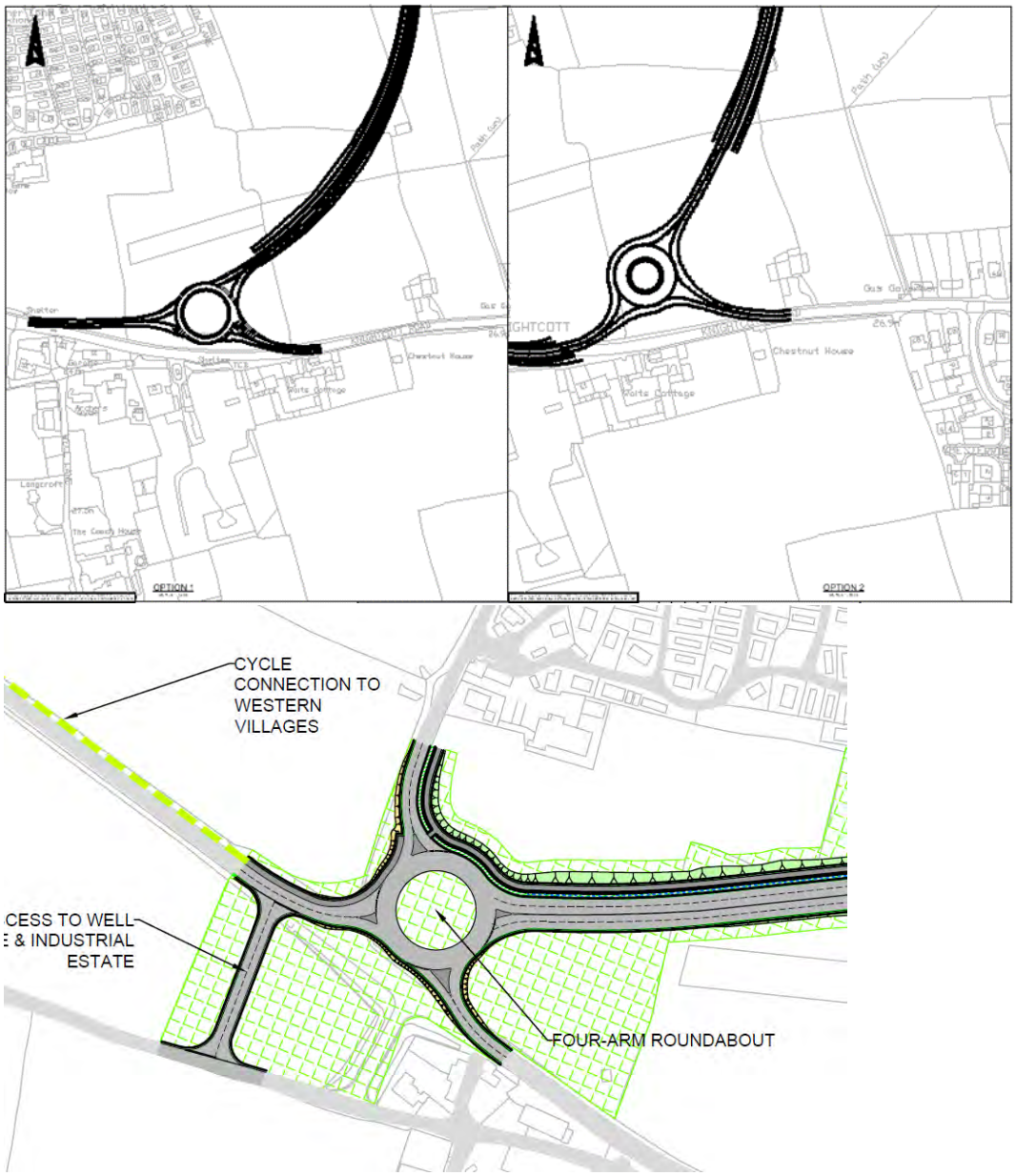


Image 6: Junction layout designs

4.5.10 A signalised junction and roundabout designs were considered for the western junction. A signalised junction at the western junction at Summer Lane would have resulted in adverse environmental impacts, mainly noise, air quality and landscape/visual effects, on residents at Summer Lane Park Homes.

4.5.11 A roundabout offers the opportunity to change the horizontal alignment of the Banwell Bypass over a shorter distance by staggering the arms of the roundabout. The roundabout location proposed in the Scheme would reduce material use as the overall length of the Banwell Bypass is shorter. Also, there would be reduced construction carbon due to the reduced volume of material used and reduction in extent of construction work.

4.5.12 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.

4.5.13 The design is located further away from Summer Lane Park Homes, reducing the potential noise and air quality impacts for those residents. It also maintains access to existing properties on the A371.

4.5.14 Surrounding the Banwell West Junction would be mitigation areas to provide screening and landscape integration. Additional landscaping and screening, such as the planting of new hedgerows, would help protect views and better integrate the junction with the local area. The junction also includes additional pedestrian, cycle and equestrian crossings to link in with the proposed active travel provision to Banwell Village (as per the General Arrangement drawings Sheet 1 submitted with this planning application).

Image 7: Visualisation of the proposed Banwell Bypass West Junction

Wolvershill Road

Description of the proposed development

4.5.15 The current design of the Banwell Bypass includes a change in access to Wolvershill Road. The proposed change would restrict traffic on Wolvershill Road to the south of the Banwell Bypass, limiting its use to walkers, cyclists, horse riders and public transport (i.e. via a bus gate) only. Vehicle access would be maintained for agricultural vehicles where their land can only be accessed using Wolvershill Road.

4.5.16 Traffic would still be able to use the section of Wolvershill Road that runs to the north of the Banwell Bypass, travelling south to access the Banwell Bypass itself, then east towards the A368 or west towards the A371.

4.5.17 A signalised junction is proposed where Wolvershill Road joins the Banwell Bypass. It would provide a connection to the northern part of Wolvershill Road for all vehicles and would also include a waiting area for vehicles wanting to turn right into the minor road (southern part of Wolvershill Road) from the Banwell Bypass, as well as dedicated turn lanes for other traffic.

4.5.18 The Wolvershill Road junction would include signalised pedestrian/cyclist/equestrian user crossings. The crossing of the western arm of the junction would be undertaken in two stages. This is based on the impact on traffic as analysed in traffic modelling undertaken for the Scheme. There would be a 3m wide shared use path along the north side of the Bypass. Lighting will be minimised at the junction, but sufficient lighting will be provided to ensure visibility.

Design development and key considerations

4.5.19 Limiting access to Banwell from the junction is intended to reduce rat running and reduce the traffic along Wolvershill Road, which would have environmental benefits. The northern part of Wolvershill Road is being widened for the junction as it is currently a pinch point that would affect operation of the junction approaches.

4.5.20 To the west of the junction, features such as visual screening, landscape integration and biodiversity mitigation would be in

place to reduce visual impacts. Adjacent to proposed flood mitigation storage areas to the east of the Banwell Bypass there would be highway drainage ponds.

4.5.21 Further east, past the junction, there would be potential for more landscape integration and biodiversity mitigation. There is provision within the Scheme for a connection into anticipated future development by means of a widened section of carriageway to the east of Wolvershill Road Junction (Ch. 0+800 to Ch. 1+300). The purpose of the widened section is to allow for a future access to housing development to the north of the Banwell Bypass expected to be allocated in the emerging Local Plan. No junction or access is being provided by the Scheme, only a widened section which would allow for an additional turning lane. The precise location and requirements of the junction will not be known until after the new Local Plan process is determined, but the NSC Local Plan team has been consulted on their preferred location for the inclusion of the additional lane to accommodate the junction. The additional lane will be hatched until the junction is required. It is highly likely that the Banwell Bypass will be completed before the start of construction of any future housing and its associated infrastructure. Providing this widening as part of the Scheme will minimise potentially significant disruption to the newly built Banwell Bypass infrastructure due to the construction of the access, avoid wasted resource and minimise traffic disruption. It also supports the enabling of housing development (subject to the Local Plan), which is an objective of the Scheme.

Moor Road

Description of the proposed development

4.5.22 The Banwell Bypass design cuts across Moor Road. Moor Road would be stopped up for its length underneath the footprint of the Bypass (as per the General Arrangement drawings Sheet 3 submitted with this planning application). Access to the southern section of Moor Road would be via its existing junction with Riverside. Access to the northern section of Moor Road would be via a new link, connecting Riverside and Moor Road directly, which is located north of the alignment of the Bypass.

4.5.23 To the west of Moor Road, there is a proposed flood drainage

storage area to the northern side of the Banwell Bypass. Further east, a highway drainage attenuation basin is proposed, in addition to another flood mitigation area to the south of the Banwell Bypass opposite Moor Road.

Design development and key considerations

4.5.24 Four options were considered for Moor Road. In summary, there 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

4.5.25 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.

4.5.26 Option 3 was discounted as it did not provide agricultural access between Moor Road and Riverside.

4.5.27 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.

Banwell East Junction

4.5.28 The Banwell East Junction includes a three-arm traffic signal junction at the eastern end of the Banwell Bypass (as per the General Arrangement drawings Sheet 5 submitted with this planning application). This includes a waiting area for vehicles wanting to turn right from the Banwell Bypass towards the southern link / East Street as well as dedicated turn lanes for other traffic.

4.5.29 The 3m wide shared use path for walkers and cyclists would

continue along part of the north side of the Banwell Bypass. East of the playing fields at Banwell Football Club, the path would separate from the Banwell Bypass leading towards Sandford and provide a connection to the Strawberry line. This would form part of the Scheme's proposed walking and cycling provision, including a route to Banwell via the Banwell Village Link. Walkers would be taken from the Bypass to East Street via Eastermead Lane as opposed to the Banwell Village Link.

4.5.30 North of the playing fields and the Banwell Bypass, there would be another area of environmental mitigation, providing landscape integration and biodiversity mitigation. Highway drainage attenuation basins are proposed north and south of the Banwell Bypass.

4.5.31 Moving towards the Banwell Bypass East Junction itself, there would be a further area of environmental mitigation, again providing landscape integration and biodiversity mitigation both sides of the Banwell Bypass. The area between the two arms of the junction where the existing A368 will be another area where environmental mitigation, landscape integration and habitat connectivity will be implemented.

Design development and key considerations

4.5.32 Several different junction options have been considered at this location; priority junction, roundabout and traffic signal junction as shown in Image 8.

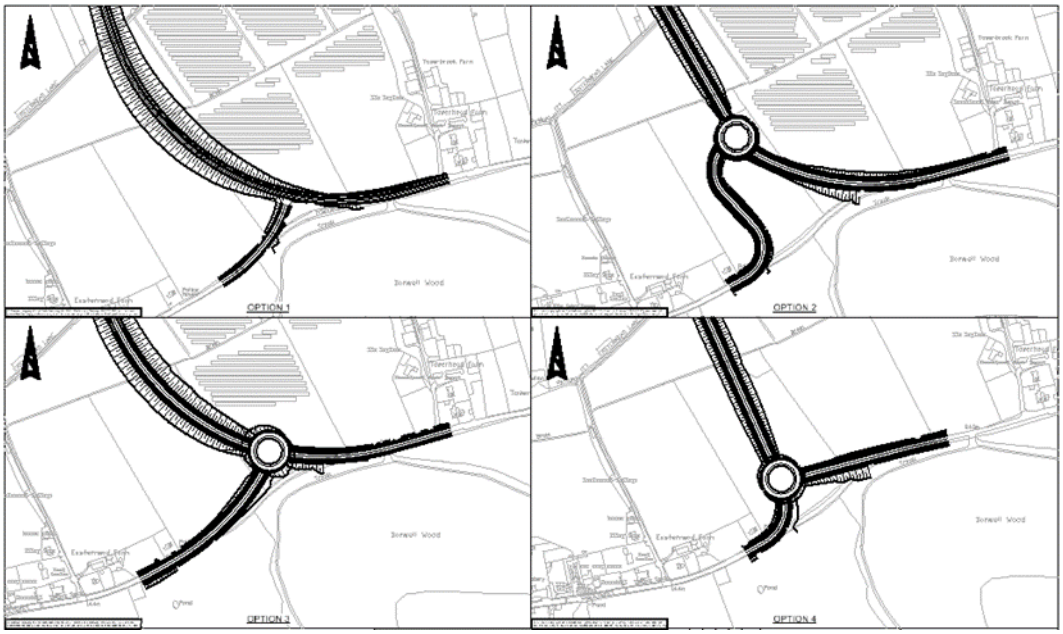


Image 8: Junction options for Banwell East Junction

4.5.33 The location of the Banwell East Junction is particularly environmentally and ecologically sensitive. The southern edge of the existing A371, where the Banwell Bypass ties into the existing network, forms the boundary of the Mendip Hills Area of Outstanding Natural Beauty (AONB). It is also a 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 A371, their feeding grounds are located to the north of the A371 and as such the Banwell Bypass crosses their flight path. Also to avoid impact to the ancient woodland.

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

4.5.35 This design would reduce the likelihood of queuing traffic impacting on the Banwell Bypass' traffic flow. Traffic travelling east then joining the Southern Link would have a 55m waiting area for right turn onto the Southern Link. Traffic travelling west onto the Banwell Bypass would also have a dedicated left turn lane to help maintain traffic flows joining the Banwell Bypass.

