

# A417 Missing Link

# Preliminary Environmental Information Report

Chapter 12 Population and Human Health
- Appendices

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Appendix 12.1 Health Determinants Evidence Review

Appendix 12.2 Public Rights of Way Management Plan



# A417 Missing Link

# Preliminary Environmental Information Report

Appendix 12.1
Health Determinants Evidence Review

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### 1 Health determinants literature review

#### 1.1 Introduction

1.1.1 This document sets out a brief literature review of each of the identified determinants of health in order to provide a sample of the evidence available to support the view that these factors are able to influence health outcomes of populations. This literature review should be read alongside chapter 12 Population and human health.

## 1.2 Healthcare services and other community facilities

- 1.2.1 Services and social infrastructure such as healthcare, education, social networks and social interaction can impact on people's physical and mental health<sup>1</sup>. In 2012, five percent of adults in Great Britain reported feeling a sense of isolation due to difficulties accessing local shops and services<sup>2</sup>.
- 1.2.2 Access to health facilities has a direct positive effect on health<sup>3</sup>. Access to healthcare is important for communities as healthcare offers information, screening, prevention and treatments. Restricted access to healthcare prevents patients gaining necessary treatments and information.
- 1.2.3 Access to healthcare services is affected by transport modes, availability of financial support for those on low incomes and the location of healthcare services. Groups impacted by disability, long-term illnesses and older people are more dependent on health and social care services<sup>4</sup>, and are therefore more vulnerable if access to health and social care services becomes restricted.
- 1.2.4 Access to social infrastructure including leisure and cultural facilities is a determinant of health and well-being. According to research 'leisure activities can have a positive effect on people's physical, social, emotional and cognitive health through prevention, coping (adjustment, remediation, diversion), and transcendence'5. People participate in cultural activities for a number of reasons including personal growth and development, to learn new skills, enjoyment and entertainment and as a 'means of creative expression', or 'to meet new people' and to 'pass on cultural traditions'<sup>6</sup>.

# 1.3 Transport and connectivity

- 1.3.1 Research indicates that public transit improvements and more transit-oriented development can provide large but often overlooked health benefits. People who live or work in communities with high quality public transportation tend to drive significantly less and rely more on alternative modes (walking, cycling and public transit) than they would in more automobile-oriented areas. This reduces traffic crashes and pollution emissions and increases physical fitness and mental health. These impacts are significant in magnitude compared with other planning objectives but are often overlooked or undervalued in conventional transport planning<sup>7</sup>.
- 1.3.2 Active travel applies to modes of transport that require physical activity (i.e. cycling and walking), in contrast to modes that require little physical effort such as motor vehicles. It is therefore the physical activity associated with active travel that brings about health effects.

- 1.3.3 Active travel in areas with low pollution levels has been associated with increased physical activity among older adults. Where there is a perception that there is air pollution this appears to constitute a barrier to participating in outdoor physical activity and active transport<sup>8.</sup>
- 1.3.4 The positive effects of physical activity on physical health was summarised in the Department of Health's 2011 report<sup>9</sup> which suggests that:
  - 'Regular physical activity can reduce the risk of many chronic conditions including coronary heart disease, stroke, type 2 diabetes, cancer, obesity, mental health problems and musculoskeletal conditions. Even relatively small increases in physical activity are associated with some protection against chronic diseases and an improved quality of life.'
- 1.3.5 An ever-growing body of research also provides consistent evidence of a relationship between physical activity and mental capacity, especially in older and elderly people. Longitudinal studies show not only that physical activity is associated with a reduced risk of age-related cognitive decline, but also that regular physical activity is linked to a lower risk of Alzheimer's disease (AD) and other forms of dementia<sup>10</sup>. Age UK's guidelines also outline examples of practical ways to promote older people to become more active, including Nordic walking, Tai-Chi sessions aimed at older people, walking groups, and an 'easy rider' scheme (using a fixed-wheel bike, tricycles and tandems to aid balance)<sup>11</sup>.

#### 1.4 Open space and nature

- 1.4.1 Access to open space, green space and nature has health benefits, in relation to increasing physical activity<sup>12</sup>, as well as for mental wellbeing<sup>13, 14.</sup>
- 1.4.2 A Forestry Commission<sup>15</sup> review identified the key health benefits of green space as:
  - long and short-term physical benefits associated with obesity, life expectancy, heart rate and blood pressure;
  - attention and cognitive benefits associated with restoration, mood and selfesteem:
  - physical activity benefits associated with the use of greenspace;
  - self-reported benefits in terms of health and life satisfaction; and
  - community cohesion benefits through social contact fostered by greenspace.
- 1.4.3 Studies have found that the amount of green space and the walkability, connectivity and accessibility of the neighbourhood influence adult and children's mental health and physical health<sup>16, 17</sup>. The attractiveness or quality of green space is also an important determinant of use of green space<sup>18</sup>.
- 1.4.4 Contact with nature has positive health benefits through its positive effects on blood pressure, cholesterol and stress reduction, with particular relevance to mental health and cardiovascular disease<sup>19.</sup> Green space can also provide spaces to promote social interaction and cohesion<sup>20</sup>, and reduce social annoyances and crime, all of which can contribute to the mental health of individuals<sup>21</sup>.
- 1.4.5 Vulnerable populations include the poorest people who often experience poorer quality outdoor environments and suffer disproportionately from a lack of equitable access to ecology and green spaces. Recent research has suggested

that there is a positive association between the percentage of green space in a person's residential area and their perceived general health and that this relationship is strongest for lower socio-economic groups<sup>22</sup>.

## 1.5 Air quality

- 1.5.1 Evidence on the links between road traffic emissions and respiratory health is well established, based on numerous research studies. The main health damaging pollutants released as emissions from road traffic are particulate matter (PM<sub>10</sub>) and nitrogen dioxide (NO<sub>2</sub>)<sup>23</sup>. It is generally accepted that particles greater than 10µm in diameter (PM<sub>10</sub>) do not penetrate the lungs to cause respiratory health problems. However, dust can cause eye, nose and throat irritation and lead to deposition on cars, windows and property<sup>24</sup>.
- 1.5.2 Populations thought particularly vulnerable to the effects of PM10 are those with pre-existing lung or heart disease, the elderly and children<sup>25, 26.</sup>

#### 1.6 Noise

- 1.6.1 According to the World Health Organization (WHO), 'in some situations noise may adversely affect the health and wellbeing of individuals or populations'. The WHO recognises the health linkages between environmental noise and annoyance, sleep disturbance and physiological responses such as cardiovascular disease. There are a wide range of non-auditory health effects that may be associated with exposure to environmental noise. In the everyday environment, the response of an individual to noise is more likely to be behavioural or psychological (i.e. non-auditory) than physiological.
- 1.6.2 The WHO suggests that some people may be less able to cope with the impacts of noise exposure and be at greater risk for harmful effects, including the elderly, the physically ill, those with existing mental illness, people with hearing impairment, and young children. Families with lower income tend to have lower mobility but greater exposure to adverse environmental conditions related to noise pollution<sup>27</sup>.

# 1.7 Landscape and visual amenity

- 1.7.1 Research into the effects of the visual and aesthetic environment on well-being is mainly focused on the psychological effects of 'natural' versus 'man-made' or urban views. In general, evidence shows a preference for views of natural over man-made scenes. These links are often tied in with each other, related issues such as opportunities for exercise and contact with nature. Open spaces and natural scenes can improve physical health, comfort, and mental well-being, as well as provide opportunities to improve people's quality of life and social interactions.
- 1.7.2 In 2013, a Position Statement by the Landscape Institute<sup>28</sup> looked at evidence linking the quality of places with health and wellbeing across a range of environmental, social and lifestyle determinants. This document cites evidence to suggest that health and wellbeing are influenced positively by factors such as the attractiveness, noise and other pollution, and the perceived safety of the environment.
- 1.7.3 A literature review by Abraham *et al* in 2010 of over 120 studies<sup>29</sup> identified a set of pathways that link landscape and health. The study found that:

'Landscapes have the potential to promote mental well-being through attention restoration, stress reduction, and the evocation of positive emotions; physical well-being through the promotion of physical activity in daily life as well as leisure time and through walkable environments; and social well-being through social integration, social engagement and participation, and through social support and security.'

## 1.8 Employment and economy

- 1.8.1 The Marmot Review (2010)<sup>30</sup> looked at the differences in health and well-being between social groups. The Review identified the importance of work for health: 'being in good employment is protective of health. Conversely, unemployment contributes to poor health.'
- 1.8.2 The documented linkages between access to work and health are often related to the negative impacts of unemployment, rather than the positive impacts of employment. However, it follows that employment is generally expected to be positive in health terms.
- 1.8.3 Employment is related to social and psychological well-being; a study commissioned by the Department of Work and Pensions<sup>31</sup> found that 'work meets important psychosocial needs in societies where employment is the norm' and that 'work is central to individual identity, social roles and social status'.
- 1.8.4 Training is a form of work involving the application of physical or mental effort to improve skills, knowledge or other personal resources which can improve chances of employment and career progression.