4.5.36 The location of the proposed traffic signal junction has been chosen so headlights of vehicles are diverted away from the bats flight line to feeding areas. The signalised junction is also smaller than alternative options such as roundabouts, helping to keep a further distance from local bat populations so that they are not disturbed.

4.5.37 As a smaller style of junction, it also requires less land to build, which means it has a smaller impact on the local landscape and reduced requirements for landscaping works. The junction is also further away from the historic village of Banwell which preserves the historic fabric of the village.

Image 9: Visualisation of the proposed Banwell East Junction and Southern Link

4.6 Crossings and structures

Riverside and River Banwell Crossing

Description of the proposed development

4.6.1 It is proposed that the Banwell Bypass includes an overbridge across Riverside as shown in Figures 12 and 13, the River Banwell and the adjacent unnamed rhyne that runs parallel, so that traffic on both routes can flow independently of one another. The proposed bridge would have a clearance underneath of approximately 4.5m. The overall height would be approximately 7 to 8 metres above existing ground level.

4.6.2 The proposed structure would be a single-span integral bridge, comprised of precast prestressed W-beams with a cast in-situ reinforced concrete deck slab and precast parapet edge beams. The bridge deck would be integrally connected to cast in-situ, reinforced concrete abutment walls supported on pile caps and pile foundations. Concrete return walls supported off a pile cap would be provided at the back of abutments at all four corners and would run parallel to the Banwell Bypass. Beyond these, structurally independent reinforced concrete wing walls would be provided at all four corners of the bridge and shall run parallel the Banwell Bypass.

4.6.3 The Banwell Bypass would go through the north section of the playing fields, avoiding the majority of the playing field.

4.6.4 Moving eastwards past the Riverside junction there is a proposed area of mitigation land for landscape integration and biodiversity mitigation.

Design development and key considerations

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

4.6.6 The preferred arrangement is to elevate the Banwell Bypass over Riverside. The Banwell 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. By raising the Banwell Bypass over Riverside and omitting a direct connection onto the Banwell Bypass, through traffic on both roads acts independently. This option will discourage rat running from Banwell to M5 Junction 21 which will in turn reduce the volume of traffic observed along Riverside.

b) Walking cycling and horse-riding surveys identified that Riverside is frequently used for leisure walks, cycle rides and equestrian rides. Horse-riders use 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 crossing the Banwell 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 Banwell Bypass and Riverside Road to maintain constant speed. There would be air quality improvements introduced through maintained traffic flow.

d) Whilst elevating the Banwell 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 the provision of raising Riverside over the Banwell Bypass would have resulted in an equally adverse land impact due to the greater footprint and direct impact on properties located along Riverside.

4.6.7 Building a bridge rather than a junction means vehicles would not be able to queue to join the Banwell Bypass from Riverside, improving traffic flows and journey times on the Banwell Bypass. The proposed height is to accommodate larger vehicles which require access to businesses.

4.6.8 Responding to concerns raised in the Summer 2021 consultation, the proposed location of the overbridge would minimise impact on the traditional orchard and have less of an impact on Banwell Football Club’s pitches. In order to minimise land take of the playing field, the Banwell Bypass would avoid the majority of the playing field in the northern section.

4.6.9 The land around the structure is close to but does not intersect historic landfill, making the land more suitable to build the bridge upon (as shown on the General Arrangement drawings Sheet 3 submitted with this planning application).

4.6.10 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.

4.6.11 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.

4.6.12 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.

4.6.13 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.

Moor Road Retaining Wall

4.6.14 A proposed retaining wall between Ch 1+800 and Ch 1+820 would be provided at Moor Road. This would retain the proposed highway embankment, adjacent to the Rowtech Engineering workshop. The retaining wall would be of concrete construction, 24m in length and would be 3m at height.

Image 10: Visualisation of the proposed Riverside and River Banwell Crossing

Image 11: Visualisation of the proposed Riverside and River Banwell Crossing

4.7 Other associated highway works including drainage and lighting

Description of the proposed development

Drainage

4.7.1 To reduce the chance of flooding, the Scheme will include a surface water draining system and conventional piped drainage (along with swales) to convey surface water from the carriageway into seven water storage pools called attenuation basins. These basins are designed to store water and slowly release it into existing watercourses in the area.

4.7.2 Culverts will also provide crossing points for watercourses and rhynes, to maintain connectivity.

Lighting

4.7.3 The A371 and A368 through Banwell is currently fully lit, with part time night lighting. The proposals for the Banwell Bypass are to minimise the amount of new lighting to where it is required for safety reasons at the Western Roundabout and Wolvershill Road junction. Refer to Planning Document - Lighting Strategy.

Design development and key considerations

Drainage

4.7.4 Various surface water capture methods were considered during the design development of the Banwell Bypass. This 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.

4.7.5 The drainage strategy for collecting surface water runoff from the Banwell Bypass is as follows:

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

b) Lined cut-off ditches at the top of cuttings and unlined cut-off ditches at 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.

4.7.6 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 ecological mitigation.

4.7.7 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 walkers and cyclists.

4.7.8 Mitigation measures have been included within the design to avoid contamination of groundwater within the Source Protection Zone (SPZ). All attenuation basins in the area of the SPZ would be lined with a welded geomembrane, in accordance with LFE5 guidance, to prevent pollution of groundwater.

4.7.9 Inclusion of SUDS within the Surface Water Drainage Strategy (refer to Planning Document – Surface Water Drainage Strategy) is in accordance with guidance outlined in the *Creating sustainable buildings and places in North Somerset Supplementary Planning Document (SPD)*.

4.7.10 Maintenance access to attenuation basins and rhynes is shown on the surface water drainage strategy drawings, included within the Surface Water Drainage Strategy submitted as part of this planning application. Provision/type of access gates is a matter for detailed design.

Lighting

4.7.11 Due to landscape and ecological concerns, the project team have minimised the extent of road lighting as far as reasonably practical without compromising on road safety in accordance with NSC's Highways electrical design guide. Following engagement with NSC, street lighting at Wolvershill Road is proposed to

alleviate safety concerns around vehicle and NMU conflict at crossing points. This protects the ecology of the area especially for bats, conserves dark skies in particular in association with the Mendip Hills AONB and reduces the carbon impact of the Scheme. To further mitigate impacts throughout the Scheme lighting columns will be 8m tall and colour temperature will be 3000K. Refer to details in ES Volume 1 - Chapter 2 - Scheme Description and in Planning Document - Lighting Strategy.

4.8 Banwell placemaking, mitigation and enhancements

Description of the proposed development

4.8.1 The proposed Banwell Bypass provides the opportunity to make placemaking improvements and enhancements to the centre of Banwell village, with the introduction of traffic calming measures and pavement widening that would reduce the dominance of the road. The impact of the proposed Banwell Bypass would be a reduction in traffic volumes through Banwell village as a result of more traffic using the Banwell Bypass. The proposals in the village would lock in the benefits of the Banwell Bypass. This will make Banwell a safer, more attractive place for the residents and visitors.

4.8.2 The proposed measures include:

a) 20mph speed limit through Banwell Village to improve safety and provide environmental (air and noise) benefits, whilst discouraging through traffic from using the road (Mitigation);

bb) Narrow road widths by providing cycle lanes or wider shared footpath/cycle routes, cycle storage, crossing points (Mitigation);

b) Creating a sense of place by introducing planters and ecological enhancements at the playground and village hall, and appropriate village signage (Enhancement);

c) Increased footway widths, the use of different road surface treatments, cycle storage and connecting cycle links at the school and West Street car park (Mitigation);

d) Key interventions at the Narrows, including resurfacing and widening of footways, narrowing of the carriageway, introducing planting and footway improvements (Enhancement);

Design development and key considerations

4.8.3 The focus areas include the recreational ground and village hall; Banwell Primary School and the village car park; the Narrows and the Square with other parts of Banwell village benefiting.

School and Banwell Car Park

4.8.4 At Banwell Primary School and the public car park, the main proposals involve improving safety for children travelling to school on foot or by bike, or waiting for bus connections to neighbouring villages, including better provision at the village hall for park and stride schemes for children dropped off by parents.

4.8.5 This would be achieved by widening the pavements on both sides of the road. Road surface treatments would be changed to the congregating zone to prioritise pedestrians over car users with a safer crossing and improved cycling opportunities. Safety improvements would benefit those using public transport, especially children catching the bus to secondary school from this area. The area would form a walking and cycling hub with improved cycle storage and a connecting cycle link along Knightcott Road, linking into the proposed Banwell Bypass cycle route.

The Playground and Village Hall

4.8.6 At present, the area has no safe crossings, and the road lanes on and off West Street are wide with narrow footways. The main proposals for this location are to narrow the road lanes, introduce a cycle lane or wider shared footpath/ cycle route, introduce cycle storage and provide a safe pedestrian crossing near the bus stop, allowing better connectivity to these key local facilities. Traffic slowing measures are proposed along Wolvershill Road in the form of build outs. There are also possible opportunities to provide planting improvements around the Village Hall and wider ecological enhancements within the Recreation Ground.

The Narrows

4.8.7 At West Street The Narrows would be extended to this area to provide on street parking outside the shops. Cycle parking and street furniture will be installed and placemaking improvements are proposed between Emery Gate and access to the Banwell Bowls Club. Within 'The Narrows', the area around the war memorial and its bench has the opportunity for enhancement. Narrowing the road would allow for short sections of pavement to be introduced to areas where there currently aren't any, such as the south side of West Street outside Banwell Methodist Chapel, providing safe and more connected pedestrian routes through the village.

The Square

4.8.8 At the Square, road surfacing material changes and pavement widening will help reinstate the area as a community square. Crossing points will also be installed to allow pedestrians to get around the Square safely and to improve the setting of East Street by including a cycle lane linking to the Banwell Bypass. Signage in the Square can also be replaced with new and more historically consistent and village appropriate signage in the conservation area.

4.8.9 A drop in session at Banwell Youth and Community Centre discussed the placemaking plans and intentions to businesses and individuals located within the narrows section of Banwell. Design changes implemented from the discussions include the introduction of loading bays, a refinement of kerb locations and dropped kerbs. Maintenance regarding soft planting in the vicinity of homes will be considered at detailed design.

4.9 Wider network mitigation and enhancements

Description of the proposed development

4.9.1 Construction of the Banwell Bypass will result in additional traffic travelling through areas surrounding Banwell, in particular the villages of Churchill, Sandford and Winscombe. It is recognised that increased traffic could result in negative impacts to these areas, including concerns related to road safety, congestion at Churchill junction, and environmental impacts.

4.9.2 A package of mitigation measures are proposed to reduce the potential impacts of the Banwell Bypass in those areas. The measures include the following:

4.9.3 Proposals for Winscombe

a) A speed limit reduction from 30mph to 20mph through Winscombe is proposed from west of Church Road to east of Belmont Road.

b) A reduction to 20mph is also proposed on Church Road, from its junction with the A371 to Winscombe Hill.

c) Measures to help vehicles stick to the speed limit without the need for formal speed limit enforcements, such as changes to road markings, road surfacing, new signage, and some localised narrowing of the road.

d) New gateway features are also proposed at the approaches to the village where the reduction to a 20mph speed limit would begin.

e) Two new pedestrian crossings are proposed to help people safely cross the road. One would be located to the east of the railway bridge near Nippors Way, the other would be on Sidcot Lane, west of the Chestnuts.

f) A further two existing, uncontrolled, pedestrian crossings are proposed to be upgraded to zebra crossings (one located on Woodborough Road between Church Road and the Strawberry Line, and the other located on Sandford Road, between Woodborough Drive and Hillyfields Way).

4.9.4 Proposals for Sandford

a) Speed limit reduction from 30mph to 20mph through Sandford village is proposed from west of Mead Lane to east of Greenhill Lane. The reduced speed limit is not currently proposed on Hill Road between Sandford and

Winscombe, as the expected increase in traffic on this road is much lower than on the A368.

b) Measures to help vehicles stick to the speed limit without the need for formal speed limit enforcements are proposed, such as changes to road markings, road surfacing, new signage, and some localised narrowing of the road.

c) New gateway features are also proposed at the approaches to the village where the reduction to a 20mph speed limit would begin.

d) A shared use path for walkers, cyclists and horse-riders is proposed to run alongside the Banwell Bypass and branch off through the solar farm, heading to Sandford and the Strawberry Line, providing a continuous off-road connection with Weston-super-Mare and Winscombe.

e) Pedestrian and cycle priority is at the junction of Mead Lane with the A368, by providing a continuous footway/cycleway crossover, in addition to widening of the existing shared use footway/cycleway by the signalised crossing of the A368.

f) Due to the potential increases in traffic on the A368, the ability of pedestrians to safely cross the road may be impacted. An additional pedestrian crossing is therefore proposed to the west of the junction with Hill Road.

4.9.5 Proposals for Churchill

a) Speed limit reduction from 30mph to 20mph through Churchill from west of The Drive to Churchill Junction.

b) 20mph speed limit to be applied to Hillier's Lane, Front Street, Churchill Green and Church Lane.

c) Speed limit reduction on the 40mph section towards Sandford to be reduced to 30mph.

d) Measures to help vehicles stick to the speed limit without the need for formal speed limit enforcements, such as changes to road markings, road surfacing, new signage, and some localised narrowing of the road.

e) New gateway features are also proposed at the approaches to the village where the reduction in speed limit will begin.

f) Upgrading an existing Public Right of Way (footpath) route between the A368 and Churchill Green to bridleway, which is a popular walking route between Churchill and the secondary school. Improvements would include the construction of a 3m wide shared use path, suitable for

year-round walking, cycling and horse-riding, and access improvements at either end to provide step-free access.

g) Upgrading an existing Public Right of Way (footpath) route between Church Lane and Ladymead Lane to bridleway. Improvements would include the construction of a 3m wide shared use path, suitable for year-round walking, cycling and horse-riding, with suitable fencing and gating arrangements to separate users from the neighbouring agricultural land uses.

h) Proposed changes to Churchill Junction as per Figure 14.

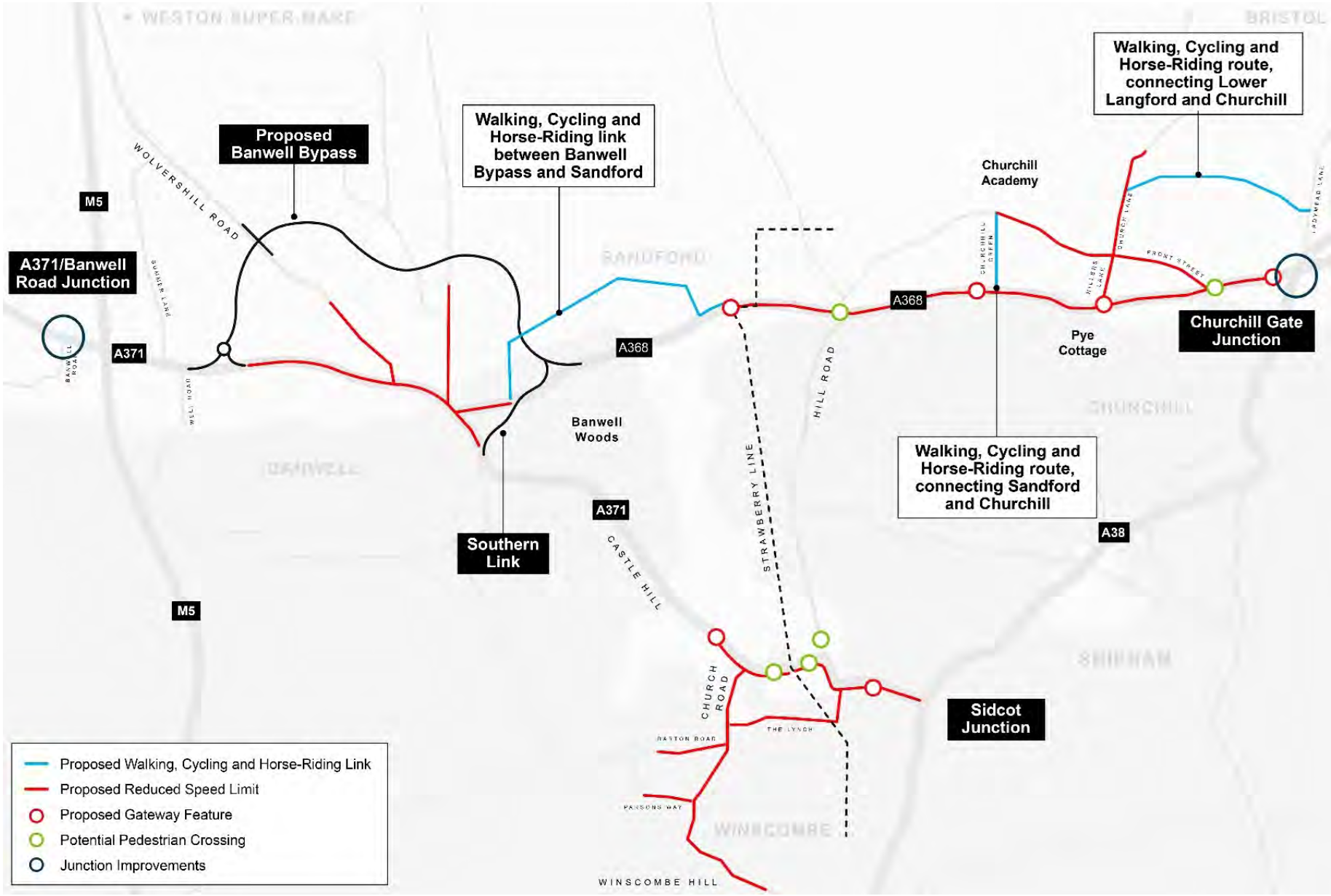


Image 12: Improvements to the wider local road network

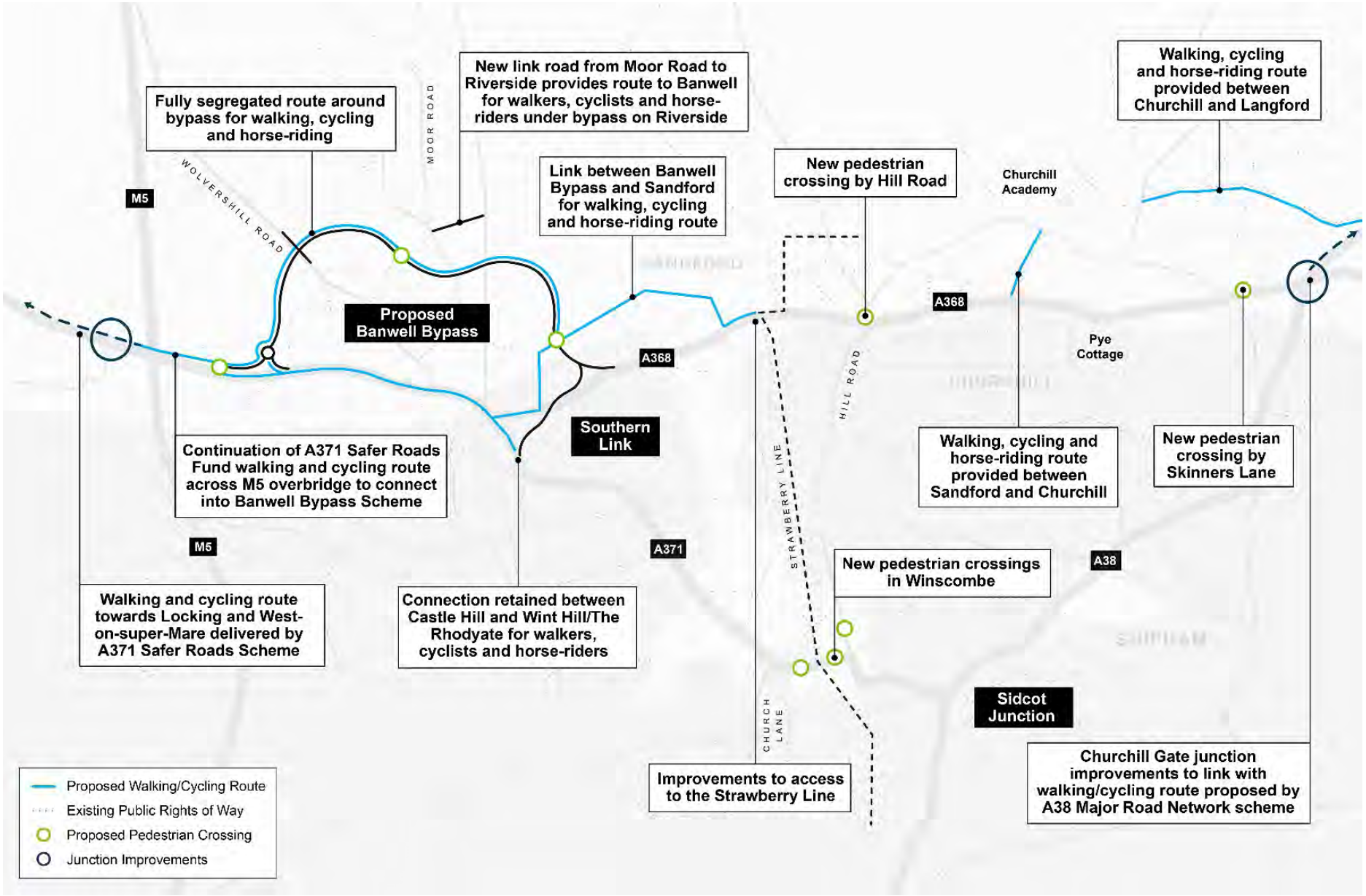


Image 13: WCH Routes

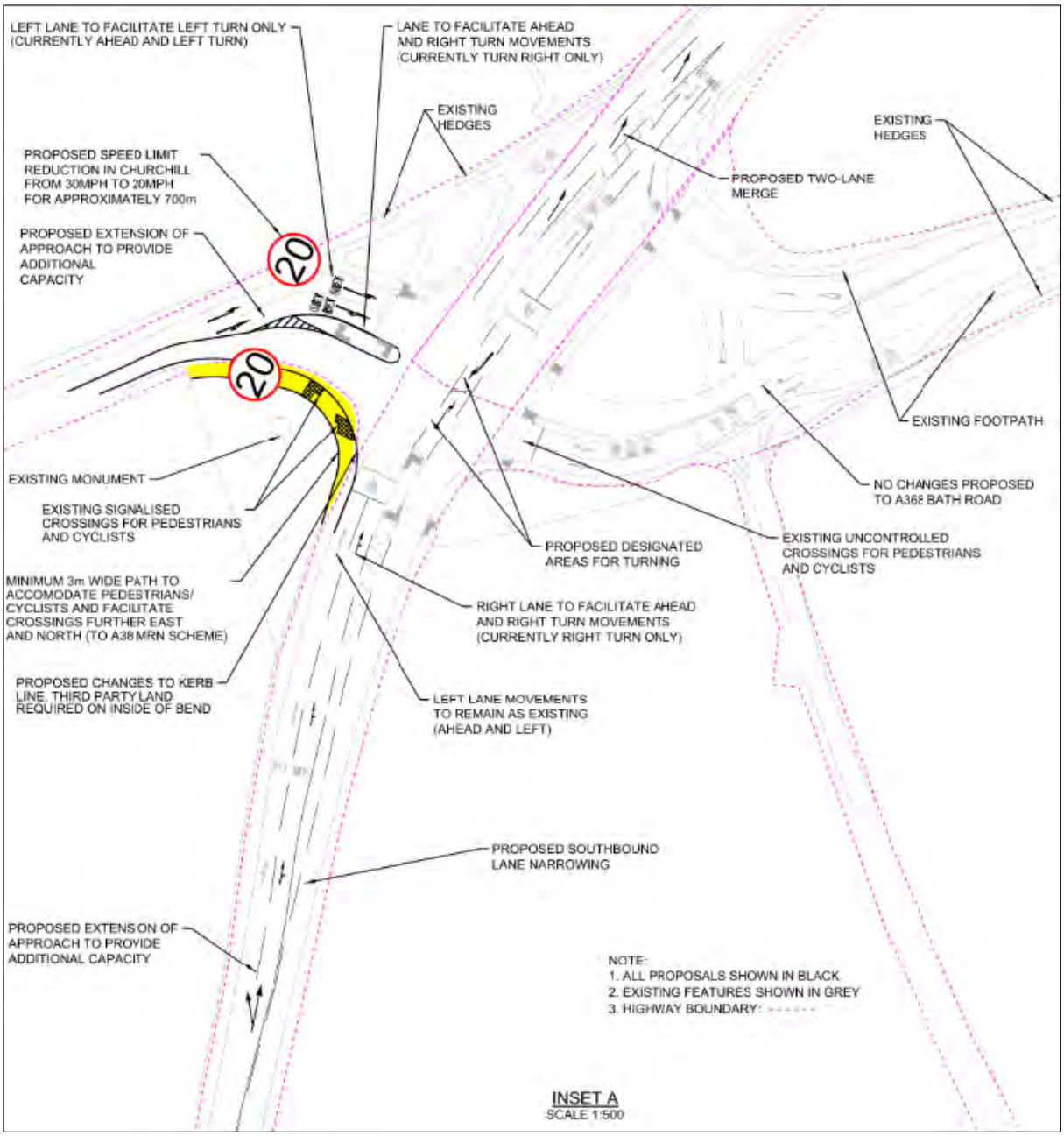


Image 14: Churchill Junction Improvements

Design development and key consideration

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

4.9.7 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.

4.9.8 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

4.9.9 Image 15 illustrates the proposals considered for mitigation to the wider road network. Image 15 should be read in conjunction with the ES Volume 1 Chapter 3 Table 3-5 which provides a summary table of all wider mitigation options considered with justification for inclusion or rejection when taking the design forwards.