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# A417 Missing Link

# Preliminary Environmental Information Report

Appendix 12.2
Public Rights of Way Management Plan

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#### 1 Introduction

# 1.1 Purpose

1.1.1 As with any linear infrastructure scheme of this size/nature, the scheme interacts with a number of Public Rights of Way (PRoW) and this document presents Highway England's approach to managing these interactions during both the construction and operational phases of the scheme.

#### 1.2 Structure and scope

- 1.2.1 The Public Rights of Way Management Plan includes:
  - a description of the method of identifying the PRoWs, local routes and associated surveys that were carried out on them alongside relevant stakeholder engagement exercises (section 2); and
  - a list of the PRoWs and a description of the management plan for PRoWs affected. It then lists the local routes and described the management plan for the local routes affected (section 3).
- 1.2.2 This document's primary function is to assist Highways England, its future Contractor and Gloucestershire County Council manage the rights of way network during the construction and operation of the scheme.
- 1.2.3 In relation to PRoWs, the works involved in delivering the proposed A417 scheme require:
  - temporary stopping-up and/or diversions during the construction stage to provide access to the works and safeguard PRoW users;
  - permanent extinguishment/stopping-up of PRoW (or sections of);
  - diversion/re-provision of PRoW to enable continued access; and/or
  - new routes to mitigate effects on existing PRoW or create enhancements to the PRoW network (e.g. linking between two existing routes).
- 1.2.4 Given the nature of the proposed highway scheme, the majority of PRoWs that interact with the route and its works will be permanently extinguished with a new PRoW provided (e.g. via a new overbridge/underbridge).
- 1.2.5 There are small sections of the existing PRoW network which will be extinguished without re-provision. These are typically PRoW that have historically been severed by other schemes, or which short sections would be taken for the scheme.
- 1.2.6 All reasonable steps have been taken to divert routes where they are directly affected to help ensure continued access and connectivity. Where possible, these diversions involve improved classifications in order to maximise opportunities across user groups (e.g. use of restricted byways rather than footpaths).
- 1.2.7 In addition, the proposals include some new sections of PRoW, some of which make use of new side roads or private means of access in an attempt to better connect the existing PRoW network.
- 1.2.8 The scheme also provides an opportunity to enhance the National Trail through diverting the Cotswold Way, providing a safe and attractive route for the National Trail, compared to a route which at present follows the A417 at grade for a section prior to users having to cross the A417 at grade.
- 1.2.9 This PRoW Management Plan has been prepared to support the Development Consent Order (DCO) application by demonstrating a planned approach to the

- management of PRoWs during the construction and operation of the proposed development, helping to ensure public safety while minimising disruption to users.
- 1.2.10 The DCO for the proposed development grants all necessary powers to extinguish/stop up, alter or divert PRoWs affected by the proposed development as specified in the relevant Schedule of the DCO.

#### 1.3 Responsibilities

- 1.3.1 The following roles would have the responsibility to help implement this Public Rights of Way Management Plan during the construction and operation of the proposed A417 Scheme, for or on behalf of Highways England:
  - Highways England Project Manager;
  - Site Manager;
  - Contractor Environmental Manager;
  - Public Liaison Officer: and
  - Local Authority Public Rights of Way Officer.

## 1.4 Public Rights of Way and Routes with Public Access Rights

- 1.4.1 For the purpose of this document, a Public Right of Way (PRoW) is defined as one of the following<sup>1</sup>:
  - a footpath, being a Highway over which the public have a right of way on foot only and which is not a footway<sup>2</sup>;
  - a bridleway, being a Highway over which the public have a right of way on foot and on horseback or leading a horse (horse is taken to include pony, ass or mule), and by pedal cycle<sup>3</sup>;
  - a cycle track, being a way over which the public has the right of way by pedal cycle (with or without a right of way on foot);
  - a byway open to all traffic (BOAT), being a way over which the public have the right of way on foot, horseback etc., pedal cycle or motor vehicle but over which the Highway Authority has no obligation to provide a surface suitable for the passage of vehicles<sup>4</sup>; and
  - a restricted byway, being a way over which the public have the right of way on foot, horseback etc. and pedal cycle.<sup>5</sup>
- 1.4.2 In the area covered by the proposed development the majority of PRoWs are footpaths, with a small number of bridleways and restricted byways. The area includes a National Trail, the Cotswold Way.
- 1.4.3 The types of PRoW in the area are identified in Table 2-1 of this document.
- 1.4.4 In addition to the PRoW network the document recognises that some unclassified roads or Other Routes with Public Access (ORPAs) provide additional recreational routes that may be used by all types of users including walkers, cyclists and horse-riders including disabled users (WCH). It is important to acknowledge that these are highways and as such are not shown specifically on the definitive maps as PRoW.
- 1.4.5 Department for Transport guidance<sup>6</sup> identifies these as unclassified roads, which are local roads intended for local traffic, and the vast majority (60%) of roads in the UK fall within this category.
- 1.4.6 As set out in paragraph 1.7.5 below, unclassified roads and ORPAs have been considered as part of this PRoW Management Plan where they interact with the

- PRoW network, where the scheme would have a direct impact on a route used by WCH.
- 1.4.7 The Preliminary Environmental Information (PEI) Report chapter 12 'Population and Human Health' considers WCH routes and other local routes including unclassified roads. Please refer to that document for a greater understanding of the existing situation and how likely impacts resulting from the scheme have been assessed.
- 1.4.8 This draft PRoW Management Plan will ultimately form part of the Environmental Master Plan (EMP), which would support the forthcoming Environmental Statement (ES) with a series of commitments.
- 1.4.9 The ES and EMP will support a Development Consent Order (DCO) application for the scheme, which when made will secure the powers to implement the scheme and contain requirements including those committed in this management plan.
- 1.4.10 Any required works to the above types of routes would be dealt with as part of the DCO as follows:
  - Changes to Public Rights of Way will be recorded in Schedules 3 and 4 and shown on the Rights of Way and Access Plans (sheets 1-6);
  - Changes to highways with public access rights will be recorded in Schedule 4 and shown on the Works Plans and Rights of Way and Access Plans (sheets 1-6).
- 1.4.11 For the purposes of this document, where referring to PRoWs, these include recreational routes.

# 1.5 Assumptions made in this document

- 1.5.1 Routes have been identified using the local authority Definitive Mapping, List of Streets and stakeholder consultation. They are also considered as part of a Walking, Cycling and Horse riding Assessment and Review, undertaken in accordance with the Design Manual for Roads and Bridges (DMRB). That document will be submitted as part of the Environmental Statement.
- 1.5.2 PRoWs would only be stopped up without a substitute provided where unavoidable and/or where they are considered to have limited or low value to access and/or recreation when taking into account their remaining length, destination or usage.
- 1.5.3 For PRoWs, where they are to be stopped up for construction and subsequently reinstated, a condition survey would help ensure that any reinstated route would be of similar or better quality.
- 1.5.4 For diverted routes, it is assumed that the condition would be the same or better than that stopped up.
- 1.5.5 For diverted and new routes, classifications seek to help ensure improved connectivity and surface finishes any signage would be agreed between Highways England and Gloucestershire County Council prior to implementation.

#### 2 Method

#### 2.1 Identification of PRoW

- 2.1.1 PRoW mapping data was provided by GCC and has been taken to represent the definitive record of PRoW in the study area. PRoW potentially affected by the proposed development were identified through examination of this data and site walkover work undertaken by the consultant team.
- 2.1.2 Routes have been identified or checked through workshops and consultation events that have highlighted a number of routes used and valued by local people and user groups. A WCH Technical Working Group (TWG) has helped to collect and check evidence and discuss options.
- 2.1.3 A full site walkover visit was undertaken on Tuesday 18th June 2019 in order to visit and review each of the PRoW identified as being potentially impacted by the scheme.

### 2.2 Surveys and assessments

- 2.2.1 Surveys have been undertaken at locations along the A417 corridor at PRoW and side roads, including crossing points or at key junctions. The WCH surveys were conducted for one weekend day in the school summer holidays with 14-hour (6am to 8pm) video surveys conducted on Saturday 2<sup>nd</sup> September 2017. Surveys at sites 8, 11 and 14 were undertaken on Sunday 10<sup>th</sup> September 2017 due to access issues. Further surveys were undertaken on 31<sup>st</sup> August 2019 (6am to 8pm) to complete and complement the earlier data.
- 2.2.2 A total of 1,709 pedestrians (including joggers), cyclists (both off and oncarriageway users) or horse riders were observed throughout the sites, with users recorded. In summary, the surveys showed:
  - there were 970 pedestrians (including joggers);
  - there were 722 cyclists; and
  - there were 17 horse riders.
- 2.2.3 The most frequently used location was Site 8 (Cotwold Way crossing road towards Crickley Hill car park) with 540 WCH users.
- 2.2.4 There were seven locations where flows were higher than 50 users per day. The five sites where WCH flows were highest, including:
  - Site 1: Footpath on south side of the A46 on the approach to the A417 grade separated junction;
  - Site 2: Cycleway on north side of the A46 on the approach to the A417 grade separated junction;
  - Site 3: Bridleway / access road to Leisure Lakes Bikes Flyup 417;
  - Site 8: Cotswold Way, near Shurdington; and
  - Site 15: Underpass beneath A417 by Barrow Wake car park.
- 2.2.5 Part of the context for the appraisal of PRoW also includes transport data. In particular, accident and traffic data has been collected, which shows:
  - On average, more than 34,000 vehicles use the A417 between Gloucester and Swindon every day. The Missing Link is the only single carriageway section of the A417, over a stretch of 5.5km between Brockworth Bypass and Cowley Roundabout.