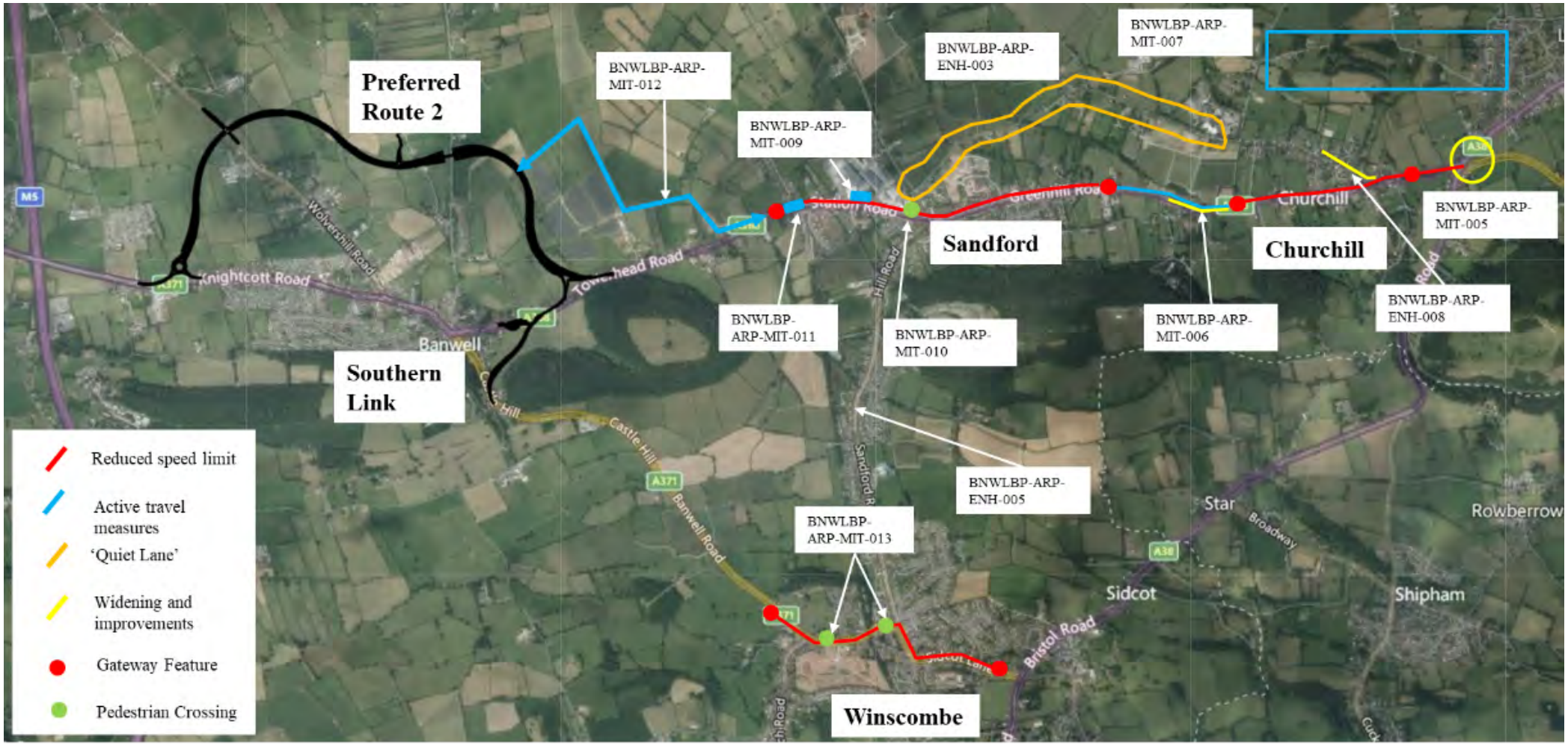


Image 15: Plan showing all wider network mitigation options considered

4.10 Active travel and Public Rights of Way

Description of the proposed development

4.10.1 A 3-metre-wide shared use path for walking, cycling and horse-riding will be provided alongside the majority of the proposed Banwell Bypass length, terminating at Ch. 2,600. From this location, the route branches off through the solar farm, heading to Sandford and the Strawberry Line, providing a continuous off-road connection with Weston-super-Mare. This will provide a dedicated route for walkers, horse riders and cyclists alongside the road.

4.10.2 The route will also provide links to Wolvershill Road, Moor Road and Riverside. To the West it will connect with the A371 Safer Roads Scheme (delivered separately by NSC) leading to Weston-super-Mare and to the East the route will link to Sandford, the Strawberry Line, and a return link back into Banwell.

4.10.3 One public footpath (AX3/6/10) is directly impacted by the Scheme. The Scheme provides a permanent diversion for this footpath. During construction, it is proposed to temporarily stop up this section of footpath. This approach has been agreed with NSC's PRoW officers.

Design development and key considerations

4.10.4 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 model shift from private car use.

4.10.5 Various options have been considered for a WCH route around the Banwell Bypass route, providing 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.

4.10.6 WCH routes will be secured via planning permission. The detail of crossing widths and signage would be provided at detailed design stage.

Table 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

Options	Description	Taken forward Y/N
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
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

4.11 Climate and innovative solutions

4.11.1 The Scheme has been designed to minimise adverse environmental effects on climate through the process of design development and consideration of good design principles. By assessing each option's carbon baseline at an early stage, GHG emissions were properly factored into the decision-making process for which option to take forward for detailed design. Design was undertaken in accordance with PAS2080 and the inclusion of sustainable travel being central to the design to allow mode shift.

4.11.2 The quantification of GHG emissions allowed carbon hotspots to be identified and inform carbon reduction strategies. Design elements which contributed the highest emissions were quickly identified which enabled results to be compared or for variations to be accounted for by highlighting differences in methodologies.

4.11.3 By using the carbon hotspots opportunities for further carbon reduction have been explored and implemented. These include but are not limited to:

a) Carriageway reduced from a dual and 4 lane single carriageway to a 2 lane single carriageway. This decision also removes the need for a central reservation.

b) Lane widths reduced from 3.65m to 3.4m

c) Removal of the hard strip 0.5m either side of north and southbound lanes

d) Foot/cycleway moved to the bottom of embankment reducing earthworks. The proposed design now aligns with existing ground level where possible.

e) Foot/cycleway diverted from bottom of Banwell Bypass before the eastern junction removing the need for lighting at the Eastern Junction.

f) Steel road restraint system reduced from 3460m to 1310m.

g) Traffic flows, earthworks, land requirements and the most effective use of space were all considered when designing junctions. The Eastern junction now a T junction instead of a roundabout requiring less land and earthworks.

h) The Riverside Road Junction removed.

i) Wolvershill Road Junction downgraded from 5 lanes to 3 lanes.

j) Alterations to Moor Road junction would have less carbon footprint.

k) Minimising the amount of lighting as far as possible given road safety concerns. The overall column height was reduced from 10 to 8m.

l) Speed limit reduced from 50 to 40mph. The amount of emissions from vehicles directly correlates to the velocity of a vehicle via energy consumption factors, and therefore in general a reduction of speed results in less fuel consumed.

4.11.4 These decisions reduce the overall materials required to construct the scheme, reduce maintenance requirements, or reduce user carbon. Many of these decisions impact multiple carbon streams.

4.11.5 In total, the embodied carbon of the scheme has been reduced by 48% through these design decisions.

4.11.6 Note that some decisions cannot be quantified at this stage due to lack of data. For example, it is not possible to compare how reducing the speed limit or adding more sustainable transport options has impacted carbon from the baseline design to the current design due to limitations in the traffic model. It is believed that these decisions will have a positive impact on overall user carbon.

4.12 Achieving the objectives of the Scheme

4.12.1 Table 10 found within Section 4 of the Planning Statement details how the proposed development performs against objectives of the Scheme. Table 4 below summarises how proposed measures meet the Scheme objectives:

Table 4 - Measures compliance with Scheme objectives

Scheme objective	Measures compliance with objective
Improve the local road network to address existing congestion issues	The Banwell Bypass will reduce traffic levels on the A371 through Banwell Village by up to 78%.
Improve and enhance Banwell's public spaces by reducing traffic severance and improving the public realm	Placemaking improvements and enhancements will be made to Banwell village, with the introduction of traffic calming measures and footway widening that would reduce the dominance of the road. This will improve shared use path facilities and make Banwell a safer, more attractive place for the residents and visitors

Scheme objective	Measures compliance with objective
Provide the opportunity to increase active and sustainable travel between local villages and Weston-super-Mare	The design includes a separated, traffic-free shared use route running alongside the Banwell Bypass, and regular crossings of the Banwell Bypass are also proposed to maintain existing walking, cycling and horse-riding routes, whilst also creating new ones. Dedicated routes for walkers, cyclists and horse-riders are also proposed on roads which will no longer allow through traffic, such as Castle Hill, Eastermead Lane and Moor Road. To help support modal shift, a walking/cycling route from the Banwell Bypass through to Sandford to the north of the A368, will create a continuous, traffic-free route between Weston-super-Mare, Sandford and onwards via the Strawberry Line (National Cycle Route 26). In addition to a shared use path in Banwell and PRoW improvement between the A368 Churchill Green for cyclists and walkers. Furthermore, proposed new or improved pedestrian crossings will be provided in Sandford, Churchill and Winscombe. Improvements to the existing public footpath between the A368 and Churchill Green will be made for walkers. To the east of Churchill Academy, improvements will be made to the surfacing of existing PRoW footpaths towards Langford to make them suitable for cyclists.
Deliver infrastructure that enables housing development (subject to Local Plan)	Whilst Local Plan and subsequent future housing still needs to go through a process to become adopted policy, the Banwell Bypass is vital to support its delivery as it improves access to any homes, employment, and education in the area. Any additional increases to traffic as a result of future housing has been considered in the Banwell Bypass traffic modelling and subsequent development of the Scheme

Scheme objective	Measures compliance with objective
Ensure the development respects the local area and minimises visual impact upon the surrounding countryside and Mendip Hills Area of Outstanding Natural Beauty (AONB)	To minimise any visual impact on the surrounding countryside, the Scheme's current landscape design considers views both to and from the countryside and AONB. Fields severed by the Banwell Bypass create opportunities to retain the existing layout of fields in the area with space for habitat creation, landscape integration and further screening, such as hedgerows, to obscure the Banwell Bypass from view. Consideration has been given to walking, cycling and horse-riding routes and other mitigation features, such as the attenuation basins, and how these can be properly integrated with the landscape
Innovative and efficient in reducing and offsetting carbon from the design and construction of the infrastructure	The design has considered a 'Whole Life Carbon' impact of the Banwell Bypass. By doing this, carbon reduction measures have been built into the Scheme design. This includes sustainable construction practices/innovations, as well as operational carbon benefits through reducing vehicle congestion.
Ensure the development provides the opportunity to increase Bio-Diversity Net Gain by at least 10%	The Scheme would deliver a minimum of 40% Biodiversity Net Gain (BNG), which exceeds the scheme objective for 10% BNG. This will provided by creating habitats for biodiversity, for example by planting local native species hedgerows and woodland; developing wildflower and wet meadows, improving river corridors, replacing wildlife pond and providing bird, dormice and bat boxes.
Proactively engage with stakeholders in a way that is both clear and transparent	Two public consultation events have been undertaken and discussions with stakeholders.

Complying with modern design standards

4.12.2 The Banwell Bypass will provide an enhancement to safety given that it will be designed to modern standards with a long-life expectancy to minimise maintenance requirements. The design has been subject to a Stage 1 Road Safety Audit (RSA), which is the first stage of an ongoing process of providing an effective, independent review of road safety implications.

4.12.3 Due to the strategic nature of the route in the local area, and the requirements of NSC's Highways Development Design Guidance, the Banwell Bypass and Highway Improvements are designed using the principles set out within to the requirements of the DMRB.

4.12.4 Infrastructure has been designed based on relevant guidance, for example cycling infrastructure has been based on Local Transport Note 1/20. This has helped ensure best practice design principles and processes have been followed.

Mitigating and enhancing the environmental impacts

4.12.5 Embedded environmental design measures that are included in the Scheme include:

a) Oversized culverts, providing flood mitigation retaining the rhyne network, and biodiversity connectivity through the use of mammal ledges and amphibian crossings.

b) Design of Banwell River bridge for landscape integration, single span crossing covering Riverside, the River Banwell and un-named rhyne, maintaining visual connections, use of stone cladding to soften impact to reduce visual impact;

c) Boundary fencing;

d) Vertical and horizontal alignment including positioning of the western and eastern junction to avoid sensitive receptors;

e) Sustainable drainage systems - Attenuation basins, swales, rhynes etc to provide biodiverse habitats and improve water quality;

f) Carefully located and minimising overall street lighting, restricted to junction and section of the Southern Link;

g) Shared use path, designed for users, bounded by hedgerows where appropriate to fit within the local landscape and to link into the wider PRoW network;

h) Improvements to wider network to include speed limits, traffic calming, highway safety improvements; and

i) Documents to include the Construction Environmental Management Plan (CEMP); Landscape and Environmental Management Plan (LEMP); and relevant permits, licences, and consents.

4.12.6 Essential mitigation, which is mitigation required for the Scheme, but which is not integral to the engineering design includes the following:

a) Retained vegetation, retention of field boundaries, translocation of hedgerows, coppice stools where appropriate etc

b) Scheme planting for landscape integration, visual screening, and habitat creation, to include species rich hedgerows, native woodland and woodland edge planting, specimen trees, areas for rewilding and a mosaic of grassland and wildflower meadows;

c) Flood compensation areas to compensate for loss of flood storage capacity. These would include biodiversity measures to include scrapes, reptile hibernacula, wet meadows etc;

d) Noise attenuation barrier on Southern Link;

e) Provision of bat, bird and dormouse boxes and other hibernacula, resting places, bat hop overs etc;

f) Mammal and other environmental fencing;

g) Gateway features;

h) Replacement wildlife pond to replace the pond adjacent to Riverside that would be lost to the Scheme;

i) Access to severed land; and

j) Access to individual field parcels.