- The section of the A417 has the Air Balloon Roundabout at its centre, which adds to the current transport problems in terms of congestion and delays.
- The current problems in relation to congestion are known to lead to motorists leaving the A417 and diverting onto local roads.
- Accident data for the period of five years up to the end of April 2019 shows 49
  personal injury accidents (PIAs) of which 10 were fatalities. Police records
  attribute six of those accidents involving cyclists and three involving a
  pedestrian, of which two were fatalities.
- With the scheme in place, the existing A417 due to proposed de-trunking would be much more attractive to walking, cycling and horse riding due to removal of traffic, which would use the proposed new section of road.
- The average forecast peak period traffic flows on local roads near the A417 as a result of the scheme, show a reduction overall, which would benefit conditions for walkers, cyclists and horse riders.

#### 2.3 Stakeholder engagement

- 2.3.1 A statutory consultation was held between 27 September and 8 November 2019, seeking feedback on the scheme's 2019 Preliminary Environmental Information (PEI).
- 2.3.2 The updated 2020 PEI Report is subject to supplementary statutory consultation between 13 October and 12 November 2020.
- 2.3.3 A Consultation Report will be prepared to support the DCO application, setting out how stakeholder comments have been received and considered.
- 2.3.4 A significant amount of engagement has been undertaken with stakeholders with an interest in WCH, with a Technical Working Group (TWG) representing around 30 organisations helping input to the development of this draft PRoW Management Plan.
- 2.3.5 Design changes arising from the 2019 consultation and subsequent stakeholder and landowner engagement demonstrate the project team's willingness to bring about positive changes to the scheme taking into account feedback. The design changes most pertinent to PRoW and subject to further public consultation in Autumn 2020 include:
  - WCH provision via Dog lane and Cold Slad Lane to improve east-west connectivity to the north of the existing A417, facilitating movements for residents in Brockworth and its planned developments to travel to the Country Park and the planned safe crossing points of the A417.
  - The WCH provision via Dog Lane and Cold Slad also helps address interactions within FlyUp Bike Park following discussions about the business, security and rights of way, with the 2019 scheme previously proposing an east-west connection to the south of the A417 which has now been removed.
  - A new access road serving the FlyUp Bike Park will also carry a footpath seeking to help address existing severance of routes and reduce interaction between users and construction vehicles.
  - Removal of the green bridge at Crickley Hill.
  - A new multi-user underpass at Grove Farm to provide a safe north-south crossing of the A417, with connecting footpath and bridleway connections.
  - A new WCH crossing in the region of 5m in the vicinity of Emma's Grove and connecting to Cold Slad to carry the Cotswold Way National Trail.

- A new multi-functional structure in the region of 25m to the north of Shab Hill to accommodate the Gloucestershire Way.
- Re-aligned B4070 connection with a roundabout to help address anti-social behaviour including in the Barrow Wake area, with increased WCH surveillance.
- Use of the existing underpass at Barrow Wake to provide a traffic free access for WCH connecting to the Air Balloon Way and replacement Common Land.
- Off-carriageway and segregated provision for WCH along the B4070.
- Car parking provision for users of the re-purposed A417 near the Golden Heart Inn to help relieve parking pressures on the Country Park and Barrow Wake.
- Changes at Cowley Junction to help reduce rat running and impacts of traffic on residents and WCH, with traffic prevented from using Cowley Lane.
- Safe crossings of new roundabouts and slip roads (e.g. A436).
- 2.3.6 A Statement of Common Ground with the WCH TWG members helps record where agreement has been made between Highways England and other organisations with an interest in PRoW, and where matters are outstanding.

#### 2.4 Locations and value

- 2.4.1 PRoW that intersect with the scheme and are therefore affected by works are described in Table 2-1 below and shown in Figure 12.2 (Public Rights of Way and Local Routes) of the ES.
- 2.4.2 In total, the scheme has the potential to effect 24 PRoW as follows:
  - 1 National Trail (the 'Costwold Way');
  - 1 Long-Distance Path (the 'Gloucestershire Way', comprising footpaths);
  - 16 Footpaths (including those comprising the Gloucestershire Way);
  - 4 Bridleways; and
  - 3 Restricted Byways.
- 2.4.3 As explained earlier, the scheme also has the potential to effect unclassified roads or ORPAs that interface with the scheme. Those that are affected by works are also shown in Figure 12.2 (Public Rights of Way and Local Routes) of the ES. There are three local routes that interface and are considered of interest in light of stakeholder engagement. These are all situated in the vicinity of Shab Hill are identified on the relevant List of Streets as:
  - 50852;
  - 50853; and
  - 50944.

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 Table 2-1
 Existing PRoW that interact with the scheme

PRoW	Location	Description
Cotswold Way National Trail	Bath to Chipping Campden	Widely promoted and well maintained. Difficult crossing at Air Balloon.
Gloucestershire Way Long Distance Path	Chepstow to Tewkesbury	Well signed / promoted. Difficult crossing at A417 to Air Balloon.
Badgeworth bridleway 125	West to east, Cirencester Road to south of A417	Surfaced path along access to 417 Bike Park.
Badgeworth footpath 77	Links north-south from Badgeworth bridleway 125	Footpath across field which appears maintained with style to join BR125.
Badgeworth footpath 78	Links north-south from Badgeworth bridleway 125	Footpath close to communities and likely to be used for recreational purposes, linking into the wider PRoW network. Footpath appears maintained with style to join BR125 but alternative routes could be taken.
Badgeworth footpath 74	Links north-south from Badgeworth bridleway 125	Appeared overgrown and unmaintained.
Badgeworth footpath 80	Links end of Badgeworth bridleway 125 north-south to Badgeworth footpath 81	Footpath through Bike Park with style to join BR125.
Badgeworth footpath 126	Links Badgeworth bridleway 125 east-west through Crickley Hill Farm	Surfaced path along access to 417 Bike Park.
Badgeworth footpath 84	Links Badgeworth footpath 126 to A417	Path inaccessible north towards A417 but accessible south through Bike Park.
Badgeworth bridleway 127	Links Badgeworth footpath 90 to Dog Lane	Surfaced and maintained. Joins to footpath along north side of A417.
Badgeworth footpath 90	Links A417 to Haroldstone House north-south	Accessible / well maintained. Style to A417.
Badgeworth footpath 86	Links A417 to Badgeworth bridleway 87 north-south	Overgrown / unmaintained – direct access onto A417.
Badgeworth bridleway 87	Links A417 to Grove Farm north-south	Limited signage – assumed to run along access to Grove
Badgeworth footpath 89	Links Badgeworth bridleway 87 to Cotswold Way and A417 east-west	Farm and direct onto A417.
Coberley footpath 51	Links Air balloon roundabout to Devil's Table east-west	Good quality / maintained path providing links to Cotswold Way and Country Park.
Coberley bridleway 117	Links Air balloon roundabout through Crickley Hill Country Park east-west	Good quality / maintained.

PRoW	Location	Description
Coberley restricted byway 12	Links Air balloon roundabout through Crickley Hill Country Park east-west	Accessed off BR117.
Coberley footpath 16	Part of Gloucestershire Way	Maintained, clear path through fields.
Cowley footpath 1	Part of Gloucestershire Way	Maintained but steep to A417 where crossing required but difficult.
Cowley footpath 3	Part of Gloucestershire Way	Runs along access to Kennels – signed and maintained.
Cowley footpath 7	Links Shab Hill Farm via track to Cowley footpath 44	Footpath through field connecting to small lane.
Cowley footpath 44	Links north of Stockwell Farm to A417 east-west	Gated access, signed and clear route through field.
Cowley restricted byway 36	Connects Stockwell Farm to Cowley restricted byway 27 east-west	Signed but no clear route through field.
Cowley restricted byway 26	Provides east-west link and connection into RB36	Signed path with signs of recent use.
Cowley footpath 22	Connects Stockwell Farm to Cowley bridleway 45 east-west	Runs along farm access road – signed and maintained.
	Unclassified Roads / ORPAs	
50852	Links Barrow Wake to Ullenwood	Single track unclassified road
50853	Links 50852 near Birdlip Radio Station to 50855 near Cowley Lane	Single track unclassified road
50944	Links Stockwell Farm to 50853	Single track unclassified road

# 3 Management plan

#### 3.1 General provisions

- 3.1.1 The DCO grants the necessary powers to stop up PRoW affected by the proposed development and put in place alternative/substitute routes as listed in the relevant Schedule of the DCO.
- 3.1.2 Highways England is committed to the highest levels of safety for the proposed construction and operation of the scheme, and also to minimise disruption to the public.
- 3.1.3 Where a potential conflict between these two objectives has been identified, a pragmatic approach to safety has been taken, balancing the risks to the public and users of PRoW against the disruption that removing the risk will cause (e.g. through stopping up a PRoW).
- 3.1.4 This Plan has been prepared based on an application of professional judgement given the current understanding of the scheme proposals at this early stage. As such, there may be a requirement for this Plan to be revised or reconsidered should a Contractor be appointed by Highways England in order to help ensure the safety of users during construction.
- 3.1.5 This Plan has sought to retain access for the public through phasing/timing of works based on the current understanding but where this has not been possible necessary closures have been identified in the subsequent sections of this Plan. As explained above, this may require an alternative approach or further consideration following any appointment of a Contactor.