4.12.7 The environmental mitigation measures proposed within this ES are illustrated on the Environmental Masterplan (refer to Planning Document – Environment Masterplan) and follow the ‘Functions’ and ‘Elements’ methodology as outlined in DMRB.

4.12.8 The environmental mitigation measures proposed within this ES are illustrated on the Environmental Masterplan (refer to Planning Document – Environment Masterplan) and follow the ‘Functions’ and ‘Elements’ methodology as outlined in DMRB.

4.12.9 The Landscape and Ecological Management Plan (LEMP)

accompanies the detailed Environmental Master Plans (EMP) and Series 3000 specification drawings. These cover landscape and ecology mitigation and enhancement works associated with the Scheme. The purpose of the LEMP is to guide the maintenance and management of the landscape and ecology elements throughout the construction, five-year aftercare and inform the long term maintenance of the Scheme. Refer to ES Volume 3 - Appendix 16.C for the Pre-Construction LEMP.

4.12.10 An outline Maintenance Environmental Management Plan (MEMP) would set out all long term (years 6-30) management of landscape and ecological features on the site would be the responsibility of NSC. An outline MEMP would be prepared at the end of the design and construction phase, a full MEMP would be prepared at the end of the first five-year contract period. The MEMP is a refinement of the LEMP based on the completed Scheme and any additional data acquired over the contract period.

Responding to stakeholder feedback

First Banwell Bypass and Highway Improvements non-statutory consultation (5 July 2021 to 16 August 2021)

4.12.11 All consultation responses received were analysed to understand individual views, opinions and suggestions on the Banwell Bypass and highway improvements to minimise potential impacts of the scheme.

4.12.12 Responses to closed consultation questions were collated and analysed in detail to understand the overall findings and to identify key differences in responses from the range of user groups.

4.12.13 All free text responses were analysed in two stages:

a) Analysis by theme
Identifying common topics and ideas that came up repeatedly to produce a high-level summary of the responses.

b) Identification of ‘matters’ raised
Looking at individual suggestions raised within each of the key topics and themes and, where appropriate, combining them to form a single overarching matter.

4.12.14 A total of 1,135 formal survey responses were received during the consultation period and a further 37 letters and written responses were also returned to NSC.

4.12.15 The key findings include that an overwhelming majority were either 'very concerned' or 'somewhat concerned' about the current situation on the A371 through Banwell, the A368 between Banwell and Churchill, and the A371 between Banwell and Winscombe. This concern was based on road safety, traffic congestion, impact on residential properties (air quality and noise), impact on employment and business, impact on schools, doctors (and other services), and walking and cycling facilities.

4.12.16 Traffic congestion and delay was considered the highest area of concern by respondents for various routes through Banwell and onwards to local villages. The second highest votes under the category 'very concerned include 'the impact of traffic on residential properties for the A371 through Banwell', 'walking and cycling facilities along the A368 between Banwell and Churchill', and road safety along the A37 between Banwell and Winscombe'.

4.12.17 The public ranked the Scheme objectives in order of importance. 'Improve the local road network to deal with existing congestion issues' was the most important with 44% of the votes. The second most important was to 'Protectively engage with stakeholders in a way that is both clear and transparent', followed by the objective to 'Ensure the development respects the local area and minimises visual impact upon the surrounding countryside and Mendip Hills AONB'.

4.12.18 Overall, Route 2 was the most popular option. 46% of respondents selected Route 2 as the best option which achieved the Scheme objectives. The public opinion was for a single carriageway, a 40mph speed limit and no preference for the Riverside junction.

4.12.19 Regarding Banwell placemaking, mainly local residents spent time in Banwell Village, those who responded ranked traffic measures as the highest priority for placemaking measures. Wider network (Sandford, Winscombe and Churchill) mitigation measure preferences were more varied, there was a relatively even split between highway improvements, traffic measures,

cycling and footway improvements, and air quality and noise mitigation measures.

4.12.20 The following points were observed from the written responses received in response to the public consultation:

a) Principle of needing to overcome traffic issues in Banwell is generally supported, with most recognising the Banwell Bypass as the most appropriate solution.

b) Concern around the Banwell Bypass resulting in additional traffic through villages along the A371 and A368 (namely Churchill, Langford, Sandford and Winscombe). Many respondents request additional highways measures to mitigate these impacts, including a Banwell Bypass directly to the A38. These concerns came largely from residents of these villages.

c) Impacts upon neighbouring settlements will need to be fully assessed and appropriately mitigated.

d) Concerns from landowners around loss of land, particularly related to route 2.

e) Residents of Banwell generally resist the loss of the football pitches at Banwell Football Club, identifying them as important community assets.

f) Concerns around amenity impacts (noise, pollution, etc) during construction and operational stages, particularly residents of Banwell.

g) Concerns around environmental impacts, particularly biodiversity and flood risk. Issues have also been raised around impacts on the AONB and Groundwater Source Protection Zone related to the Southern Link Road. Impacts upon increased traffic within Churchill Conservation Area also raised.

h) Respondents requested that further traffic modelling information is made available and included analysis to show impact of proposed future housing development.

i) Many respondents would like to see a better connected network of pedestrian/cycle routes as part of the wider scheme of improvements.

4.12.21 There were several recurrences of specific topics throughout the consultation survey as detailed below:

a) Housing – in particular, concern for development between the Banwell Bypass and existing village.

b) The potential impact to the villages of Banwell, Sandford and Churchill and the opinion that the Banwell Bypass is just ‘pushing the problem on’.

c) Visual and noise impacts of the Banwell Bypass, many comments relating to Summer Lane Park Homes and the proximity of the roundabout at the western end of the Banwell Bypass.

d) Improvements to sustainable travel options; an increase to public transport provision, improvement to footways, safer walking routes to school, provision of cycleways linking surrounding villages, Strawberry Line and to Weston-super-Mare and safer routes/consideration for horse riders.

e) The impact on Banwell Football Club if route 2 is selected.

f) HGV’s – restricting the access of larger vehicles to improve road safety.

g) The relevance of the Banwell Bypass and whether matters could be resolved by placement of traffic lights at the crossroads/narrow sections of Banwell.

h) The need for speed reduction, traffic calming and favouring of 20mph zones to improve road safety.

i) A request to protect green spaces and the countryside – provision of habitat corridors and tree planting to lessen visual/noise impact of Banwell Bypass.

j) Why a longer Banwell Bypass of Banwell, Sandford and Churchill connecting to the A38 is not proposed.

k) Concern that the Banwell Bypass for Banwell will only be a short-term solution (this isn’t future proof) and that further housing development will result in the need for further transport mitigation.

4.12.22 The recurring themes and questions arising from the consultation responses have been fully addressed comprising the outcomes of the consultation, this is outlined in the ‘Outcomes of the consultation’ section of the first Consultation Report (see Planning Document – First Consultation Report). .Table 5 below provides a summary of how the consultation responses have been addressed in the Scheme design.

Table 5: Summary of first consultation responses

Recurring themes and questions	Response
Consideration to new traffic lights in Banwell rather than building the Bypass	Initial assessment of the traffic light sequencing suggested that traffic queues on each of the five roads would build due to the delay in waiting for the traffic lights to turn green. The impacts from the traffic queuing at each of the five arms would potentially have been worse than the existing situation, and as such would not meet the scheme objectives.
Restrict access for HGVs through Banwell, Winscombe and Sandford	The Banwell Bypass would significantly reduce the number of HGVs travelling through Banwell. Mitigation measures introduced to reduce impact on local communities such as reduced speed limit.
Better connections needed for walking and cycling	Opportunities identified [and now implemented] for improvements to the active and sustainable travel network around Banwell include: the potential for better connections for walkers and cyclists between Weston-super-Mare and the Strawberry Line, and the potential for making Wolvershill Road more attractive for walking and cycling.
Safer routes to Churchill School	Options to offset the impacts of the bypass in villages surrounding Banwell were considered [and have now been implemented based on the outcome of assessments]. This includes additional footways - as well as the improvement of existing footways - along the A368 which would provide better access to Churchill Academy from surrounding communities.
Concerns of rat running along Wolvershill Road and Riverside especially due to the Scheme	Consideration of options to offset impacts in the villages surrounding Banwell, as well as the addition of possible enhancements to villages as part of, or separate to, the bypass scheme, were considered. Side road improvements to avoid “rat running” and improve active / sustainable were considered.

Recurring themes and questions	Response
An east-west cycleway or footway through Banwell would be more direct and convenient than one along the bypass	The Banwell Bypass would remove the majority of traffic from the village, which would provide opportunities to improve the existing routes through the village. Opportunities such as improved active travel routes and facilities, additional road crossing points and shared public spaces were considered. A new footway/cycleway running alongside the Banwell bypass was considered in addition to - rather than a replacement for - improvements being considered for the route through Banwell.
Could 20mph speed limits be implemented in Sandford or other surrounding communities?	Options to offset impacts of the bypass in the villages surrounding Banwell and on routes towards Weston-super-Mare, including speed limit enforcement measures were considered.
Why is there no proposal to link direct into the M5 further north?	A connection between the proposed bypass and the M5 was not part of the funding bid and is not needed to meet the scheme's objectives. As a result, the connection is not being explored in the design.
Concerns around impacts on horse-riding due to the Scheme	Possible impacts on equestrians were identified in a Walking, Cycling and Horse-riding assessment. Assessment will be detailed further as design progresses. Opportunities to improve horse riding around Banwell were identified as part of this assessment. The feasibility of implementing these opportunities were considered during development of the scheme's design.
Concerns around the potential impact of Route 2 on Banwell Football Club	Measures to reduce the impact on the recreation grounds (as far as reasonably practical) were considered during design. This included refining the route alignment to reduce the direct impact on Banwell Football Club and its pitches.

Recurring themes and questions	Response
Concerns around environmental impacts to Summer Lane Park Homes and walking / accessibility concerns to/from the site and local facilities, Bus Stops, and Banwell village	An Environmental Impact Assessment was undertaken, which included Noise and Air Quality assessments. These assessments determined whether any specific mitigation measures were needed to offset adverse noise or air quality impacts caused by the bypass. Measures to maintain, and potentially improve, the walking, cycling and public transport connections between Summer Lane Park Homes and local villages were also pursued during the development of the scheme's design. Residents of the Summer Lane Park Homes were consulted as the design progressed.
Concerns about additional housing, especially the potential infill of housing between the bypass and Banwell. A preference to maintain and protect green spaces between the bypass and Banwell, and protecting habitat and ecology areas, has also been indicated	The bypass design team worked closely with North Somerset's local planning team to ensure the scheme is effectively integrated into any new development proposals in the area. This included consideration of how the land between the bypass and existing village is utilised. Ensuring the opportunity to increase Biodiversity Net Gain (BNG) by at least 10% is one of NSCs objectives for the Scheme.
Why not build a longer bypass of all communities along the A368, eventually connecting into the A38 to the east?	A longer bypass of Banwell, Sandford and Churchill was previously considered by the Council, however, due to funding availability, early assessments of this option envisaged a phased approach to bypass delivery. The current Housing Infrastructure Fund requirements do not align with the time needed to deliver such an extensive bypass network, with the costs considered prohibitive at this time.

Recurring themes and questions	Response
How is the scheme being 'future-proofed' for future traffic demand? Would it not need to be upgraded to a dual carriageway in the future?	Based on capacity, neither existing levels of traffic nor the expected volumes of bypass traffic justified a full dual carriageway.
Should roads be built given that North Somerset Council have declared a climate emergency?	North Somerset has a growing population and so there is a demand for more new and affordable homes to meet the region's need. The UK Government have also set local authorities house building targets to help deal with the national housing crisis. Whilst urgent action must be taken on climate change – and NSC have declared a climate emergency and ambition of carbon neutrality by 2030 in recognition of this - this must also be balanced against the need to provide our growing communities with places to live. Banwell bypass has been funded through Homes England's Housing Infrastructure Fund, which aims to provide the infrastructure needed to deliver these new homes. The climate emergency remains of great importance and one of the bypass' scheme objectives is to innovatively and efficiently reduce and offset carbon from the design and construction. As such, opportunities to reduce carbon emissions in construction and use of the bypass were prioritised and progressed as the designs developed. It is also hoped that the bypass can have a lasting impact on carbon emissions in North Somerset, for example, moving traffic out of Banwell so that shared use paths for walking and cycling are safer and more attractive, encouraging local people to travel sustainably rather than using their cars. The scheme also provides opportunities to make active travel more attractive between local villages and Weston-super-Mare.

Recurring themes and questions	Response
What are the impacts of the Southern Link on the groundwater Source Protection Zone (SPZ)?	Following the findings of the ground investigation, the design prevents any potential impacts (such as infiltration through the embankment from the road drainage) and minimises ground disturbance as far as is reasonably practicable. This has been outlined within the ES. The relevant authorities were consulted throughout the design process, with meetings held with the Environment Agency and Bristol Water. The Environmental Statement includes a Hydrogeological Impact Assessment which outlines any impacts on the SPZ.
Does the traffic modelling take future traffic increases into account? When will this data be made publicly available?	The traffic model assesses future traffic increases on the existing highway network both with and without the bypass and wider network enhancements that result from general population growth and known / planned development. The design year for assessment is typically 15 years post opening. A traffic assessment is part of the planning application submitted for the Scheme.