# 3.2 Signage and information

- 3.2.1 At all points where PRoWs intersect or cross the proposed development, appropriate signage will be erected to advise of planned works and dates of any planned closures.
- 3.2.2 Signage will also, where applicable, provide information on any alternative routes/diversions and new routes. The location and details of these signs will be discussed and agreed with GCC PRoW Officers / Highways.
- 3.2.3 Information signs detailing works and giving the project Community Relations team contact number details will be maintained across the construction site.
- 3.2.4 A high-level programme of PRoW closures and alternative/new routes will be produced and the GCC PRoW Officers, Highways, affected Parish Councils and if required, Land Agents and/or Persons with Interest in Land (PILs) will be notified at least seven days in advance of any closure. For the National Trail, Natural England would be appropriately engaged to manage and publicise any necessary temporary works.
- 3.2.5 A separate notification will be issued when the closure has ceased or an alternative/new route has been provided. Advance notice will include planned dates of any closures and the programmed dates for reopening/re-providing PRoW.

#### 3.3 Forms of managed closure

- 3.3.1 Exact details of the forms of closure will be developed by Highways England and its contractor and will be subject to further discussions and agreements with GCC.
- 3.3.2 Highways England will make every effort to minimise disruption along the PRoW network and will follow the following decision-making process which sets out a hierarchy of actions, starting with those that create the minimum impact:
  - use of signage where PRoW can remain open but users need to be warned of the presence of construction vehicles (local management);
  - implementation of short, temporary closures where local works might affect safety of users (local closures);
  - closure of/extinguishment of a PRoW following the early implementation of an alternative/new route (e.g. via a new overbridge/underbridge) (early reprovision);
  - closure of/extinguishment of a PRoW without re-provision (e.g. where works sequencing will not provide a new crossing in advance on the carriageway works) and/or permanent extinguishment of a PRoW (full closure).
  - provision of new crossings/routes as part of the scheme (new routes).
- 3.3.3 All such interventions will be developed in liaison with GCC PRoW and Highways officers, and will be confirmed upon the appointment of a contractor at the detailed design stage of the project, should the scheme proceed to construction.
- 3.3.4 The following paragraphs provide more detailed examples of key forms of intervention that are likely to be required.

#### Local management

- 3.3.5 Where it is considered safe to do so, PRoW in close proximity to construction works or that adjoin roads that may be affected by works will remain open with appropriate signage to warn of the presence of construction vehicles, and to warn drivers of the presence of walkers, cyclists and horse riders. It is considered that it would be disproportionally disruptive to close PRoW in this instance, particularly when works may only be taking place for short periods of time and risk to the public is likely to be low.
- 3.3.6 In certain instances, a banks person could be used to hold users of the PRoW network for short periods to allow for safe passage of construction traffic (e.g. where a PRoW is to be used for construction access).

#### Local closures

- 3.3.7 Where works are predicted to affect the safety of PRoW users to an extent that cannot be controlled by local management, local closures would be sought. Such closures would be temporary and short-term in order to facilitate periods of construction works that are discrete in nature and can be completed in a matter of days/weeks, rather than months.
- 3.3.8 Where it is not considered safe to keep PRoW open with appropriate signage during construction works, the need for a diversion, signage and other relevant details will be discussed and agreed with GCC.

#### Early re-provision

- 3.3.9 Where possible, Highways England have utilised design development to consider where early works may allow them to retain safe access for PRoW users during the construction period. In such cases, it may be necessary for Highways England to seek extinguishment of a PRoW or section of, alongside the provision of an alternative route (in general via an underbridge or overbridge which is to be constructed in advance of the mainline works).
- 3.3.10 This early re-provision would therefore overcome potential construction effects as well as seeking to provide a new PRoW more permanently into the operational phase of the development.

#### **Full closure**

3.3.11 Given the linear nature of the scheme, and the programme of works, it will not always be possible for Highways England to retain access across the works for the full extent of construction. In these instances, Highways England are seeking a full closure of certain PRoW to enable construction. Where possible, access across the new road has subsequently been provided via new structures, however, there are a few instances where no re-provision is planned.

#### **New routes**

3.3.12 The provision of new routes to enhance the current PRoW network or new routes to facilitate access across the scheme.

#### 3.4 Proposed PRoW management

3.4.1 This section details the planned management of PRoW during both the construction and operational phases of the scheme.

Table 3-1 PRoW management

Type of management	Number of proposed changes
Stopping up of PRoW for which no substitute is to be provided	2
Stopping up of PRoW for which a substitute is to be provided	15
New sections of PRoW	13
Reclassification of PRoW	4
Promotion of Access Rights along unclassified roads / ORPAs	4

3.4.2 The timing of this management is described below with further details provided in Table 3-2. The Table will be updated to include calculated lengths in meters where works are required to PRoW when this Plan is updated and submitted as part of the EMP alongside the DCO application.

#### Construction

- 3.4.3 The construction phase of the scheme is anticipated to lead to a variety of effects on the PRoW network, ranging from increased construction traffic on or in close proximity to PRoW, through to a need to extinguish a PRoW in order to enable construction works.
- 3.4.4 In summary, the following PRoW management is anticipated prior to or during the main construction phase of the scheme. Further detail is provided in Table 3-2:
  - stopping up of 2 PRoW for which no substitute is to be provided. This relates
    to instances where the proposed A417 severs short sections of existing PRoW
    or where new routes replace redundant sections of PRoW rather than a
    substitute being provided (e.g. diversion);
  - 15 PRoW to be stopped up for which a substitute is to be provided. This relates to instances where diversion of PRoW is required (e.g. to where parts of the scheme sever existing PRoW and opportunities exist to create new routes to replace their original routes to maintain or improve accessibility);
  - 13 new PRoW to be provided. This includes new footpaths, bridleways and restricted byways which all seek to enhance overall connectivity and encourage active travel across the network;
  - 4 reclassified sections of PRoW. These proposals seek to facilitate a greater use of existing routes to enhance connectivity for different users; and
  - promotion of access rights along 4 unclassified roads / ORPAs to increase local connectivity via PRoWs. These offer opportunity to further connect the PRoW network.
- 3.4.5 On appointment of a contractor, diversion routes for traffic as part of a Traffic Management Plan would be prepared and agreed with GCC. For the purposes of this Mitigation Plan (prior to the appointment of a contractor) it is assumed that where any PRoW forming part of or interacting with a traffic management route, appropriate local management and signage would be provided as agreed.

#### Operation

- 3.4.6 Whilst it is proposed that the majority of PRoW management takes place prior to or as part of the main construction in order to facilitate ongoing and safe access, there are also instances of post construction management which bring further enhancements to the PRoW network. These include:
  - 3 new sections of PRoW which relate to the repurposing of de-trunked A417 as a restricted byway and connection to and from it via the existing PRoW network at Barrow Wake car park to the north and Birdlip to the south; and
  - promotion of access rights along the Old Cirencester Road in order to help connect the repurposed A417 to Birdlip and beyond.
- 3.4.7 Appropriate design parameters and materials will be provided for substituted and new PRoW, taking into account the proposed type and nature of the proposed PRoW.
- 3.4.8 Classifications of substituted and new PRoW have been discussed with GCC PRoW Officers, who will update their Definitive Maps as necessary, following notification of completion of works by Highways England and its contractor.
- 3.4.9 Any changes to the List of Streets would be updated by GCC Highways.

- 3.4.10 Surfaces would be restored/be as per existing post construction. Suitable surfaces for different types and classification of routes will be provided, taking into account relevant guidance, for example from the British Horse Society<sup>vii</sup>.
- 3.4.11 For multipurpose routes (e.g. routes providing private means of access and a bridleway) details of surfaces and access restrictions features (e.g. demountable bollards) will be agreed with the landowner and/or third party responsible for maintenance and/or use of that surface and/or route.
- 3.4.12 Highways England and its contractor will provide appropriate signage for reprovided and new PRoW in agreement with GCC.
- 3.4.13 Details and specifications including maintenance agreements for substituted and new PRoW, including scale, surface materials, access features / means of enclosure and signage would be agreed between Highways England, its Contractor and GCC prior to implementation. At that stage, user groups could be engaged to help inform decision making over these detailed design matters.

A417 Missing Link | HE551505 Highways England

 Table 3-2
 PRoW management plan proposals

Ref	Area	PRoW to be stopped up	Timing	Reason for management and/or closure	Stopping up required	New PRoW or highway to be substituted / provided
1, 2	Badgeworth Civil Parish	Badgeworth bridleway 125	To be implemented prior to main construction	Section to be stopped up with no onward bridleway connections, with new Private Means of Access (PMA) to serve new attenuation basin in this area.	Yes	No substitute for PRoW but new Private Means of Access (PMA) to serve new attenuation basin in this area, and alternative route for WCH provided to the north of the A417 via Dog Lane and Cold Slad Lane with new bridleway connection between the two
3	Badgeworth Civil Parish	Badgeworth footpath 78	To be implemented prior to main construction	Proposed A417 alignment severs short sections of the existing PRoW network into which the footpath connects	Yes	To be diverted along new highway access for FlyUp 147 Bike Park
4	Badgeworth Civil Parish	Badgeworth footpath 77	To be implemented prior to main construction	Proposed A417 alignment severs short sections of the existing PRoW network into which the footpath connects	Yes	To be diverted along new highway access for FlyUp 147 Bike Park
5	Badgeworth Civil Parish	Badgeworth Footpath 74	To be implemented prior to main construction	Proposed A417 alignment severs short sections of the existing PRoW network into which the footpath connects	Yes	To be diverted along new highway access for FlyUp 147 Bike Park
6	Badgeworth Civil Parish	N/A	N/A	Promoted connectivity across PRoW network	N/A	Dog Lane with public access rights to connect into Cold Slad Lane with new bridleway
7	Badgeworth Civil Parish	Badgeworth footpath 126	To be implemented prior to main construction	Proposed A417 alignment severs short sections of the existing PRoW	Yes	To be diverted along new highway access for FlyUp 147 Bike Park
8	Badgeworth Civil Parish	Badgeworth Footpath 80	To be implemented prior to main construction	Proposed A417 alignment severs short sections of the existing PRoW network into which the footpath connects	Yes	To be diverted along new highway access for FlyUp 147 Bike Park

Ref	Area	PRoW to be stopped up	Timing	Reason for management and/or closure	Stopping up required	New PRoW or highway to be substituted / provided
9	Badgeworth Civil Parish	Badgeworth footpath 84	To be implemented prior to main construction	Proposed A417 alignment severs a section of this PRoW which was previously severed by the existing A417	Yes	To be diverted along new highway access for FlyUp 147 Bike Park
10	Badgeworth Civil Parish	N/A	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network	N/A	A new bridleway to connect Dog Lane and Cold Slad Lane
11	Badgeworth Civil Parish	Badgeworth footpath 86	To be implemented prior to main construction	Proposed A417 alignment severs a section of this PRoW which was previously severed by the existing A417	Yes	To be diverted along new section of bridleway to connect to Badgeworth bridleway 87
12	Badgeworth Civil Parish	Badgeworth footpath 86	To be implemented prior to main construction	Increased accessibility opportunities	N/A	Badgeworth footpath 86 to be reclassified as bridleway along its entire length
13	Badgeworth Civil Parish	N/A	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network	N/A	A new bridleway to connect Badgeworth footpath 86 (to be reclassified as bridleway under Ref 12) to Badgeworth bridleway 87
14	Badgeworth Civil Parish	Badgeworth bridleway 87	To be implemented as part of main construction	Short section at northern extent to be stopped up with slight diversion to connect into new section of bridleway to new Grove Farm underpass	Yes	To be diverted to connect into new section of bridleway to new Grove Farm underpass
15	Badgeworth and Cowley Civil Parishes	Badgeworth footpath 89	To be implemented as part of main construction	Section to be stopped up, to reduce impact on Site of Special Scientific Interest and diversion to new Grove Farm underpass.	Yes	To be diverted to connect into new section of bridleway to new Grove Farm underpass
16	Badgeworth and Cowley Civil Parishes	N/A	N/A	Promoted connectivity across PRoW network	N/A	Cold Slad Lane with public access rights to connect into Dog Lane with new bridleway

Ref	Area	PRoW to be stopped up	Timing	Reason for management and/or closure	Stopping up required	New PRoW or highway to be substituted / provided
17, 18, 20	Badgeworth, Cowley and Coberley Civil Parishes	Cotswold Way National Trail	To be implemented as part of main construction	Proposed A417 alignment severs the existing National trail and includes for diversion of this Trail over the Green Bridge	Yes	A new bridleway to carry the National Trail across the A417 where it would join its existing route
19	Coberley Civil Parish	N/A	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network and to create a safe connection to Leckhampton Hill	N/A	A new bridleway to connect Cold Slad Lane and the Cotswolds Way National Trail to Leckhampton Hill
21	Coberley Civil Parish	N/A	To be implemented as part of main construction (but prior to any closure of Coberley footpath 16 or 3)	Proposed A417 alignment severs the existing PRoW	N/A	A new footpath to connect Cold Slad Lane to the Cowley footpath 3 (Gloucestershire Way) via Coberley footpath 15
23	Coberley Civil Parish	Coberley footpath 16	To be implemented prior to main construction	Proposed A417 alignment severs the existing PRoW and opportunity to connect new Gloucestershire Way crossing	Yes	Cowley footpath 16 to be diverted onto new highway and across new Gloucestershire Way crossing
22, 25	Cowley Civil Parish	Cowley footpath 3	To be implemented as part of main construction	Proposed A417 alignment severs the existing PRoW and opportunity to connect new Gloucestershire Way crossing	Yes	Cowley footpath 3 to be diverted onto new highway and across new Gloucestershire Way crossing
24	Cowley Civil Parish	N/A	To be implemented as part of main construction	Proposed A417 alignment severs the existing unclassified road (50852)	N/A	A new bridleway to connect unclassified road (50852) to new bridleway over Gloucestershire Way crossing
26	Cowley Civil Parish	N/A	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network	N/A	A new section of B4070 with public access rights

Ref	Area	PRoW to be stopped up	Timing	Reason for management and/or closure	Stopping up required	New PRoW or highway to be substituted / provided
27	Cowley Civil Parish	N/A	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network	N/A	A new restricted byway to connect B4070 with unclassified roads and new side roads with public access rights
28	Cowley Civil Parish	N/A	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network	N/A	A new section of restricted byway to join de-trunked a417 to Cowley footpath 44 and B4070 to Shab Hill area
29, 30	Cowley Civil Parish	Cowley footpath 7	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network	Yes	To be diverted onto a new section of unclassified road to connect unclassified roads 50853 and 50944
31	Cowley Civil Parish	N/A	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network	N/A	A new set of stepped footpath to connect Cowley footpath 44 onto new Cowley Lane overbridge with public access rights
32	Cowley Civil Parish	Cowley restricted byway 26	To be implemented prior to main construction	Proposed A417 alignment severs the existing PRoW	Yes	To be diverted onto a new section of restricted byway to connect new Cowley Lane Overbridge
33	Cowley Civil Parish	N/A	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network	N/A	A new footpath to connect unclassified road 50853 with Shab Hill junction side road with public access rights
34	Cowley Civil Parish	Cowley restricted byway 36	To be implemented prior to main construction	Proposed A417 alignment severs the existing PRoW	Yes	N/A
35	Cowley Civil Parish	N/A	To be implemented prior to main construction	Increased / improved connectivity across exiting PRoW network	N/A	A new restricted byway over the new Stockwell Farm overbridge

Ref	Area	PRoW to be stopped up	Timing	Reason for management and/or closure	Stopping up required	New PRoW or highway to be substituted / provided
36, 38	Cowley Civil Parish	Cowley footpath 22	To be implemented prior to main construction	Proposed A417 alignment severs the existing PRoW	Yes	To be diverted onto the proposed Stockwell Farm overbridge to the north and diverted with new section of restricted byway around new Cowley junction to the south
37	Cowley Civil Parish	Cowley footpath 22	To be implemented prior to main construction	Increased / improved connectivity across exiting PRoW network	N/A	Cowley footpath 22 to be reclassified as restricted byway between Cowley footpath 40 and new Stockwell Farm overbridge
39	Cowley Civil Parish	N/A	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network	N/A	A new restricted byway along and adjacent to new Cowley junction between proposed A417 and Cowley footpath 39
40	Cowley Civil Parish	Cowley footpath 21	To be implemented as part of main construction	Increased / improved connectivity across exiting PRoW network	N/A	Cowley footpath 21 to be reclassified as restricted byway
41	Cowley Civil Parish	N/A	To be implemented following the opening of the new A417	Increased / improved connectivity across exiting PRoW network	N/A	A new restricted byway to connect Barrow Wake car park and the new Cotswold Way crossing and Emma's Grove
42	Cowley Civil Parish	N/A	To be implemented following the opening of the new A417	Increased / improved connectivity across exiting PRoW network	N/A	A new restricted byway along the de-trunked A417 between Barrow Wake car park access and new area of parking near Stockwell Lane and the Golden Heart Inn
43	Cowley Civil Parish	N/A	To be implemented following the opening of the new A417	Increased / improved connectivity across exiting PRoW network	N/A	A new footpath to connect new restricted byway (Ref 42) and Cowley footpath 46
44	Cowley Civil Parish	N/A	To be implemented following the opening of the new A417	Promoted connectivity across PRoW network	N/A	Old Cirencester Road with public access rights to connect new restricted byway (Ref 42)