Second Banwell Bypass and Highway Improvements non-statutory consultation (10 March 2022 to 22 April 2022)

4.12.23 This was a supplementary non-statutory consultation to gather feedback to help inform particular elements of the design development of the Banwell Bypass and associated proposed changes to Banwell village and its surrounding area, including measures to reduce likely impacts of the Scheme in nearby villages Sandford, Churchill and Winscombe.

4.12.24 In total, 441 responses were received to the online survey and 36 letters were received.

4.12.25 The feedback, along with the findings from the environmental surveys and technical investigations and assessments, will be used by the Council to decide how best to develop the Scheme and associated works to mitigate impacts resulting from the Banwell Bypass before the planning application is submitted.

4.12.26 As part of the consultation, the Council provided information about the Scheme and asked stakeholders including the public

for views on:

a) The latest iteration of the design of the Banwell Bypass and Southern Link.

b) Proposed improvements to the village of Banwell.

c) Proposals to nearby roads and villages, including measures to address likely impacts of the Scheme.

4.12.27 Information in support of the consultation included plans and drawings showing the latest design changes to the Banwell Bypass and Southern Link following feedback from the first public consultation. Information also showed and described proposed changes to Banwell village and proposed changes to nearby roads and villages. In addition, results of the latest environmental surveys and technical investigations and assessments were provided, to help evidence some of the latest decision making.

4.12.28 The key themes identified were:

a) Horse riding: comments on need for improved access lack of consideration.

b) Wolvershill Road: comments on design and proposals and general objection to access restrictions.

c) Rat running: comments concerning increased/worsening of rat runs and traffic in surrounding villages.

d) Impact on greater horseshoe bats should be considered more.

e) Negative impact on farming and risks to livestock.

f) Concern over associated new housing being delivered.

g) Comments regarding biodiversity net gain.

h) Speed restrictions: the proposed 20mph speed limits were acknowledged, but further measures are considered necessary to slow traffic. It was suggested that speed cameras are installed.

i) Churchill Academy: it is important that Churchill Academy students have a safe route to school and therefore a controlled pedestrian crossing point should be provided on the A368 Dinghurst Road close to the junction with Hilliers Lane bus stop.

j) Requests that mitigation measure budget is ring fenced to ensure funds are not used in over-spend of constructions costs.

4.12.29 The recurring themes and questions arising from the consultation responses have been fully addressed comprising the outcomes of the consultation, this is outlined in the 'Outcomes of the consultation' section of the first Consultation Report (see Planning Document – Second Consultation Report). Table 6 below provides a summary of how the consultation responses have been addressed in the Scheme design.

Table 6: Summary of second consultation responses

Recurring themes and questions	Response
Will horse riders be able to use the shared use path?	As part of the design development, we have held walking, cycling and horse-riding stakeholder engagement workshop (via a webinar), have consulted with local horse riders and horse riding groups, as well as consulted with the British Horse Society, Sustrans, and other user groups. Horse riders will not be prohibited from using the proposed shared use path proposed as part of the bypass. This includes any new path being provided as part of the Scheme.
What are your plans for Moor Road?	Based on further design development and consultation feedback, we have updated the proposals for Moor Road to ensure access for all users. The updated design provides a direct highway link between Moor Road and Riverside. This link would provide access for vehicular traffic as well as walking, cycling and horse-riding users. The width of the highway would be in-keeping with the existing width of Moor Road. A new overbridge of the River Banwell is proposed as part of the link.

Recurring themes and questions	Response
Can the reduced speed limit zones be extended to include more areas?	Speed limits are only one element of speed management and local speed limits should not be set in isolation. They should be part of a wider package of measures to manage speeds, which include engineering and/or landscaping measures, and visible interventions, that respect the needs of all road users and raise the driver's awareness of their environment. There is national and local guidance regarding the implementation of 20mph zones, and the areas that they can be implemented. In general, they are only considered on built-up village streets which are primarily residential in nature. The purpose is for the speed limit to be self-enforcing, and that a route looks and feels like the limit. There are some areas along the A368 (between Sandford and Churchill) and A371 (Banwell and Winscombe) which are considered rural in nature, and as such would not usually be considered for a 20mph speed restriction when following national and local guidance. Whilst a 20mph speed restriction has not been implemented along these lengths of road, the speed limit has been reduced. For example, the existing 40mph speed restriction between Sandford and Churchill is proposed to be reduced to 30mph under the Scheme proposals. Since the second consultation, we have made some amendments to the new speed limit zones. This includes extending 20mph zones where possible to make the routes safer and more attractive for walkers, cyclists, and horse riders. An example of this is where we have extended the proposed 20mph speed restriction east of Sandford so that it improves safety for users of the public right of way proposed as part of the Scheme, which is part of the proposed route to Churchill Academy from Sandford.

Recurring themes and questions	Response
How will proposed speed limits be enforced?	We have designed the Banwell bypass and the proposed measures for Banwell village, Sandford, Winscombe and Churchill so that they help to regulate the speed of vehicles in the local area. As set out in our consultation booklets, the proposed measures have been designed so that vehicle speeds through the village are self-enforced through the use of carriageway narrowing, additional crossings, speed limit signage, changes to road surfaces and more. This is supported by national and local guidance, and by Avon & Somerset police guidance. There are currently no plans to provide a fixed safety camera to regulate traffic speeds as part of the Scheme. There are several mobile safety camera locations located along the A371 and A368.
Concerns raised over the extent of proposed measures in Sandford?	There were a number of concerns about road safety in Sandford, particularly due to the potential additional volume of traffic, and speed of traffic, in the village. To help address these concerns, we are proposing a number of features in the design. These include: a) extension of the 20mph zone towards Churchill as mentioned above, as well as a build out of the crossing point to the east of the primary school so that pupils can get to and from school more safely. We are also looking at including planting and additional road markings between the crossing point and 20mph zone. Concerns about the safety of pupils and parents accessing Sandford Primary School We have added additional features close to Sandford Primary School since the consultation feedback. This includes: b) filling in the bus stops outside the school so that there is more footpath space for the children and parents using them. This also helps narrow the road, so that buses stop in road to pick up and drop off. This provides extra traffic calming for vehicles travelling on the A368 during the school run.

Recurring themes and questions	Response
Concerns raised over the extent of proposed measures in Winscombe	To address concerns raised about the extent of the proposed mitigation measures in Winscombe, we have made a number of amends to the design. This includes extending the 20mph zone to include The Lynch and the introduction of an extra crossing point at the end of Sandford Road.
What more can be done for the Banwell village placemaking measures	We have updated the proposals at the Narrows and the Square following consultation feedback and discussions with Banwell parish council and local residents. This includes re-instating a kerb in front of a shop front, changes to the road and footway width, and amendments to the square in the vicinity of the Bell Inn.
Traffic lights would be a better solution to traffic issues in Banwell than a bypass	This was raised during the first consultation. Since then, we have completed further assessments of the option of introducing traffic signal controls in the narrow approaches to the Banwell Narrows. Our assessments project that a five arm traffic light system, as proposed in consultation, would result in an increase of 15 minutes or more to delays during peak periods. This is due to the time requirements for phasing the green lights at all 5 arms (West Street, Church Street, High Street, Castle Hill, and East Street). This modelling also does not include signal-controlled pedestrian crossings, which if provided would further impact on junction capacity due to the additional traffic light phasing requirement. This additional traffic delay would cause additional congestion through Banwell, which would exacerbate the existing issues that the proposed bypass seeks to alleviate. Due to the narrow and constrained nature of the streets, it would be difficult to place the required traffic lights in suitable locations to control traffic.

Recurring themes and questions	Response
Can the bypass to the A38 to ensure it passes Sandford and Churchill as well as Banwell?	A longer bypass of Banwell, Sandford and Churchill linking to the A38 has previously been considered by the Council. However, due to funding availability, early assessments of this option envisaged a phased approach to project delivery. The current Housing Infrastructure Fund requirements do not align with the time needed to deliver such an extensive bypass network, with the costs considered prohibitive at this time.
Concerns that Banwell village will be a rat run	The placemaking measures proposed as part of the Scheme have been designed in a way that will reduce traffic through Banwell village. They form an important function within the overall Scheme in deterring vehicles from travelling through Banwell.
Can there be improvements made to passing places for vehicles in Banwell	In response to this consultation feedback, passing places through Banwell village have been made longer to accommodate passing for vehicles.
Has a Walking, Cycling & Horse Riding Assessment and Equalities Impact Assessment been completed for the Scheme?	Both a Walking, Cycling and Horse-riding Assessment, and an Equalities Impact Assessment, have been undertaken. These will be publicly available when we submit the design to planning. At that point, there will be an opportunity for you to comment on the documents.
Request for information regarding the impacts proposed housing developments will have on the volume and speed of traffic in the future	Further detail around possible impacts of housing proposed through the Local Plan and its effect on the speed and volume of traffic will be included in the Transport Assessment. This will be available as part of the planning submissions and there will be an opportunity to comment on it as part of the planning process.

Recurring themes and questions	Response
The Banwell Bypass will result in negative impacts for the environment	An Environmental Statement has reported on the Environmental Impact Assessment undertaken for the Scheme and has been carried out in accordance with current legislation, guidance, and policy. It has highlighted both beneficial and adverse impacts associated with the Scheme under a number of environmental topic headings and also described how any adverse impacts could be avoided, mitigated, or compensated. A summary of the identified significant effects are outlined in Chapter 17 – Conclusion of the Environmental Statement. In summary, there is a range of beneficial and adverse impacts on the environment as part of the Scheme. These are set out in Appendix B.

Design review results

4.12.30 The design review panel meeting held on the 31 March 2022 was allocated a one-hour time slot. In this short amount of time, it was not possible to cover every aspect of the Scheme design in detail. The session was only intended to provide an overview of the Scheme with full detail provided upon submission of the planning application. As the Banwell Bypass is the largest component of the Scheme, the review focused on presenting the elements of the Banwell Bypass.

4.12.31 The design review panel outlined the key areas for reflection including whether the proposal is adequately context led, best assimilated into the landscape, expressing the character and identity of places and communities, contributing to conservation, considering placemaking and user experience, and delivering carbon resilience and biodiversity net gain.

4.12.32 Appendix A of this DAS provides the detailed comments from the panel and NSC response.

Statutory Consultees

4.12.33 The Scheme has incorporated comments from statutory consultees raised within and separately from the ELG sessions. For example, comments were raised from the Lead Local Flood Authority regarding the method of analysis of hydrocarbons

within the environmental assessment of surface water contamination. An additional method for assessing hydrocarbons was included within the road drainage and water environment assessment as a result (refer to ES Volume 1 – Chapter 14 – Road Drainage and Water Environment). Further comments raised by statutory bodies, such as the incorporation of hedgerows as a boundary treatment for the shared use path between the bypass and Sandford (refer to Planning Document – Wider Mitigation General Arrangement Plans) have also been incorporated wherever possible.

5 Design summary

5.1.1 This section sets out in summary, how the design response of the Scheme as set out in section 4, has addressed the design principles set out in section 3, and considers compliance with the relevant planning policy context including design policies described in section 3.3.

5.2 Landscape

5.2.1 As referenced in this DAS, the design approach carefully considers the local context, including the Mendip Hills AONB, Somerset Levels and Moors, Banwell Conservation Area landscape and its special qualities. Reflecting the local landscape framework and character through its design. The Scheme has been positioned to minimise landscape and visual effects, to avoid sites of ecological value, avoid environmental impacts, minimise harm to heritage assets and where possible avoid encountering archaeological sites. The Scheme minimises the use of road lighting, thereby minimising obtrusive light within the Mendip Hills AONB (where dark skies are an important features of the area).

5.2.2 As set out in section 3.3 of this DAS, and as part of the Scheme objectives, we have sought to ensure that mitigation, enhancement, and improvements are made to the landscape, creating a legacy for future generations. New green infrastructure, appropriate planting, habitat creation and re-establishment of field patterns and boundaries results in a Scheme which maximises Biodiversity Net Gain whilst improving the landscape by conserving and enhancing the natural vegetation characteristic of the area.

5.2.3 Through the removal of traffic from the centre of Banwell, there is an opportunity to respect and enhance the tranquillity of the historic landscape of the Banwell Conservation Area through the proposed placemaking measures in Banwell Village.

5.2.4 Structures and engineered proposals have been carefully considered to ensure they integrate with the landscape through locally characterised, mixed planting and habitats.

5.2.5 Through the use of appropriate materials and finishes that reflect the local vernacular style, harm to views of the Scheme in the landscape are minimised/mitigated (including appropriate landscaping and boundary treatments as part of the Scheme).

5.3 Biodiversity

5.3.1 Design, construction, mitigation and enhancement measures have been identified and integrated into the Scheme to avoid, prevent or reduce adverse environmental effects both during construction and operation of the Scheme. The Scheme includes opportunities to improve biodiversity ensuring there is at least 10% Biodiversity Net Gain as per the Scheme objectives.