#### **Additional closures**

- 3.4.14 Table 3-2 sets out Highways England's expectations of the required closures and new provision in relation to the PRoW network as a result of the scheme. However, if additional temporary or permanent diversions are required of other PRoW not set out in this plan, these will be agreed with GCC and the landowners prior to implementation.
- 3.4.15 Further, in such cases, the relevant Article of the DCO requires Highways England to obtain the consent of the relevant highway authority, which may attach reasonable conditions to such consent. As with any closures, signage would be used and similar principles to management of closures adopted for any additional requirements.

#### Safety measures

- 3.4.16 Where appropriate, suitable fencing will be erected by the contractor in order to form safe corridors for users of PRoW, especially where it is proposed to retain access in areas adjacent to construction works.
- 3.4.17 The type and size of fencing will be agreed with the individual landowners and GCC PRoW Officers prior to the start of construction. Regular inspections of the fencing would take place to ensure that all fencing and signage along the PRoW remain in place and that the condition of the PRoW is suitable for its intended use.
- 3.4.18 Where construction routes adjoin a PRoW or where a PRoW crosses a construction access, appropriate signage would be installed as necessary to ensure the safety of the public, road users and workforce. Appropriate traffic management measures for all works affecting highways would be covered in the Traffic management plan.

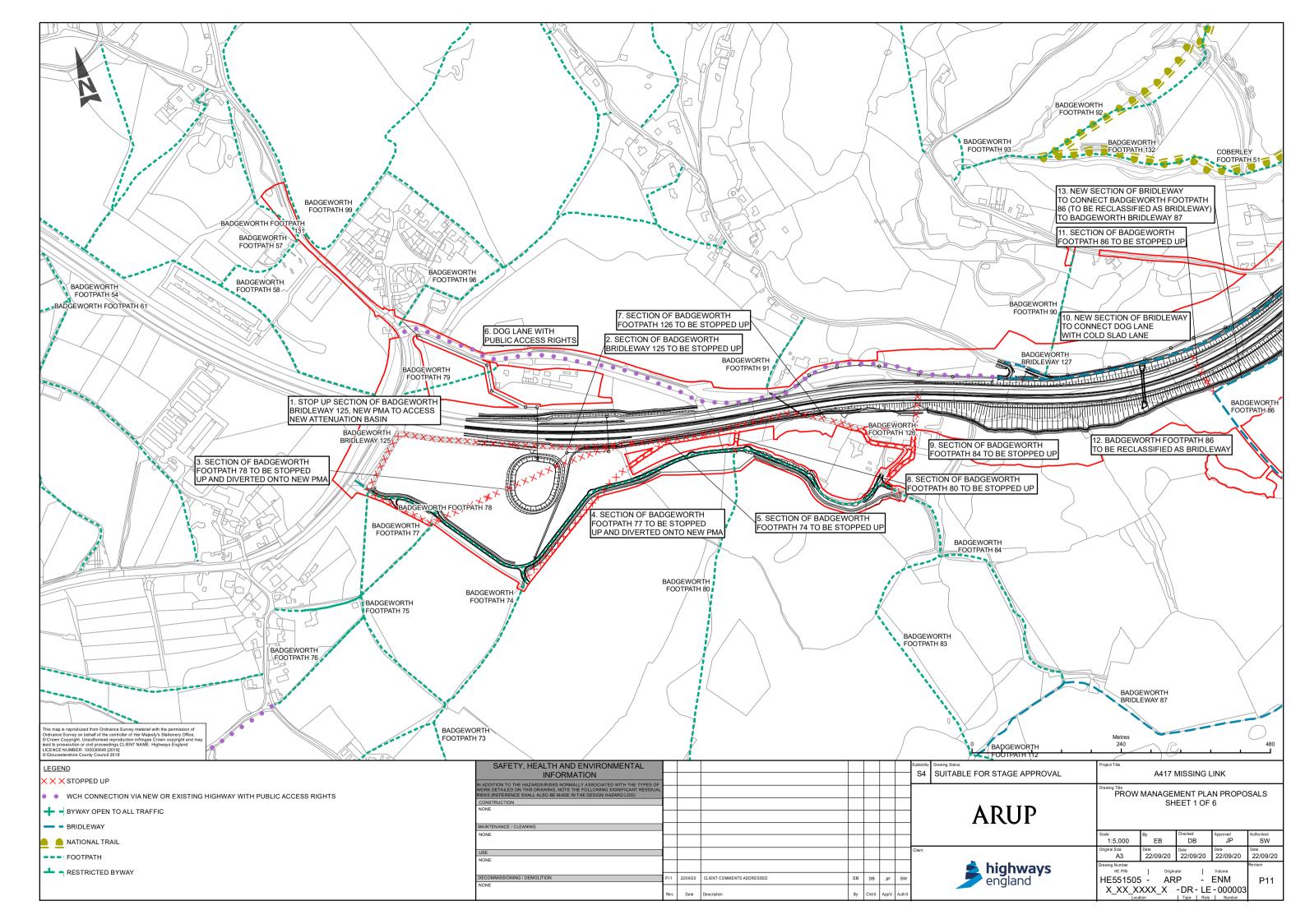
#### Inspections

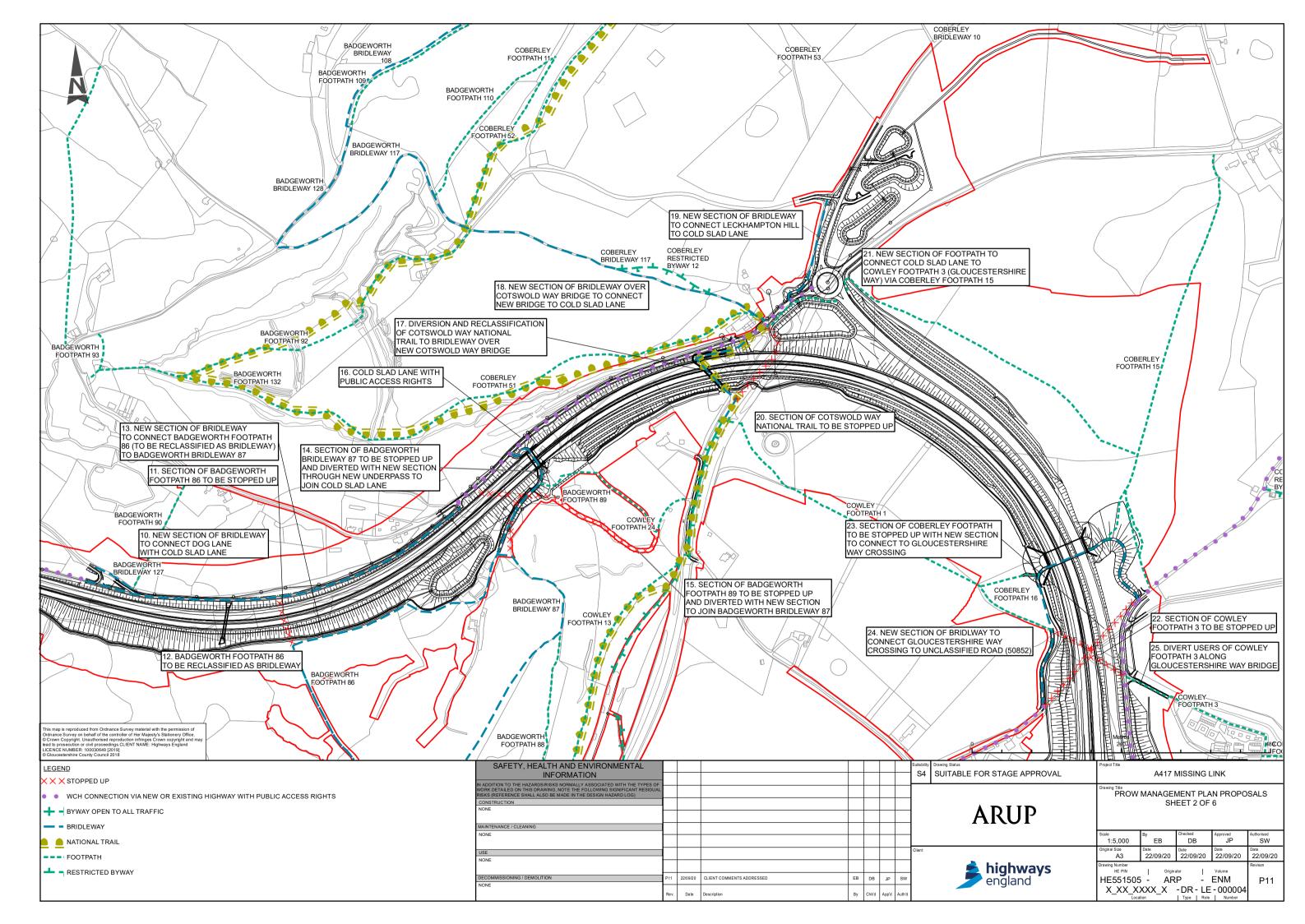
- 3.4.19 Inspections of any installed temporary diversions or alternative routes and any required action relating to non-conformance, will be undertaken at timescales to be determined/agreed with GCC PRoW Officers. Regular inspections of such routes will be undertaken and short-term damage repaired where necessary.
- 3.4.20 During construction, Highways England will also operate a Community Relations team and contact details will be provided on any signs located along the PRoW network. Concerns around condition can therefore be flagged through this facility and Highways England will explore any short-term reinstatement work where necessary. Any concerns raised will be shared with GCC PRoW Officers.

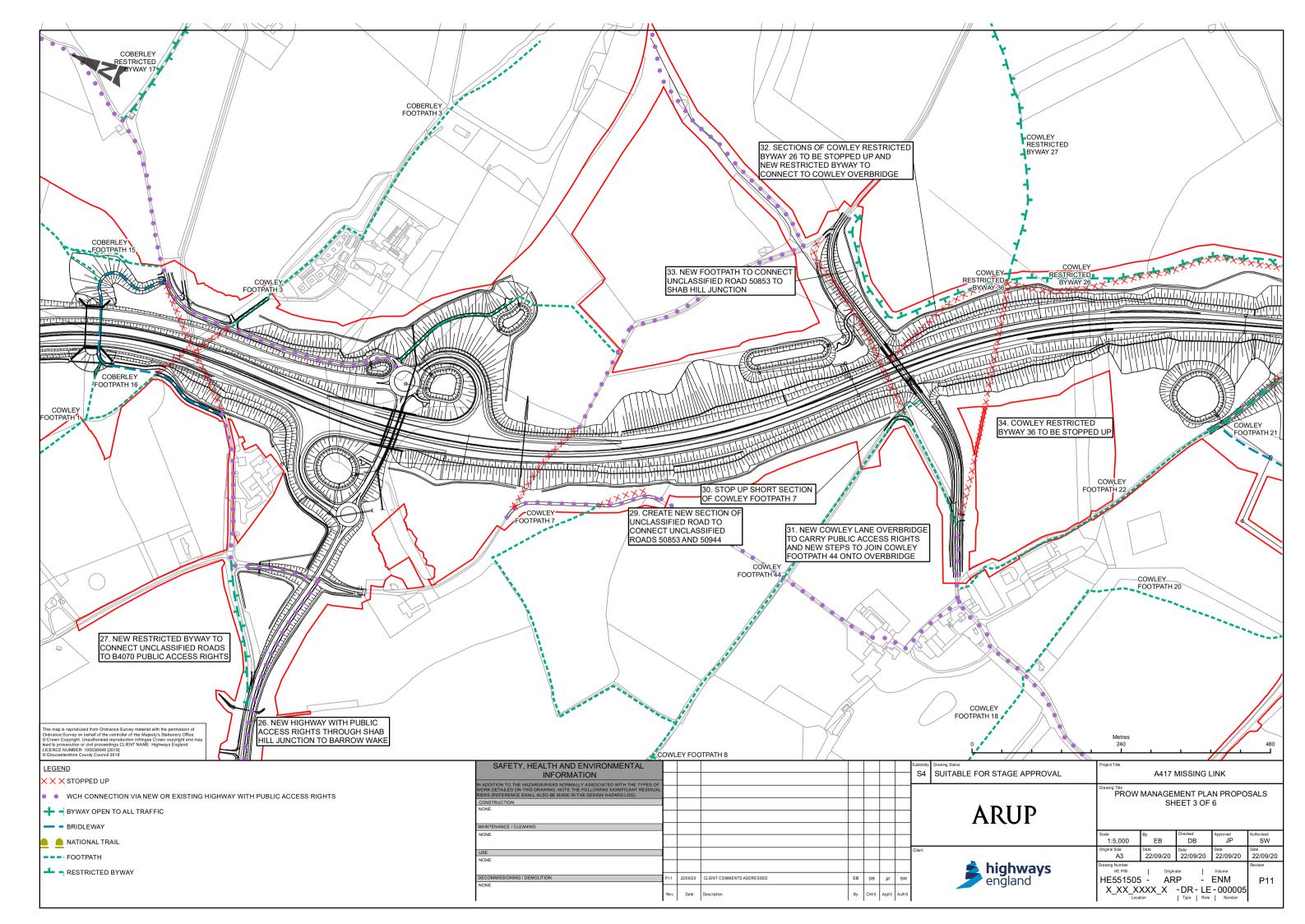
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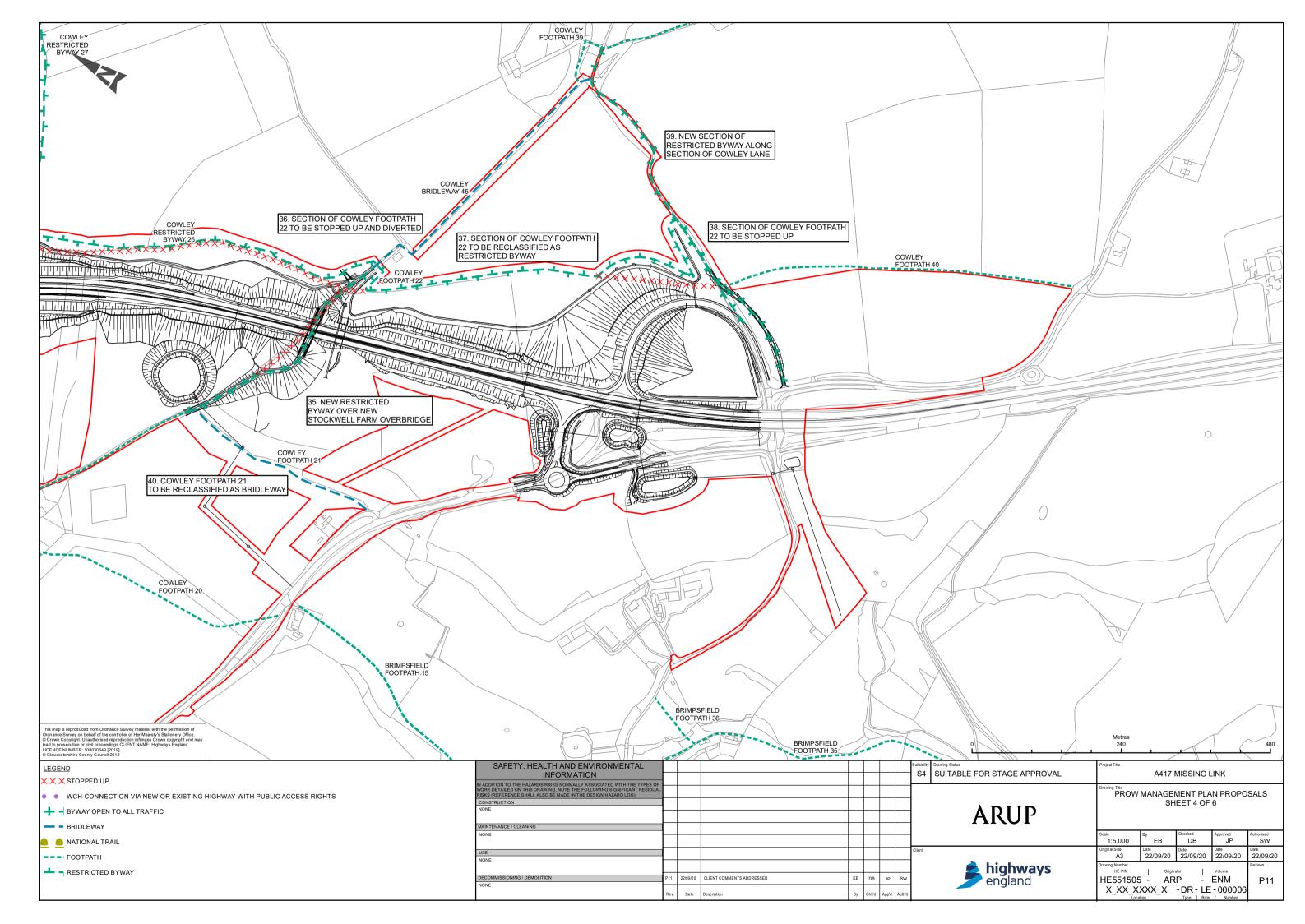
# **Figures**