5.3.2 The Scheme would deliver a minimum of 40% Biodiversity Net Gain (BNG), which exceeds the scheme objective for 10% BNG. This will be provided by creating habitats for biodiversity, for example by planting local native species hedgerows and woodland; developing wildflower and wet meadows, improving river corridors, replacing wildlife pond and providing bird, dormice and bat boxes.

5.3.3 Where the Banwell bypass severs fields, these been retained to reinforce the existing field layout and boundary features, ensure connectivity and habitats for protected species and help integrate the scheme into the surrounding landscape.

5.3.4 Where possible lighting is minimised along the Banwell Bypass, due to landscape and ecological concerns, the project team have minimised the extent of road lighting as far as reasonably practical without compromising on road safety. This protects the ecology of the area especially for bats, conserves dark skies in particular in association with the Mendip Hills AONB and reduces the carbon impact of the Scheme.

5.3.5 The Banwell Bypass and structures will protect the existing water bodies, culverts and the bridge at Riverside ensure that the connectivity for species using water bodies is preserved. The

drainage strategy includes swales and flood mitigation which provide the potential for ecological mitigation, flood mitigation and Biodiversity mitigation.

5.3.6 The design has avoided impact on trees and woodland wherever possible. However, as outlined within ES Volume 1 – Chapter 8 – Biodiversity, and ES Volume 3 – Appendix 7.D – Arboricultural Survey and Impact Assessment Report, a group of six hybrid / Black Poplar would be lost (the exact species would be confirmed when known from samples taken in June 2022). The loss of hybrid/black poplar would be replaced by new planting, but this impact would remain significant until the replacements have matured. Trees lost to the Scheme would be replaced through new planting along the Scheme.

5.3.7 Careful placement of structures, bridges, underpasses/culverts and mammal ledges in the culverts to form a family of structures with connectivity and enhancements considered for populations of notable or protected species.

5.4 People

5.4.1 Throughout the design process, there has been engagement with stakeholders through Environmental Liaison Group (ELG), Parish Council meetings, workshops and Parish Council Working Groups. Formal engagement and consultation with the local communities has also been carried out at key stages; first non-statutory consultation event (5 July 2021 to 16 August 2021) and second non-statutory consultation (10 March 2022 to 22 April 2022).

5.4.2 The consultation reports set out in detail how we carried out these consultations, the feedback received in response to the consultations and how we had regard to the feedback in developing the Scheme design.

5.4.3 The Scheme includes a range of placemaking and wider network measures to improve the historic centre of Banwell, reviving the heart of the village, and to improve the villages of Sandford, Churchill and Winscombe. The Scheme would improve accessibility connectivity for the local community through improved active travel, public rights of way and the provision of

pedestrian friendly streets, safer roads, and safe access to public transportation.

5.5 Climate

5.5.1 Carbon reduction outcomes have been carefully considered through design as an integrated climate led Scheme. The Scheme has been designed to minimise adverse environmental effects on climate through the process of design development and consideration of good design principles. By assessing each option's carbon baseline at an early stage, GHG emissions were properly factored into the decision-making process for which option to take forward for detailed design.

5.5.2 The design decisions reduce the overall materials required to construct the scheme, reduce maintenance requirements, or reduce user carbon. Many of these decisions impact multiple carbon stream. In total, the embodied carbon of the scheme has been reduced by 45% through these design decisions.

5.6 Compliance with design policies

5.6.1 The Planning Statement submitted with the planning application provides a detailed assessment of the how the Scheme complies with the relevant legislation and policies. This section provides an assessment of the Scheme against the relevant design and access policies only, seeking to avoid duplication where possible.

National policy

5.6.2 Chapter 12: Achieving well-designed places of the National Planning Policy Framework (NPPF) (2021) attaches great importance to the design of the built environment and states that, '*Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities*.' Whilst these statements are principally aimed at the built and architectural environment, they are also applicable to infrastructure development.

5.6.3 The NPPF also goes on to recognise the important contribution trees and ecological habitats make to the character and quality of urban (and infrastructure) environment and their role in mitigation and adaption to climate change.

5.6.4 The Scheme strives to create a better place in which to live and work for Banwell and the surrounding villages as demonstrated through section 5.4 of this DAS. Through the removal of traffic from the centre of Banwell and the proposed placemaking measures, the Scheme would restore a sense of place and community to Banwell. The placemaking improvements in Banwell would be visually attractive, sympathetic to the Banwell Conservation Area functioning well with the local character, making Banwell a more attractive place to live work and visit.

5.6.5 The Scheme also provides an opportunity to improve much of the surrounding areas, in particular Sandford, Churchill and Winscombe. The improvements to the wider local road network would improve the overall quality of these areas, improving connectivity, making these places more welcoming to work, live and visit.

5.6.6 Chapter 15 focusses on conserving and enhancing the natural environment. In the context of transport schemes, alongside protecting valued landscapes an providing net gains for biodiversity, this requires new schemes to prevent contribution to noise or air pollution. Paragraphs 170, 180 and 181 state that development should help to improve local environmental conditions, such as air quality.

5.6.7 In relation to heritage assets and townscape, the Government's objective is for Local Authorities to create policies that set out a positive strategy for the conservation and enjoyment of the historic environment, taking into account, *'the desirability of new development making a positive contribution to local character and distinctiveness; and opportunities to draw on the contribution made by the historic environment to the character of a place'.* (paragraph 190 NPPF)

5.6.8 The Scheme fulfils this policy requirements set out in Chapter 15 through the design to minimise impact to the natural environmental and valued landscape. The environmental mitigation and enhancement measures in connection with the Banwell Bypass and the Southern Link focus on conserving and enhancing the natural environment demonstrated through a greater than 40% BNG.

5.6.9 Chapter 14 focusses on supporting the transition to a low carbon future in a changing climate, taking full account of flood risk and

coastal change. The Scheme is innovative and efficient in reducing and offsetting carbon from the design and construction of the infrastructure as illustrated in section 4.11 of this DAS.

5.6.10 The Scheme takes full account of climate change and flooding and has been designed accordingly. Further details are provided in the ES and FRA, which accompany this planning application.

Local policy

5.6.11 The relevant policies of the North Somerset Council Core Strategy and The Development Management Policies are listed in Table 7 below.

Table 7: Local design planning policy compliance

Policy		Relevant Details of Policy	Scheme compliance
North Somerset Council Core Strategy Policies			
CS3	Environmental impacts and Flood Risk Management	Recognises that much of North Somerset is low lying and therefore susceptible to flood risk and climate change and looks to accommodate and future proof development 'Sustainable drainage systems (SuDS) are the preferred approach to dealing with surface water run-off. Planning for major developments should explore 32 possibilities for SuDS, especially as part of multi-functional green infrastructure.'	Flood modelling has been undertaken to inform the FRA in accordance with Policy CS3. A Surface Water Drainage Strategy has also been prepared.
CS4	Nature Conservation	Recognises that North Somerset contains some outstanding wildlife habitats and species and that the enhancement, retention and protection of these habitats are an important consideration of new development and therefore of its landscape treatment and understanding. Stating that the biodiversity of North Somerset will be maintained by, '…seeking to ensure that new development is designed to maximise benefits to biodiversity, incorporating, safeguarding and enhancing natural habitats and features and adding to them where possible, particularly networks of habitats. A net loss of biodiversity interest	

Policy		Relevant Details of Policy	Scheme compliance
		should be avoided, and a net gain achieved where possible; seeking to protect, connect and enhance important habitats, particularly designated sites, ancient woodlands and veteran trees; promoting the enhancement of existing and provision of new green infrastructure of value to wildlife; promoting native tree planting and well targeted woodland creation, and encouraging retention of trees, with a view to enhancing biodiversity.' It further states the importance of allied strategies and for the retention and protection of existing trees habitats and species, 'The policy reflects the importance of strategies very relevant to biodiversity, including the emerging Green Infrastructure Strategy. Green infrastructure includes linear green space which can provide valuable wildlife corridors. 3.68 The policy reflects the importance of trees for biodiversity, and regard must be had to the Biodiversity and Trees SPD, which includes guidance for developers on planning for biodiversity; e.g. screening for the presence of biodiversity, undertaking tree and ecological surveys and planning to protect, retain and manage existing trees, habitats and species.'	The ES and environmental masterplan have been informed by extensive surveys of the existing biodiversity resources. The Scheme conserves protected species, creates new habitats and mitigates for losses.

Policy		Relevant Details of Policy	Scheme compliance
CS5	Landscape and the Historic Environment	Recognises the importance of North Somerset's landscape, and the need to protect and enhance its diversity, distinctiveness, and quality: 'The character, distinctiveness, diversity and quality of North Somerset's landscape and townscape will be protected and enhanced by the careful, sensitive management and design of development. Close regard will be paid to the character of National Character Areas in North Somerset and particularly that of the 11 landscape types and 31 landscape character areas identified in the North Somerset Landscape Character Assessment. The Mendip Hills Area of Outstanding Natural Beauty (AONB) will be protected by ensuring that development proposals conserve and enhance its natural beauty and respect its character, taking into account the economic and social well-being of the area'.	The Scheme has been designed to integrate well into the landscape, informed by detailed surveys outlined in the ES. The Scheme presents the opportunity to improve the historic environment in and around Banwell.
CS9	Green Infrastructure	This policy recognises the importance and opportunities provided by the inclusion of green infrastructure in new development for the biodiversity, social and health and wellbeing aspects of the landscape. It stipulates that the, '…existing network of green infrastructure will be safeguarded, improved and enhanced by further provision, linking into existing	The Scheme includes significant upgrades to the existing public rights of way network in addition to, proposed active and sustainable travel routes. The

Policy		Relevant Details of Policy	Scheme compliance
		provision where appropriate, ensuring it is a multi-functional, accessible network which promotes healthy lifestyles, maintains and improves biodiversity and landscape character and contributes to climate change objectives.' Of specific relevance to this assessment are the following, • 'the protection and planting of trees in woodlands and urban areas, particularly native trees, for public amenity and climate change mitigation and benefits to biodiversity, health and recreation; • the promotion of the north slopes of the Mendip Hills AONB as sub-regional corridors for biodiversity, recreation and landscape retention; • the promotion of the Congresbury Yeo, River Banwell, North Somerset Levels and Moors, and Grumblepill Rhyne as local corridors for biodiversity and landscape enhancement;' and, • 'the continued development of a network of green spaces, water bodies, paths and cycleways and bridleways in and	proposed highway drainage ponds also present the opportunity for biodiversity creation. The proposed active travel routes would further connect the villages providing new green infrastructure routes.

Policy		Relevant Details of Policy	Scheme compliance
		around the urban areas, recognising the value of sustainable drainage systems for green infrastructure.'	
CS10	Transportation and Movement	Identifies Banwell Bypass as one of the key infrastructure schemes for the plan period, stating that, with relevance to landscape issues schemes should, • 'enhance the facilities for pedestrians, including those with reduced mobility, and other users such as cyclists;' and, • 'improve road and personal safety and environmental conditions; • reduce the adverse environmental impacts of transport and contribute towards carbon reduction.'	The proposed scheme is fully consistent with Policy CS10 in that it will deliver this important road Scheme.
CS12	Achieving High Quality Design and Place Making	This policy recognises that, 'North Somerset Council is committed to achieving high quality buildings and places across all of North Somerset,' as part of the design process schemes should,'…generate solutions that have clearly considered the existing context, and contribute to social, economic and environmental sustainability. As part of a comprehensive place-	The design of the Banwell Bypass based off the safeguarded route in the Local Plan, from this there has been extensive options appraisal assessments to

Policy		Relevant Details of Policy	Scheme compliance
		making strategy new development should function well, supporting sustainable land uses and seek to improve the image of the area.'	ensure the chosen route is the most beneficial to the area. The design has been further established through consultation with statutory consultees including the Environment Agency and two public consultations.
Development Management Policies: Site and Policies Plan			
DM9	Trees and Woodlands	Aims to, 'Incorporate existing trees and wooded areas into design proposals where practical. Ensure the planting of new trees is properly designed and adequately maintained in the longer term and recognise the place-making quality of trees.' Stating that, the development should, • 'Include, where practical, the introduction of appropriate new tree planting and woodland creation as an integral part of the design and landscaping of new developments, using native species of local origin wherever possible,' and,	Whilst every effort has been made to avoid the trees that are protected by a TPO, some losses have been unavoidable in order to have a road that will be constructible to highway design standards. Trees at risk of being lost will be mitigated for. Trees in the centre of Banwell would not be at risk.

Policy		Relevant Details of Policy	Scheme compliance
		• 'provide a plan for the management of wooded areas that balances the protection and enhancement of biodiversity with increased opportunities for recreation and play.'	
DM10	Landscape	Aims to, "protect and enhance the diversity, quality and distinctive qualities of the landscape of North Somerset, as identified in the North Somerset Landscape Character Assessment. Protect dark skies from light pollution and areas of greatest tranquillity from development." Stating that, the development should, • Not have an unacceptable adverse impact on the designated landscape character of the district as defined in the Landscape Character Assessment Supplementary Planning Document (2005) and respond to the distinctive qualities of the landscape…' • Be carefully integrated into the natural, built and historic environment, aiming to establish a strong sense of place, respond to local character, and reflect the identity of local surroundings, whilst minimising landscape impact.'	The landscape assessment (ES Volume 1 - Chapter 7) concludes that the landscape character areas are generally of, or above, Medium Quality or Sensitivity with the AONB representing a landscape of national significance. These character areas will experience long lasting significant impacts due to the introduction of the Scheme into the rural landscape context and the associated changes in landform. The impact on views will be variable however, and there will be a residual effect on

Policy		Relevant Details of Policy	Scheme compliance
		• Respect the tranquillity of an area. • Include appropriate landscaping and boundary treatments in the scheme. • Conserve and enhance natural or semi-natural vegetation characteristic of the area. • Respect the character of the historic landscape including features such as field patterns, watercourses, drainage ditches, stone walls and hedgerows. • Where outdoor lighting is proposed adopt a lighting scheme which minimises obtrusive light and where dark skies are an important feature of the area.'	some, in particular those near the proposed Banwell River Bridge. In general, the proposed embedded mitigation measures would reduce the visual impact to be acceptable over time and even enhance the integration of the Scheme into the landscape. As per section 5.2 of the Planning Statement, the Scheme complies with paragraph 177 of the NPPF which considers development in the AONB.
DM11	Mendip Hills AONB	This policy aims, 'To ensure that development would not harm the natural beauty of the AONB and that the priority consideration for all proposed development impacting on the AONB is the conservation, protection and, where possible, enhancement of its natural beauty.	ES Volume 1 Chapter 7 provides an assessment of the Scheme on the Mendip Hills AONB. There would be

Policy		Relevant Details of Policy	Scheme compliance
		To meet the economic and social needs of the local communities and the demand for recreation so far as this is consistent with the conservation of the natural beauty of the area and to protect views to and from the AONB.'	direct effects in relation to the Scheme in the vicinity of the southern link road and to the southwest of Banwell on the Mendip Hills AONB. The scale of the proposals in relation to the wider context of the AONB result in very localised construction stage and Year 1 changes to the landscape framework. There would be increased visibility of traffic travelling along the A371 as a result of vegetation removal to construct the proposed southern link road and alterations to the local landscape setting. These however would be contained within the dip in topography between Banwell Hill and Banwell Hillfort and would be short term during the

Policy		Relevant Details of Policy	Scheme compliance
			construction phase. With the establishment of mitigation planting, restoration, and enhancement of the landscape framework by Year 15 this is expected to revert to Neutral.
DM19	Green Infrastructure	Aims, 'To ensure new development contributes to the safeguarding, improvement and further provision of North Somerset's green infrastructure and that the provision of multi-functional, inter-connected and adaptable green infrastructure is taken into account in the design and layout of new development proposals.'. Of specific landscape relevance is that the development should be, 'designed to promote and enhance local diversity and distinctiveness.' The policy goes on to note that GI,' can enhance the townscape and visual amenity, promote a sense of place and community identity, and improve the health and sense of well-being of people' and that, 'Trees are important elements, contributing to the value of green infrastructure, notably regarding landscape and in combating climate	The Scheme includes significant upgrades to the existing public rights of way network in addition to, proposed active and sustainable travel routes. The proposed highway drainage ponds also present the opportunity for biodiversity creation. The proposed WCH routes would further connect the villages providing new green infrastructure routes. Mitigation includes the

Policy		Relevant Details of Policy	Scheme compliance
		change. Attenuation ponds and other sustainable drainage systems are other elements, often having ecological, landscape, recreational and educational benefit.'	creation and restoration of habitats to improve biodiversity.
DM20	Major Transport Schemes	Includes Banwell Bypass and aims to: "protect proposed major transport schemes from inappropriate development and show the safeguarded areas on the Policies Map."	The proposed Scheme is wholly consistent with this policy as involves the implementation of the 'Banwell Bypass'.
DM32	High quality design and place making	Seeks to ensure the design of new development should contribute to the creation of high quality, distinctive, functional and sustainable places. The design and planning of development proposals should demonstrate sensitivity to the local character, including the setting, and enhance the area taking into consideration any specific opportunities present. Design solutions should seek to enhance local distinctiveness and contribute to the creation of a sense of place and identity.	The design of the Banwell Bypass based off the safeguarded route in the Local Plan, from this there has been extensive options appraisal assessments to ensure the chosen route is the most beneficial to the area. The design has been further established through consultation with statutory consultees including the Environment Agency and two

Policy		Relevant Details of Policy	Scheme compliance
			public consultations. The place making design has been subject to public consultation with non-statutory and statutory stakeholders, surveys and investigations in accordance with national and local planning policy.
Supplementary Planning Guidance			
SPG	North Somerset Council Landscape Character Assessment – Supplementary Planning Guidance	Adopted as Supplementary Planning Guidance in September 2018 the assessment provides a refinement of National Character Areas (NCA) on a more regional/local scale. The Landscape Character Areas affected by the Scheme are discussed in more detail within the Landscape Baseline.	The landscape assessment (ES Volume 1 - Chapter 7) concludes that the landscape character areas are generally of, or above, Medium Quality or Sensitivity with the AONB representing a landscape of national significance. These character areas will experience long lasting significant impacts due to the

Policy		Relevant Details of Policy	Scheme compliance
			introduction of the Scheme into the rural landscape context and the associated changes in landform. The impact on views will be variable however, and there will be a residual effect on some, in particular those near the proposed Banwell River Bridge. In general, the proposed embedded mitigation measures would reduce the visual impact to be acceptable over time and even enhance the integration of the Scheme into the landscape. As per section 5.2 of the Planning Statement, the Scheme complies with paragraph 177 of the NPPF

Policy		Relevant Details of Policy	Scheme compliance
			which considers development in the AONB.

North Somerset Council: Green Infrastructure Strategy (2021)

5.6.12 North Somerset Council issued a Green Infrastructure Strategy (January 2021) covering the period up to 2030. The document sets out a strategic framework for improving the: '*connectivity, quality, and overall provision of GI, in order to maximise environmental, social and economic benefits and address diverse policy requirements including health and wellbeing, biodiversity and climate change*.' Throughout the county. It states that, *'Well planned and managed, functioning green infrastructure is crucial for people, places and nature and is a key component in tackling the nature and climate emergency.*'

5.6.13 The Strategy recommends that all new development, whether identified as part of the strategic GI network or not, should demonstrate how the provision, or quality improvements of GI, are delivered. It is further underpinned by adopted Core Policy and Development Management Policies at a strategic level.

5.6.14 The Scheme includes significant upgrades to the existing public rights of way network in addition to, proposed active and sustainable travel routes. The proposed highway drainage ponds also present the opportunity for biodiversity creation. The proposed WCH routes would further connect the villages providing new green infrastructure routes.

5.6.15 Mitigation includes the creation and restoration of habitats to improve biodiversity and landscape enhancement in the area. Including along the River Banwell which the Banwell Bypass intersects.

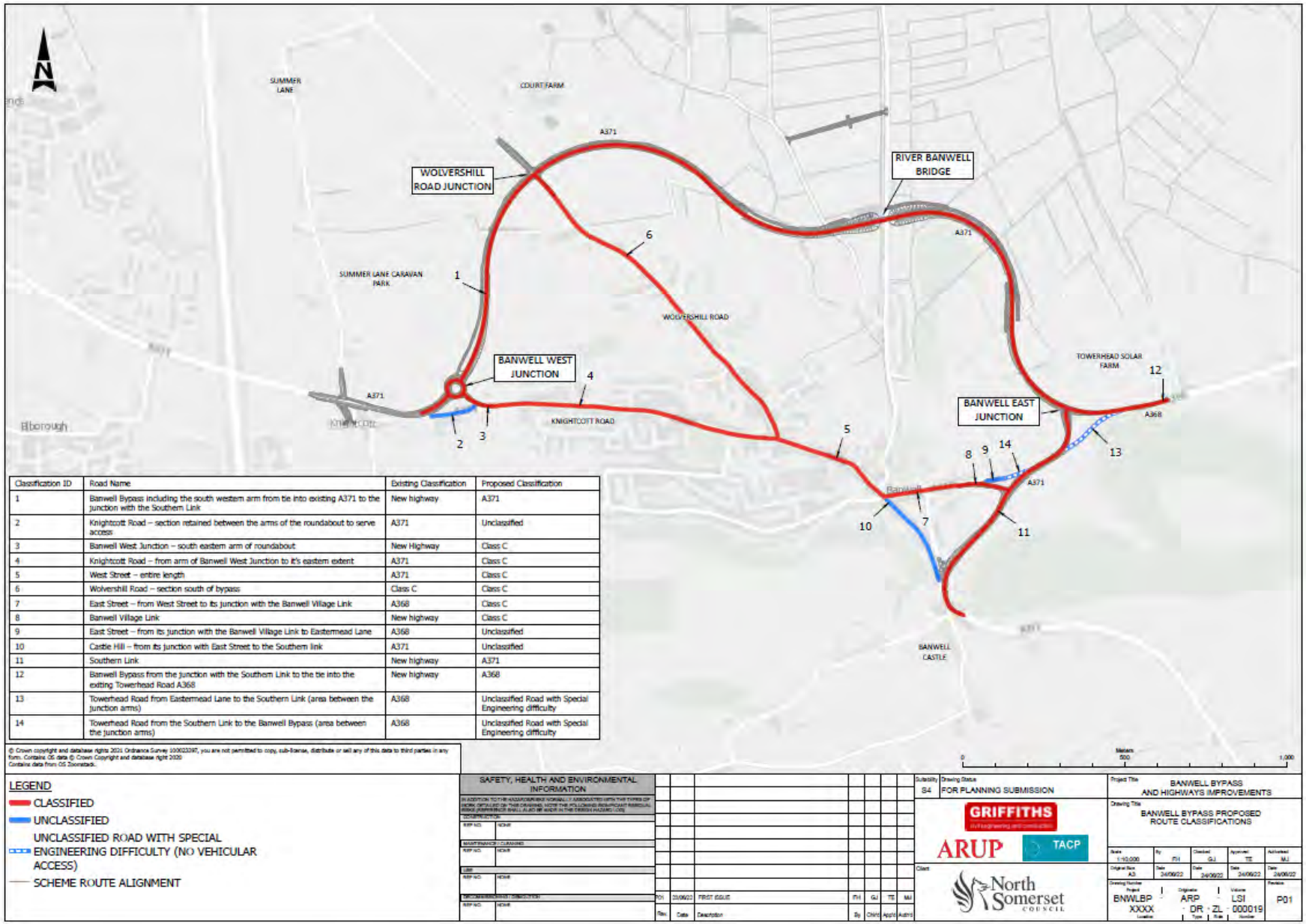
6 Conclusion

6.1.1 This DAS has summarised how the design development has been driven by the local land use and character, and the relevant policy drivers for good design. These have formed design principles to guide the Scheme positively responding to landscape and heritage, biodiversity, people and climate factors.

6.1.2 The design development of the Scheme has resulted in beneficial outcomes in terms of transport, economic, social and environmental benefits, which align with the vision and achieve the objectives of the Scheme. The identified benefits from the sustainable design and access of the Scheme has helped ensure that it meets relevant policy requirements with regard to design and access.

Appendix A Design review panel comments and response

Appendix B Route Classification Plan



Classification ID	Road Name	Existing Classification	Proposed Classification
1	Banwell Bypass including the south western arm from tie into existing A371 to the junction with the Southern Link	New highway	A371
2	Knightcott Road – section retained between the arms of the roundabout to serve access	A371	Unclassified
3	Banwell West Junction – south eastern arm of roundabout	New Highway	Class C
4	Knightcott Road – from arm of Banwell West Junction to it's eastern extent	A371	Class C
5	West Street – entire length	A371	Class C
6	Wolvershill Road – section south of bypass	Class C	Class C
7	East Street – from West Street to its junction with the Banwell Village Link	A368	Class C
8	Banwell Village Link	New highway	Class C
9	East Street – from its junction with the Banwell Village Link to Eastermead Lane	A368	Unclassified
10	Castle Hill – from its junction with East Street to the Southern link	A371	Unclassified
11	Southern Link	New highway	A371
12	Banwell Bypass from the junction with the Southern Link to the tie into the exiting Towerhead Road A368	New highway	A368
13	Towerhead Road from Eastermead Lane to the Southern Link (area between the junction arms)	A368	Unclassified Road with Special Engineering difficulty
14	Towerhead Road from the Southern Link to the Banwell Bypass (area between the junction arms)	A368	Unclassified Road with Special Engineering difficulty

6.2 Referances

6.2.1 [1] Ministry of Housing, Communities and Local Government (2012) *Town and Country Planning (Development Management Procedure) (England) Order 2012.* Available at: https://www.legislation.gov.uk/uksi/2012/3109/contents/made

6.2.2 [2] Ministry of Housing, Communities and Local Government (2013) *Town and Country Planning (Development Management Procedure) (England) (Amendment) Order 2013* Available at: https://www.legislation.gov.uk/uksi/2013/1238/contents/made

6.2.3 [3] Ministry of Housing, Communities and Local Government and Ministry of Housing, Communities and Local Government (2014) Available at: https://www.gov.uk/guidance/making-an-application

6.2.4 [4] NSC (2014) *Design and access statement.* Available at: https://www.n-somerset.gov.uk/my-services/planning-building-control/planning-advice/supporting-documents/statements/design-access-statement

6.2.5

6.2.6 [vi] WebTAG https://www.gov.uk/guidance/transport-analysis-guidance-tag