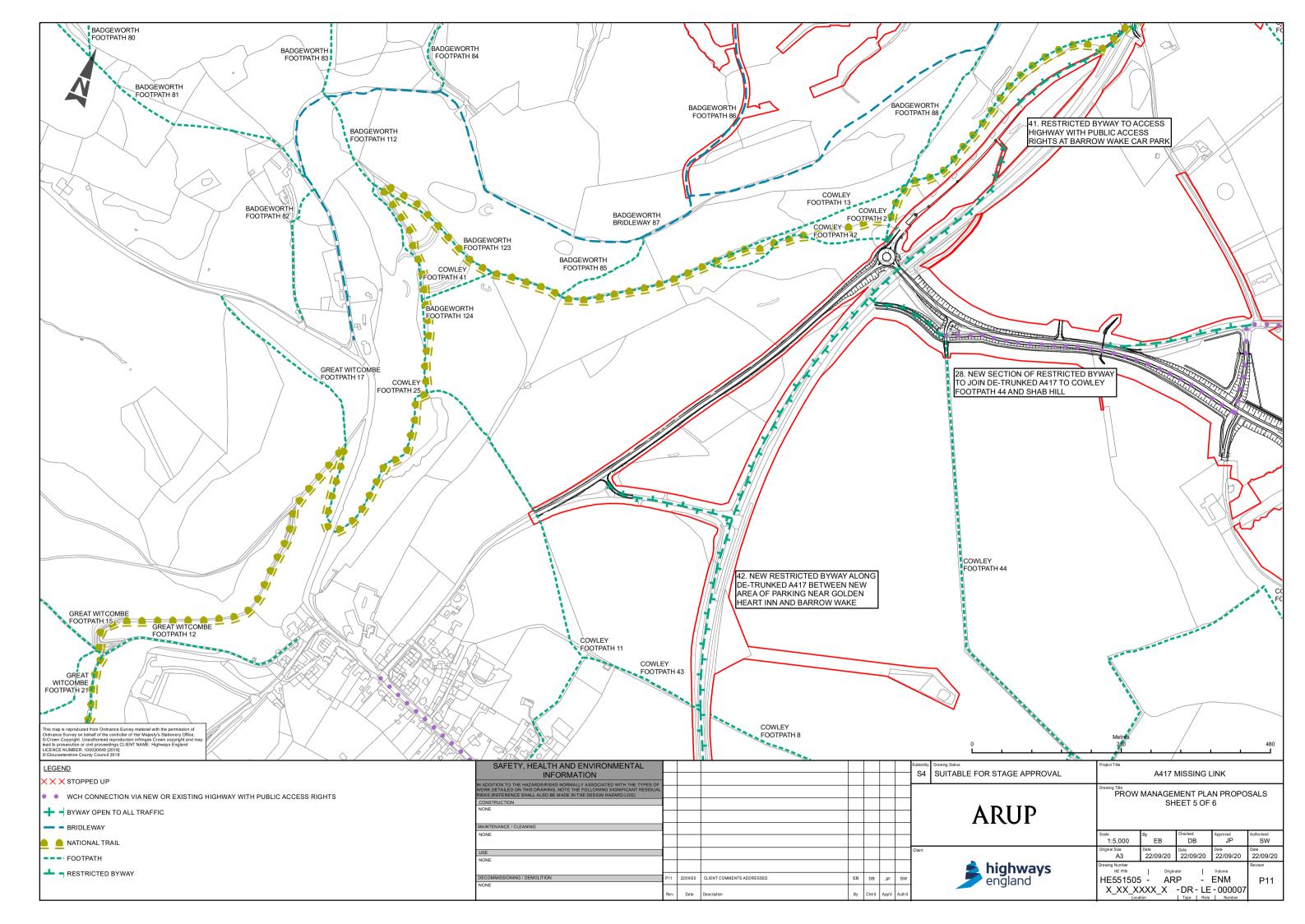
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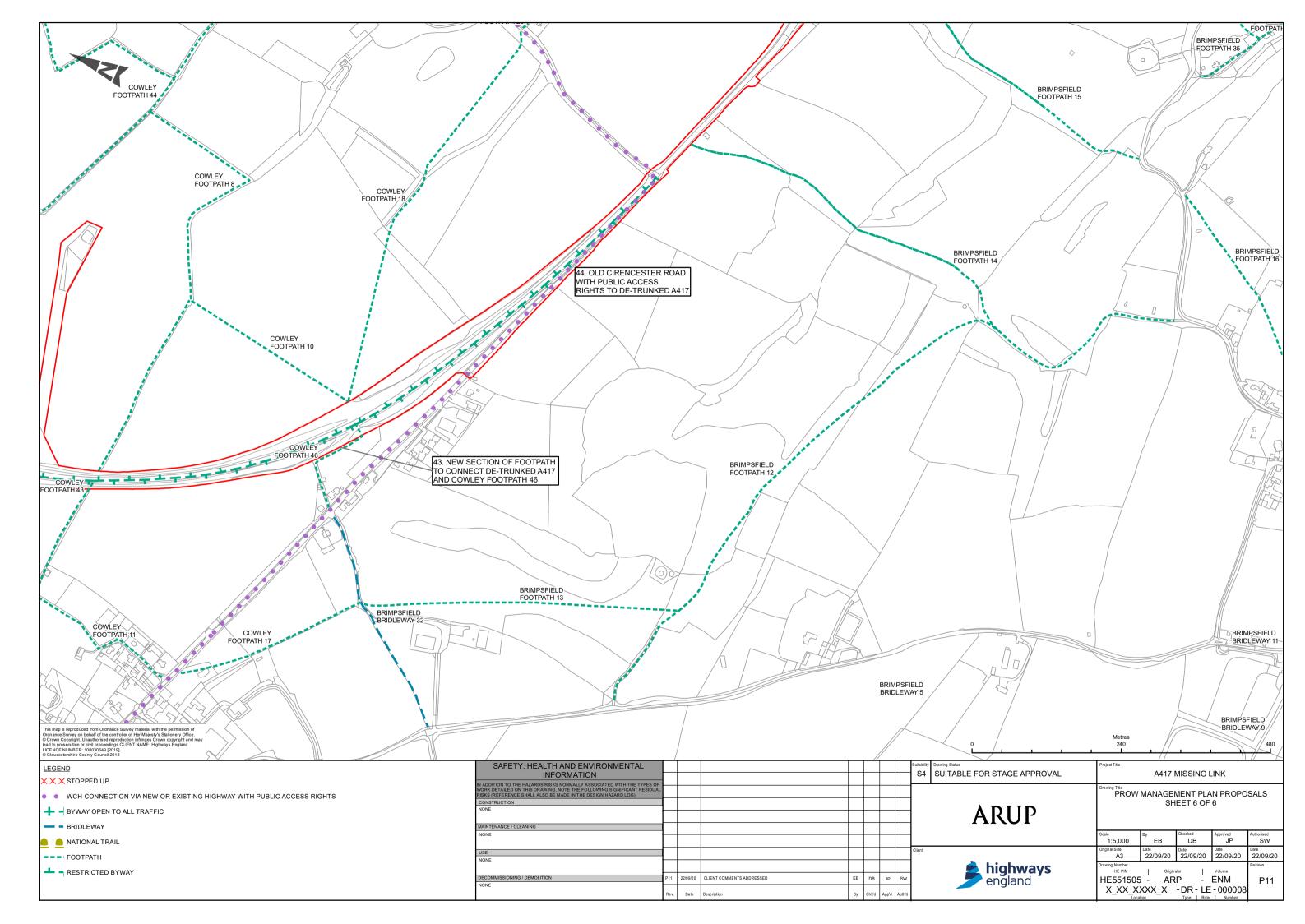












# **End Notes and References**

 $\underline{\text{https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/315783/road-classification-guidance.pdf}$ 

vii See: https://www.bhs.org.uk/advice-and-information/free-leaflets-and-advice

<sup>&</sup>lt;sup>1</sup> Definitions follow those created in Section 329 of the Highways Act 1980 except for a byway open to all traffic

<sup>&</sup>lt;sup>2</sup> A footway is a way over which the public have a right of way on foot only alongside a carriageway over which the public have a right of way for the passage of vehicles

<sup>&</sup>lt;sup>3</sup> The Countryside Act 1968 permits this but does not impose an obligation for the highway authority to facilitate its use by pedal cycles (for example by providing a suitable surface

<sup>&</sup>lt;sup>4</sup> As defined in the Countryside and Rights of Way Act 2000

<sup>&</sup>lt;sup>5</sup> As defined in the Countryside and Rights of Way Act 2000

<sup>&</sup>lt;sup>6</sup> See: