

A303 Sparkford to Ilchester Dualling Scheme TR010036

7.3 Transport Report

APFP Regulation 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

July 2018



Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations
2009**

**A303 Sparkford to Ilchester Dualling
Scheme**
Development Consent Order 201[x]

Transport Report

Regulation Number:	Regulation 5(2)(q)
Planning Inspectorate Scheme Reference	TR010036
Application Document Reference	7.3
Author:	A303 Sparkford to Ilchester Dualling Scheme Project Team, Highways England

Version	Date	Status of Version
Rev 0	July 2018	Application Issue

Table of Contents

1	Summary	4
2	Introduction	5
2.1	Glossary	5
2.2	Scheme background and description	6
2.3	Scope of the report	10
2.4	Scheme objectives	10
2.5	Discussions with local authorities	11
2.6	Traffic modelling	11
2.7	Study area	11
3	Policy context	13
4	Existing road network	15
4.1	Existing route corridor	15
4.2	Existing project road	15
4.3	Key routes	15
4.4	Key junctions	15
4.5	Existing traffic flows	20
4.6	Existing operational performance	21
4.7	Safety	21
5	Sustainable transport	22
5.1	Rail	22
5.2	Bus	23
5.3	Cycle routes	24
5.4	Non-motorised user provision	24
6	Transport modelling	26
6.1	Introduction	26
6.2	Data collection	26
6.3	Base model development	30
6.4	Model forecasting	31
7	Traffic impacts	33
7.1	Traffic flow impacts	33
7.2	Operational appraisal of scheme junctions	36
8	Wider scheme impacts	40
8.1	Highway journey times	40
8.2	Economic impacts	41
9	Road safety	43
9.1	Overview of personal injury collisions	43
9.2	Results from COBALT analysis	44
10	Construction impacts and mitigation	48
10.1	Summary of construction traffic management plan	48
10.2	Construction traffic assessment	48
	Appendix A: Traffic Management Plan	49

1 Summary

- 1.1.1 The A303 Sparkford to Ilchester Dualling scheme is one of a number of improvements planned for the A303 corridor to provide a high-quality route between London and the south-east and the south-west peninsular. Two other schemes are being progressed in the Road Investment Strategy period 1, these are A303 Stonehenge and A358 Taunton to Southfields Dualling schemes. All three schemes are for proposed 2 lane all purpose dual carriageway standards to replace existing, mainly, single carriageway roads and bottlenecks on the route.
- 1.1.2 The road provides a strategic route for access to the south-west peninsular and carries especially large volumes of holiday traffic as well as weekly commuting traffic so the highest flows during the year occur on Fridays, weekends and bank holidays during the summer. The existing traffic flow already substantially exceeds the recommended upper design threshold applied at opening year for single carriageways and by the opening year traffic will grow further from the existing level.
- 1.1.3 The existing single carriageway road alignment, number of junctions, occurrence of slow moving vehicles and limited opportunities for overtaking means longer journey times and poor travel time reliability. Travel times and variability increase during the summer peak periods, resulting in unreliable journeys.
- 1.1.4 The characteristics of the existing road and traffic contribute to a poorer safety performance compared with a modern highway standard designed to accommodate the forecast traffic. 34 collisions were recorded over a five-year period on the existing single carriageway section which included one fatal and seven serious collisions.
- 1.1.5 Rail provides the main mode alternative for strategic traffic. The scheme is in a rural location so there are limited buses available serving the local communities, and walking and cycling is limited by the lack of facilities and distances to major urban settlements for commuting trips.
- 1.1.6 Transport modelling has been undertaken by using the South West Regional Traffic Model developed by Highways England. This has been adapted to better represent the local area around the scheme and has been calibrated and validated to accepted standards set out in the Department for Transport's Transport Analysis Guidance (WebTAG). The model has been used to forecast traffic for a weekday and these forecasts have been used in the economic and environmental appraisals as well as for design purposes. The forecasts are also used to assess traffic impacts in the local area. A summer model has also been created and used to forecast traffic for a summer weekend, when the highest flows are observed on the A303 corridor. These summer forecasts were also used in the economic appraisal.
- 1.1.7 A construction traffic management plan has been developed that will mitigate the impacts of construction on existing traffic flows as far as possible.

2 Introduction

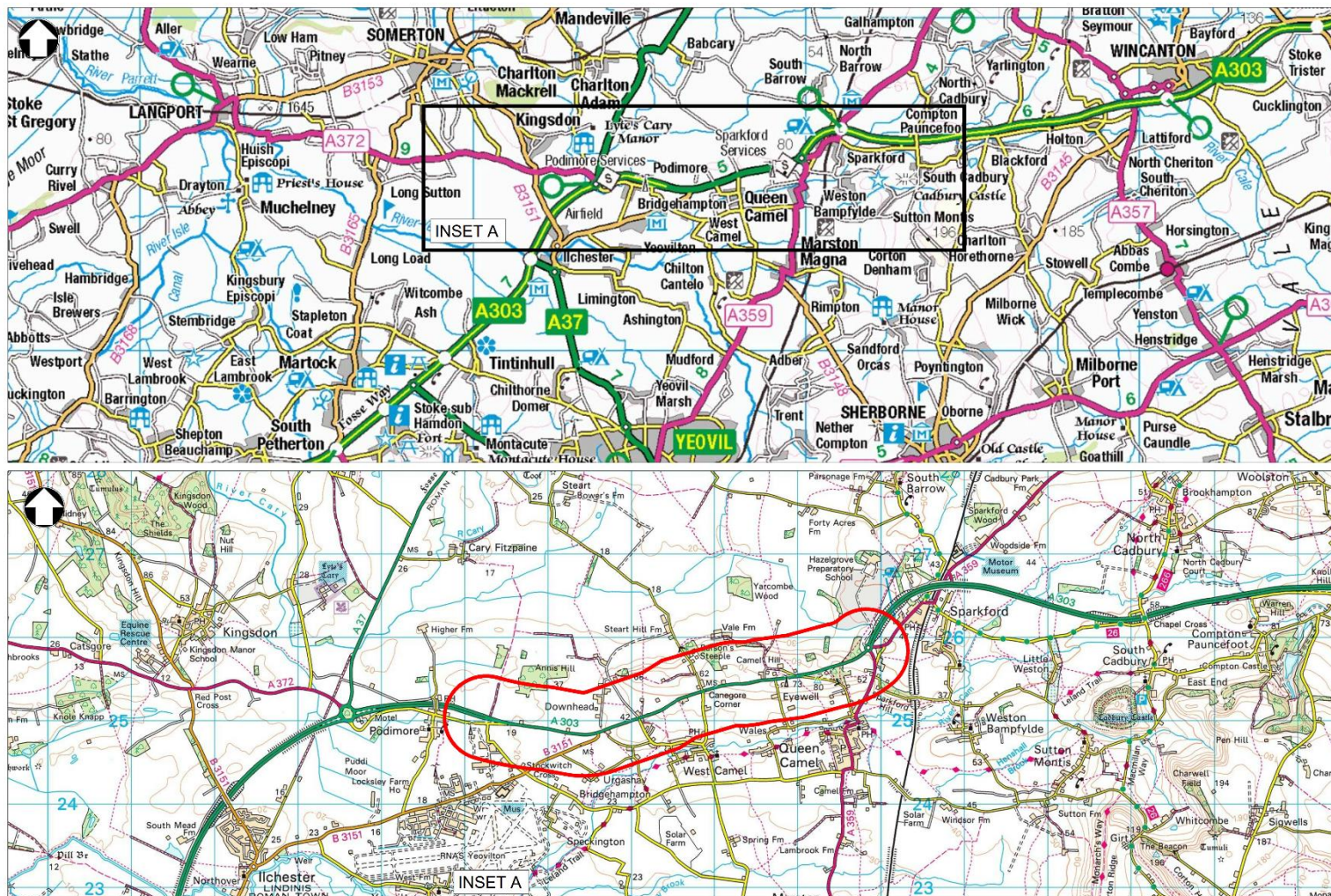
2.1 Glossary

AADT	Annual Average Daily Traffic
AMCB	Analysis of Monetised Costs and Benefits
ARCADY	Assessment of Roundabout Capacity And DelaY – junction modelling software
BCR	Benefits to Costs Ratio
Buffer	Area of the model where junctions are not modelled explicitly
COBALT	Cost and Benefit to Accidents Light Touch
D2AP	Dual 2 lane All Purpose
DCO	Development Consent Order
DoS	Degree of Saturation
DM	Do Minimum – a future year modelled scenario without the scheme
DS	Do Something – a future year modelled scenario with the scheme included
GPS	Global Positioning System
IP	Inter-peak – the modelled weekday time period between 10:00 – 16:00
LINSIG	Linear Signal Analysis – signalised junction modelling software
NMU	Non-Motorised Users
NNNPS	National Networks National Policy Statement
NPPF	National Planning Policy Framework
NTEM	National Trip End Model
PIC	Personal Injury Collisions
PICADY	Priority junction Capacity and DelaY – junction modelling software
QUADRO	Queues And Delays at Roadworks
RFC	Ratio of Flow to Capacity
RIS	Road Investment Strategy
RoF	Region of Focus
RTF	Road Traffic Forecasts
SATURN	Simulation and Assignment of Traffic to Urban Road Networks – highway traffic assignment software
SWARMMS	The South West Area Multi Modal Study
SWRTM	South West Regional Traffic Model
Trafficmaster	The Department for Transport's GPS database
TUBA	Transport User Benefit Appraisal
WebTAG	web-based transport analysis guidance produced by the DfT
WebTRIS	A Highways England TRaffic Information System for storage & dissemination of observed Traffic Flow & Journey Time data on Strategic Road Network (includes TRADS Traffic Flow Data System: Highways England's repository of Strategis Road Network traffic flows prior to May 2015)

2.2 Scheme background and description

- 2.2.1 The proposed scheme is to provide a continuous dual carriageway on the A303 linking the Podimore Bypass and the Sparkford Bypass. The scheme will involve the removal of at-grade junctions and direct accesses. Any new junctions will be constructed to grade separated standards, or to compact grade separated standards depending upon anticipated traffic flows. The extent of the scheme is shown in Figure 2.1.

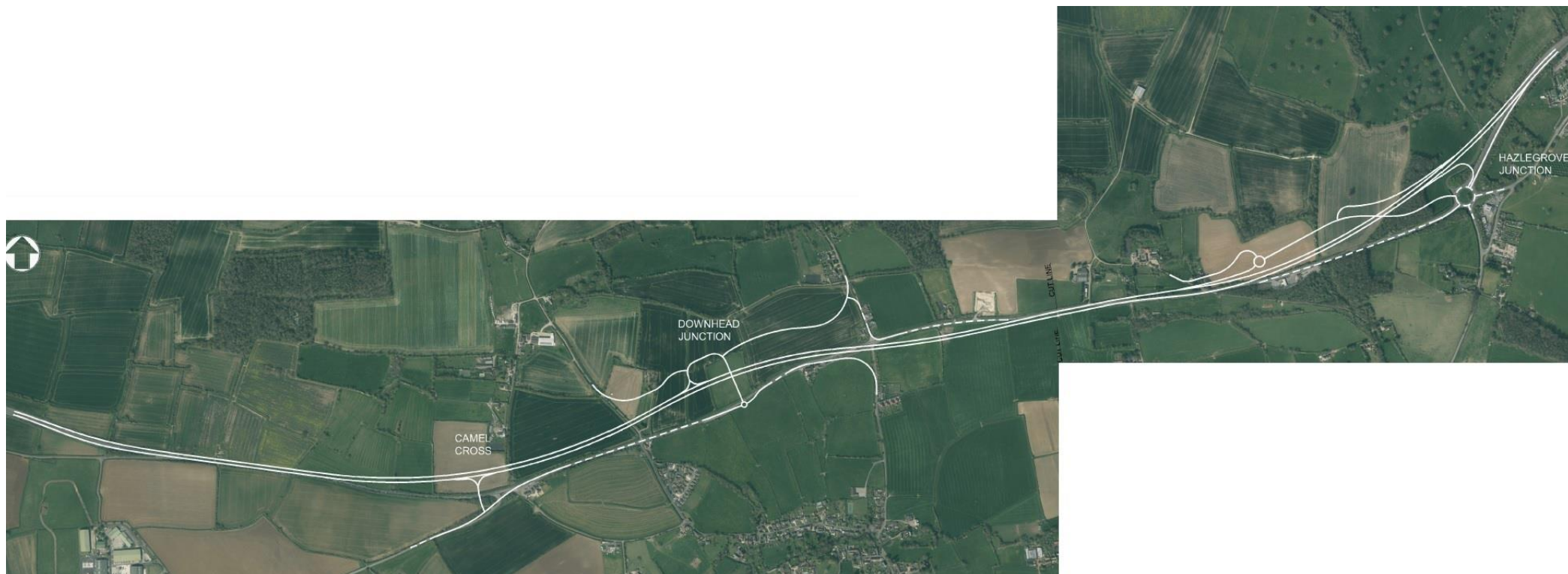
Figure 2.1: Scheme extent



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright.
Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

- 2.2.2 The route follows the existing corridor of the A303 very closely. It is generally considered to be an online solution although is often deliberately aligned just to the side of the existing carriageway in order to allow re-use of the existing route for local access, avoid property or facilitate construction. At its maximum offset the route is typically 100m either north or south of the existing A303.
- 2.2.3 At its western limits the option ties in with the existing dual carriageway A303 Podimore Bypass. Travelling eastwards, the route initially follows the existing A303 closely until the B3151 before moving north of the existing carriageway and rising up just to the south of Downhead before crossing over the existing A303 at Canegore Corner. This passes very close to the Noise Important Area at the West Camel Methodist Church (depicted by a “ + “ symbol on Figure 1 just to the west of Canegore Corner). The route then takes a southerly alignment briefly before meeting up with the existing road again to pass between a Scheduled Ancient Monument and an MOD signal station at the crest of Camel Hill. Finally, the route then bypasses the existing Hazlegrove Roundabout to the north through a registered park and garden associated with Hazlegrove House before tying into the existing A303 north of Sparkford Village.
- 2.2.4 A new all movements grade separated junction will be provided in the vicinity of the Hazlegrove Roundabout. This will enable free flowing passage of traffic on the A303. The junction will incorporate entry and exit slip roads in both directions providing connections to Hazlegrove House, the A359, access to villages south of the route and access to properties at Camel Hill to the north of the route. A limited movements junction comprising eastbound slips only will be provided in the vicinity of Downhead. A limited movement junction will be provided in the vicinity of the junction with the B3151 comprising westbound exit and entry slip roads.
- 2.2.5 A connection will be provided between local roads to the north and south of the route in the vicinity of Canegore Corner via an overbridge, incorporating a link to the A303 Eastbound via the junction at Downhead. At the western end of the scheme the existing westbound slip road to Podimore village will be closed. Access to Podimore village will therefore be via the A303 / A37 junction (Podimore Roundabout).
- 2.2.6 The layout of the scheme is shown in Figure 2.2.

Figure 2.2: Scheme layout



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

2.3 Scope of the report

- 2.3.1 This document is one of a number that support the Development Consent Order (DCO). It provides a description of the existing transport features in the locality, the policy context, a summary of the transport modelling work undertaken and describes the transport impacts of the scheme.

2.4 Scheme objectives

- 2.4.1 The objectives for the scheme are set out in the Client Scheme Requirements and are summarised below for the transport and operational objectives.
- 2.4.2 The scheme assessed is part of the Highways England *Road Investment Strategy* (RIS) to improve England's motorways and major roads, and falls in the 2015 to 2020 road period.
- 2.4.3 The scheme will be developed as high quality Dual 2 lane All Purpose (D2AP) carriageway, making a contribution to the longer-term aspiration of a high quality D2AP link between the south-east and the south-west.
- 2.4.4 The specific transport objectives identified are:
- Supporting economic growth
 - Reducing congestion and ensuring connectivity of businesses in the local area
 - Contribute to the future aspiration to connect London with the south-west, supporting the continued economic growth of the local area and the south-west more widely
 - A safe and serviceable network
 - Designing to required standards whilst keeping in mind future safety and maintainability requirements
 - Removing at grade junctions (both left and right turns) onto this section of the A303, creating a safer means of access for traffic, including local traffic movements
 - A more free-flowing network
 - This section of the A303 currently suffers from congestion at peak times and dualling this section will help to create a more resilient road with a higher capacity
 - An improved environment
 - Working closely with statutory environmental bodies to ensure flood risk (of particular local interest) is accurately modelled and appropriately mitigated
 - Liaising closely with Historic England to ensure the protection of a Scheduled Ancient Monument

- An accessible and Integrated Network
 - Working with local Non-Motorised User (NMU) groups to help inform a design acceptable to pedestrians, equestrians and cyclists.

2.5 Discussions with local authorities

2.5.1 Technical Working Group meetings were convened with the local highway authority, Somerset County Council, with the local planning authority, South Somerset District Council, copied into meeting records and invited to attend if they wished. Meetings have also been held with the West Camel, Queen Camel, Sparkford and Yeovilton parish councils. The scheme design, traffic modelling and local impacts were shared and discussed during these meetings.

2.6 Traffic modelling

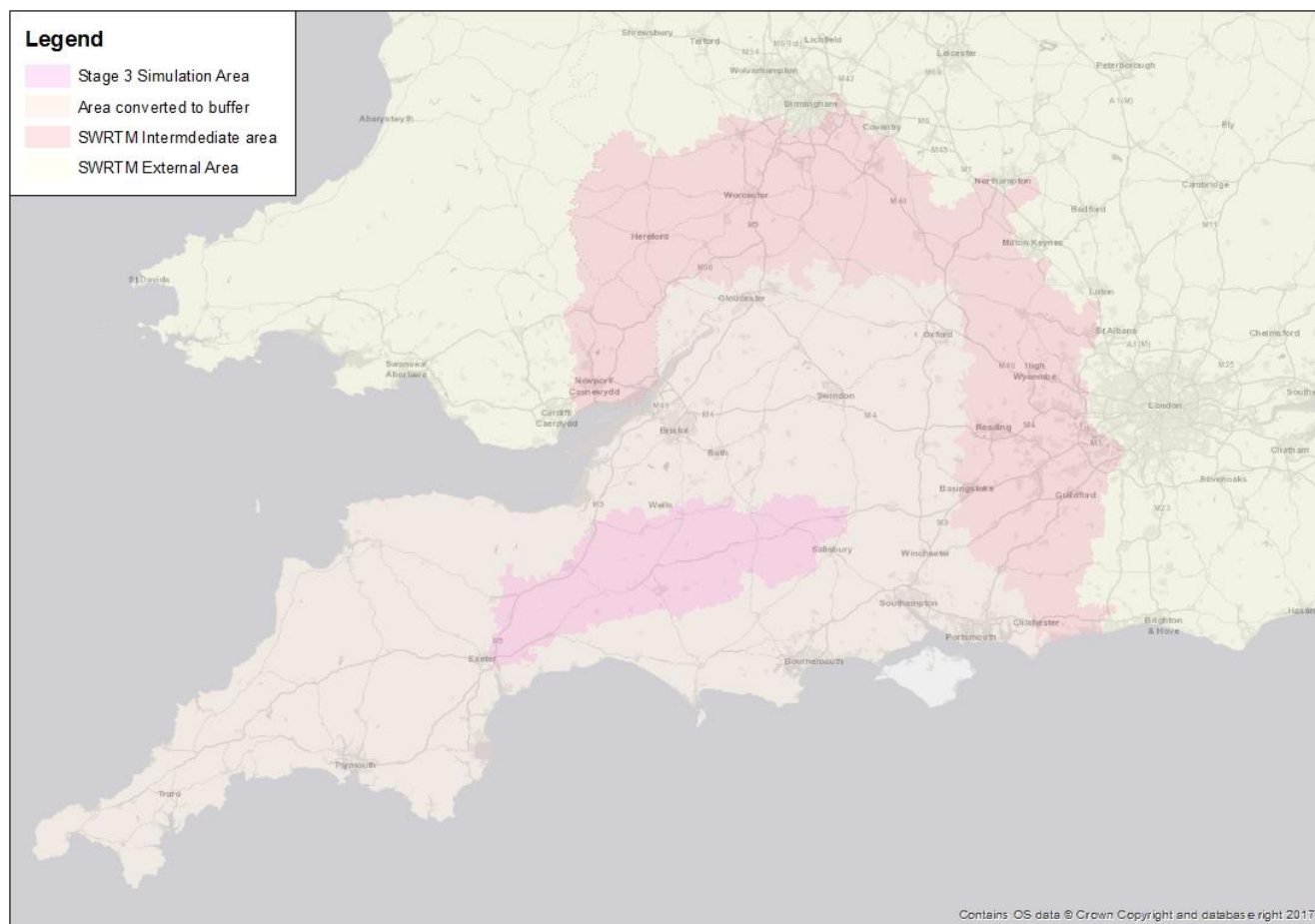
2.6.1 A traffic model has been developed for the scheme using the South West Regional Traffic Model (SWRTM), one of five regional models developed by Highways England. The model represents an average Monday to Friday weekday in March 2015 (excluding school holidays and bank holidays). To represent the higher traffic flows that occur at weekends and during holiday periods, a separate summer model was also developed to represent these peak traffic periods in the economic appraisal.

2.7 Study area

2.7.1 Four main areas have been defined within the traffic model (see Section 6 for details on the model set up) as follows. Figure 2.3 shows these areas.

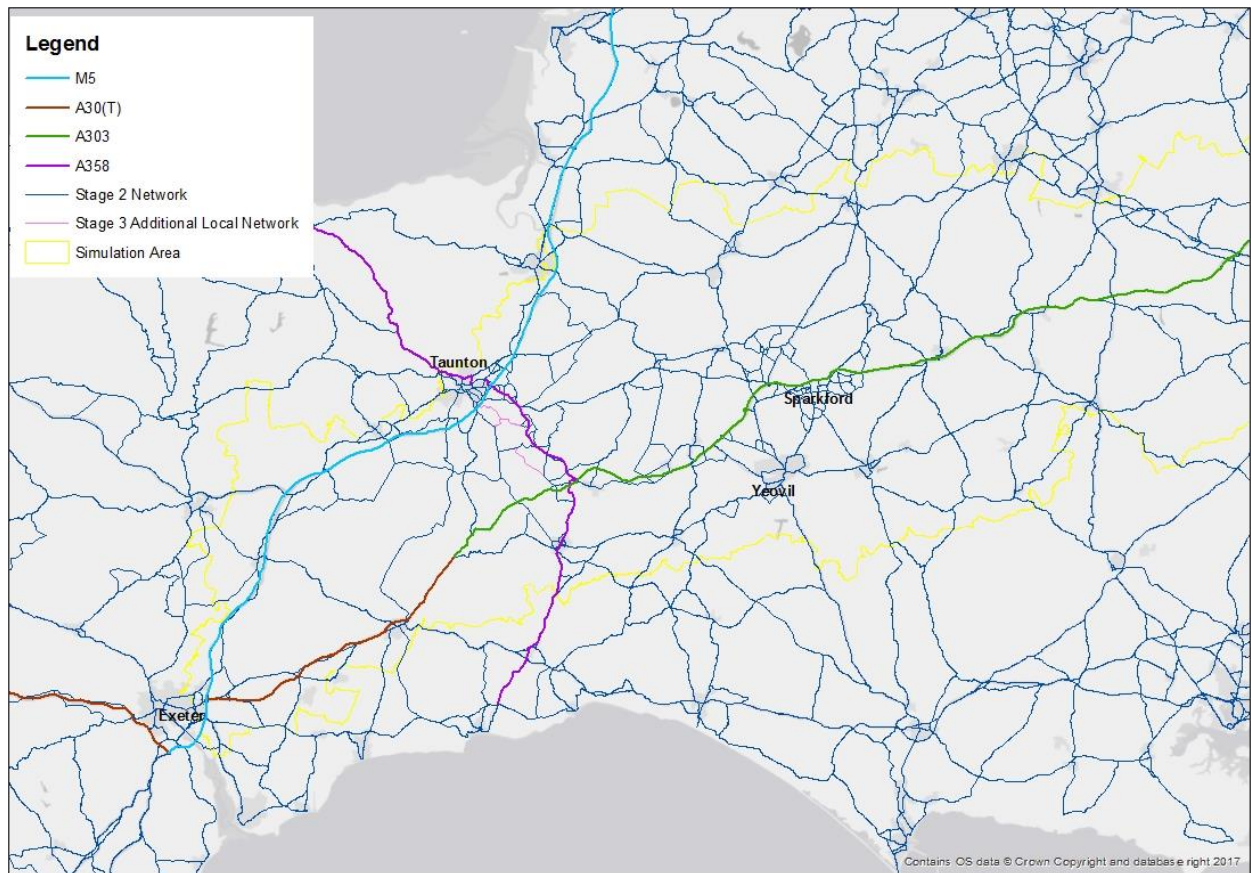
- Simulation area – this is the area over which proposed intervention has its main strategic and local impact, and includes the area parallel to the A303 between Exeter and Taunton to the west and Salisbury and Amesbury to the east (see Figure 2.4). The simulation area was determined by the main area of impact from the stage 2 environmental assessment.
- Area converted to buffer – this comprises the network within the South West Regional Traffic Model (SWRTM) Region of Focus (RoF) but outside of the A303 stage 3 simulation area. This area of the network has detailed coverage as it still contains all the links, nodes and zones included in the SWRTM but these have been converted to buffer network.
- Intermediate area – this is the same as the intermediate area defined in the SWRTM (see the SWRTM Model Validation Report, March 2017). This area is adjacent to the area converted to buffer and has a more detailed network coverage than that of the external area.
- External area – this is the same as the external (or buffer) area defined in the SWRTM. The impacts of the A358 Taunton to Southfields Dualling and the A303 Stonehenge schemes can be assumed to be negligible here.

Figure 2.3: Fully modelled area



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

Figure 2.4: Detailed modelled area



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

3 Policy context

3.1.1 As part of this scheme, a review of the current legislation and planning policy concerning the scheme has been undertaken in the DCO document ***Case for the Scheme (TR010036/APP/7.1)***.

3.1.2 Policies that have a direct impact on transport modelling are listed below. These have been taken into account during modelling as per WebTAG guidance. For example, transport schemes and developments are included in an uncertainty log and those that have near certain and more than likely status are taken into account during forecasting.

- National Planning Policy Framework (NPPF) and National Planning Practice Guidance (NPPG)
- National Networks National Policy Statement (NNNPS)
- Highways England Policy - Road Investment Strategy (RIS) Policy Paper and Highways England Strategic Business Plan

- Local Policy - South Somerset District Council Local Plan 2006-2028; South Somerset District Council Housing and Economic Land Availability Assessment, February 2017; Somerset County Council's Future Transport Plan 2011-2026

4 Existing road network

4.1 Existing route corridor

- 4.1.1 The A303 / A30 forms part of the strategic road network and is a strategic link between the south-west and the south-east and London. The route is comprised of multiple road standards including dual carriageway, single carriageway and single carriageway sections with overtaking lanes. Speed limits also vary between 40mph and 70mph depending on the character of the road and its surroundings.

4.2 Existing project road

- 4.2.1 The section of the A303 that is being upgraded as part of this project commences at the eastern limits of the existing dual carriageway at Podimore Bypass. Travelling east, the route reaches the junction with the B3151 which provides access to Ilchester and Yeovilton where the Royal Naval Air Station Fleet Air Arm Museum is located. The A303 route then bears north-east and rising upwards through Canegore Corner to reach the crest of Camel Hill at Eyewell. This section of the A303 route is characterised by a single lane road, with double white lines negating overtaking and subject to a 50mph speed limit. There are several priority junctions along the route giving access to the settlements of Queen Camel and West Camel to the south and Downhead to the north, as well as several farm accesses and parking laybys.
- 4.2.2 From the crest of Camel Hill, the route descends to meet the roundabout at the western limit of the dual carriageway at Sparkford Bypass (Hazlegrove Roundabout). This section comprises two lanes in the westbound direction, one lane in the eastbound direction and is also subject to a 50mph speed limit. Hazlegrove Roundabout forms a junction between the A303 and the A359 which runs south through Queen Camel and north-east through Sparkford. The roundabout also provides access to a service station, and to a school at Hazlegrove House.
- 4.2.3 The section of the A303 that is to be upgraded is 5.6 kilometres long.

4.3 Key routes

- 4.3.1 Key routes through the study area include the A303, the A359, the A37, the A372 and the B3151. However, possible alternative strategic routes to the A303 include the M4 / M5 route to the north and the A31 / A35 route to the south.

4.4 Key junctions

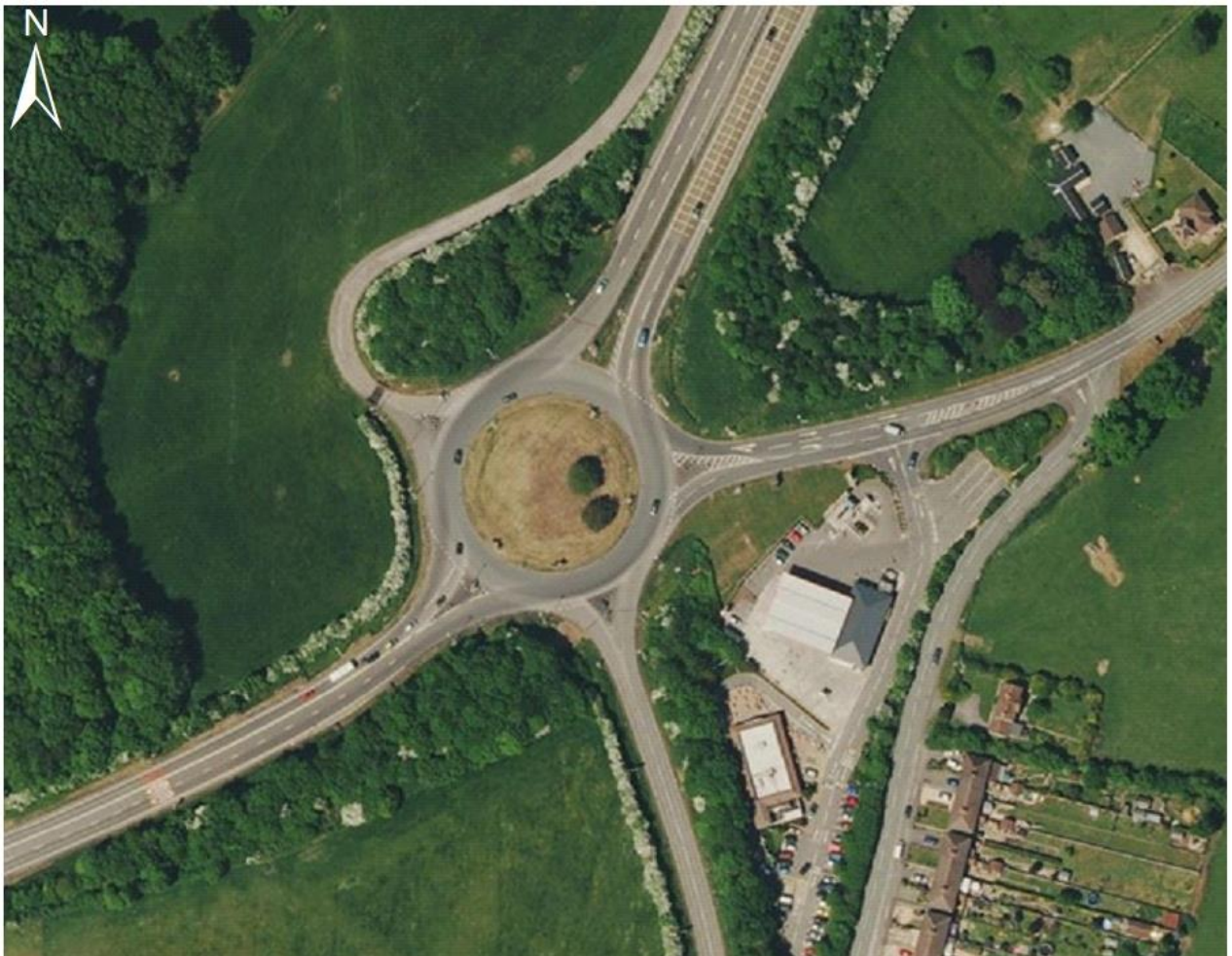
- 4.4.1 Key junctions along A303 include Hazlegrove and Podimore Roundabouts and priority junctions at Howell Hill / Streat Hill, Plowage Lane / Downhead Lane and the B3151 at Camel Cross. All these are surface level (called at grade) junctions. The following sections provide some descriptions of the layout and operation of

these junctions. There are junctions with other minor roads, namely Gason Lane and Traits Lane, but these carry very low traffic flows.

Hazlegrove roundabout

4.4.2 The Hazlegrove Roundabout is a five arm at grade roundabout. The A303 runs north-east to south-west and has a speed limit of 70mph to the north-east of the roundabout and 50mph to the south-west. The A359 runs north-east to south and has a speed limit of 60mph and there is also a minor arm that provides the access to Hazlegrove Preparatory School which joins the roundabout from the north-west. The north-east dual carriageway approach of A303 comprises two lanes. The south-west approach of the A303 and both A359 approaches comprise one lane but flare into two at the roundabout. The Hazlegrove Preparatory school approach comprises one lane.

Figure 4.1: Hazlegrove roundabout layout



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

Howell Hill / Steart Hill priority junction

- 4.4.3 Howell Hill and Streat Hill are two narrow country lanes with 30mph speed limits. Both approaches consist of a single lane which flares at the give way line and traffic can turn left, ahead or right from both approaches. Traffic on the A303 from both the east and the west can turn left or right. There are refuge areas on the A303 for right turning traffic.

Figure 4.2: Howell Hill junction layout



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

Plowage Lane / Downhead Lane priority junction

- 4.4.4 Plowage Lane and Downhead Lane (Figure 4.3) are two narrow country lanes with 30mph and 60mph speed limits respectively. Both approaches are single lane priority where traffic can turn left, ahead or right. Traffic on the A303 from both east and west can turn left or right. There are refuge areas on the A303 for right turning traffic.

Figure 4.3: Plowage Lane junction layout



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

B3151 priority junction

4.4.5 The B3151 (Figure 4.4) is a single lane 40mph road. It forms a T junction with A303 and the approach flares into two lanes. Traffic from the B3151 can turn left or right onto the A303. Traffic on the A303 from west can turn right onto the B3151 making use of the refuge area on A303. Traffic on the A303 from the east can use a left turn slip road to join the B3151.

Figure 4.4: B3151 junction layout



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

Podimore roundabout

4.4.6 The Podimore Roundabout is a five arm at grade roundabout. The A303 runs east to west and has a speed limit of 70mph. The A37 runs north to south and has a speed limit of 60mph. The A372 runs north-west and has a speed limit of 60mph. The minor arm that supports the access to Podimore service station and Podimore village joins the roundabout from south and has a speed limit of 30mph. The eastern and western approaches of A303 are signal controlled and comprise two lanes on each approach. The A37 approach is also signal controlled and flares into 2 lanes at the stop line. The A372 and the minor arm approach are under priority control and flare into two lanes at the roundabout.

Figure 4.5: Podimore Roundabout layout



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

4.5 Existing traffic flows

4.5.1 The single carriageway between Sparkford and Ilchester constrains the throughput on the A303 during peak periods. Existing annual average daily traffic (AADT) levels are 23,400 (in 2015). This can be compared with the advice on design standards for new carriageways (set out in the Design Manual for Roads and Bridges in TA 46/97) which identifies that the most appropriate economic solutions based on traffic flows in the opening year of a scheme. A new single carriageway would be the most appropriate solution for AADTs up to 13,000 and for a dual 2 lane all-purpose carriageway the standard would be appropriate up to an AADT of 39,000. Therefore, even based on 2015 traffic flows rather than forecast flows for the opening year, the traffic flow substantially exceeds the upper threshold for a single carriageway, indicating that a dual carriageway would be a more appropriate standard for this level of traffic.

4.6 Existing operational performance

- 4.6.1 The single carriageway between Sparkford and Podimore carries high traffic flows relative to its capacity. This, together with the alignment, number of junctions, occurrence of slow moving vehicles such as heavy goods vehicles and agricultural vehicles, and limited opportunities for overtaking means that journey times increase and the reliability of travel times reduces. In the creation of the SWRTM, journey time routes and segments were defined to assess the performance of the model in terms of journey times. The scheme lies in the segment “Podimore to Wincanton”. Existing journey times on the Podimore and Wincanton segment are around 12 minutes during weekdays rising to an average of around 14 minutes in summer peak periods (note that the average for the summer peak masks much higher journey times that can occur in particular hours and in just one direction).
- 4.6.2 Travel time reliability was measured using Trafficmaster (a DfT Global Positioning System (GPS)-based database) data for the existing single carriageway section between Sparkford and Podimore and compared with the reliability of travel time on the adjacent dual carriageway sections. This is measured using the standard deviation of travel times from the data recordings and these are compared in Table 4.1 below (for 2015 data) on a per kilometre basis in seconds. For weekdays, the single carriageway standard deviation is around 10 seconds per kilometre so would amount to around 50 seconds over the 5.6km single carriageway section which would reduce to about 20 seconds for a similar length dual carriageway (taking the inter-peak figure). However, for the summer peak, the variability would increase to around 200 seconds for the single carriageway which would reduce to around 90 seconds for a similar length dual carriageway.

Table 4.1: Reliability of single and dual carriageway sections

	Standard deviation of journey times (sec / km)			
	AM	IP	PM	Summer
Single carriageway	10.6	10.9	10.6	39.6
Dual carriageway	3.5	4.1	6.7	17.7

4.7 Safety

- 4.7.1 34 collisions were recorded on the single carriageway section over a five-year period to the end of 2014 (immediately prior to the 2015 base model). Of these, 1 was fatal, 7 were serious and 26 were slight personal injury collisions. The provision of a modern standard dual carriageway to replace the single carriageway would be expected to provide reduced occurrences of collisions. This has been assessed and is reported later.

5 Sustainable transport

5.1 Rail

- 5.1.1 The primary alternative mode for the dominant long-distance trips on the A303 corridor would be rail. There are three main rail routes between the south-east and the south-west peninsular (see Figure 5.1) listed below. The first two broadly follow the A303 corridor.
- The London Waterloo to Exeter line via Salisbury, approximately hourly on weekdays
 - The Hants and Berks line via Newbury and Westbury, approximately hourly on weekdays
 - The Great Western Main Line via Bristol, approximately once or twice hourly on weekdays.
- 5.1.2 The South West and South Wales Multi-Modal Study (SWARMMS) strategy identified improvements required to these lines, and a number of these have been implemented. Whilst further improvements would deal with existing capacity and speed issues, it would be impossible for a rail improvement to entirely solve the identified problems in the A303 Sparkford to Ilchester Dualling scheme location.
- 5.1.3 The nearest railway line is between Castle Cary and Charlton Mackrell, approximately 4 kilometres to the north of Sparkford. Castle Cary is the nearest railway station, located approximately 8 kilometres north-east of Sparkford.

Figure 5.1: Rail routes to the south-west



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

5.2 Bus

5.2.1 Numerous bus and coach services are known to utilise the existing A303 between Sparkford and Ilchester, although there are no scheduled stops along the scheme section of the A303. The following bus services pass through the local area.

- South West Coaches Services 1, 1A and 1B from Oakhill to Yeovil Bus Station via Sparkford inn, Queen Camel, Marston Magna, hourly service in each direction
- Mendip Community Transport Service 665 from Yeovil the Borough to Kingweston via Podimore, Tuesdays and Fridays, one service in each direction
- South West Coaches Service 5 from Babcary, The Red Lion to Yeovil Bus Station via Sparkford Inn, West Camel post office, Wednesdays only, one bus in each direction
- South West Coaches Service 8 from Pilton to Yeovil Bus Station via Podimore Inn, West Camel post office, Fridays only, one bus in each direction

5.3 Cycle routes

- 5.3.1 There are no designated cycle routes that intersect the scheme section of the A303, but Sustrans national cycle route 26 runs from Portishead on the Somerset Coast to the Isle of Portland on the Dorset coast via Sparkford.

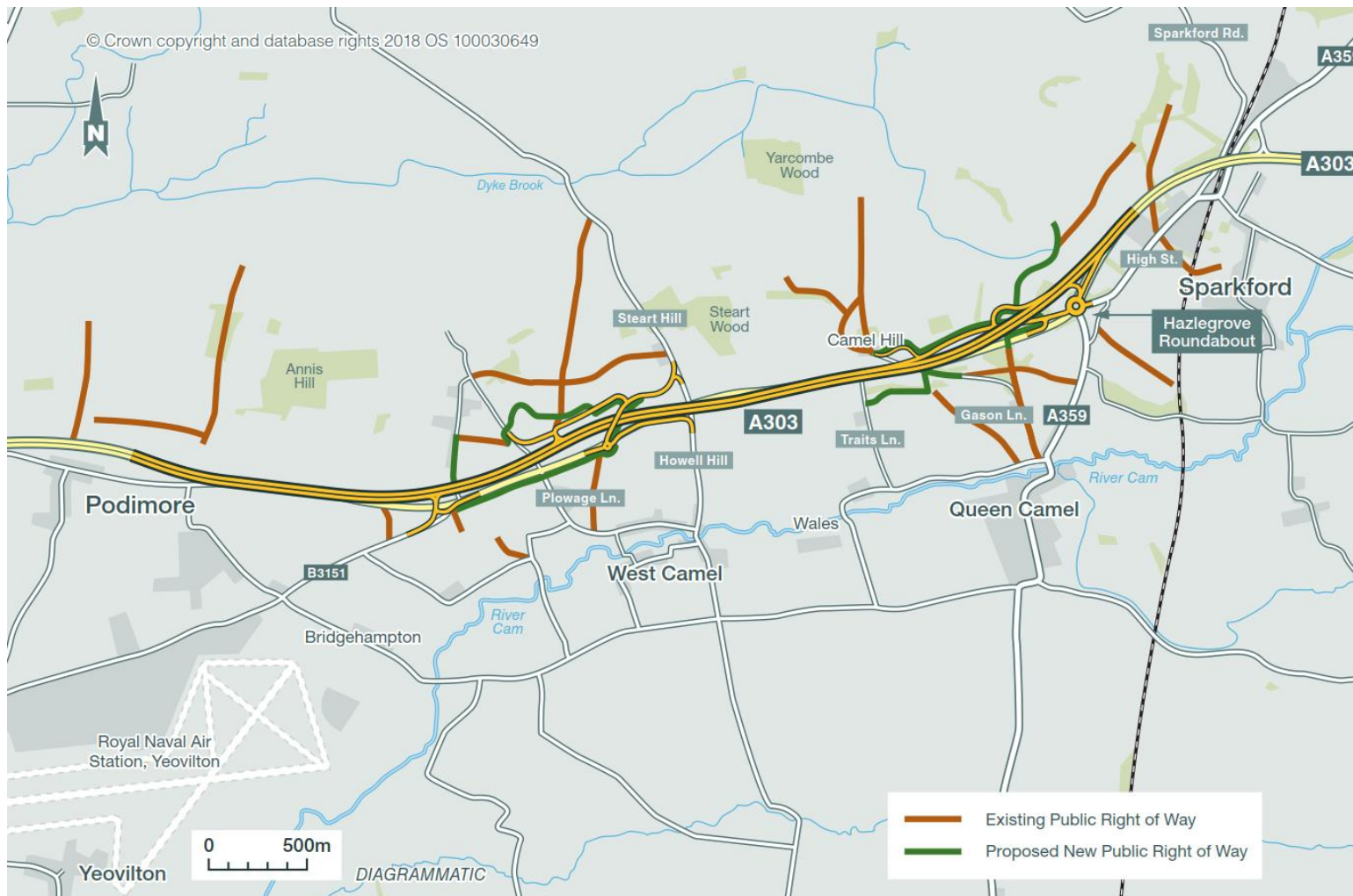
5.4 Non-motorised user provision

- 5.4.1 Existing non-motorised user (NMU) facilities along the proposed route include:

- A footpath crossing of the Podimore Bypass via an existing bridge at Podimore (the Higher Farm Lane Accommodation Bridge)
- A byway, known as Eastmead Lane, which connects with the eastern end of the Podimore Bypass and runs northwards. This appears to be part of a historical north-south route that was severed by the construction of the bypass and, although it can still be accessed from the road, is not likely to be well used due to the difficulty of accessing it
- Various north-south footpath connections across the existing A303 providing links between Downhead and West Camel; Steart Hill and Howell Hill; Traits Lane and Camel Hill Farm; and Gason Lane and the grounds of Hazlegrove House Registered Park and Garden
- Byways known as Downhead Lane and Mead Lane north of Downhead
- A long-distance walking route known as the Celtic Way, which crosses the existing A303 adjacent to Traits Lane, and continues northwards
- An at-grade footpath crossing of the existing dual carriageway Sparkford Bypass which connects Sparkford village with the grounds of Hazlegrove House Registered Park and Garden

- 5.4.2 The existing and proposed NMU provisions are displayed in Figure 5.2.

Figure 5.2: Map of non-motorised user crossing points



Source: Highways England. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

6 Transport modelling

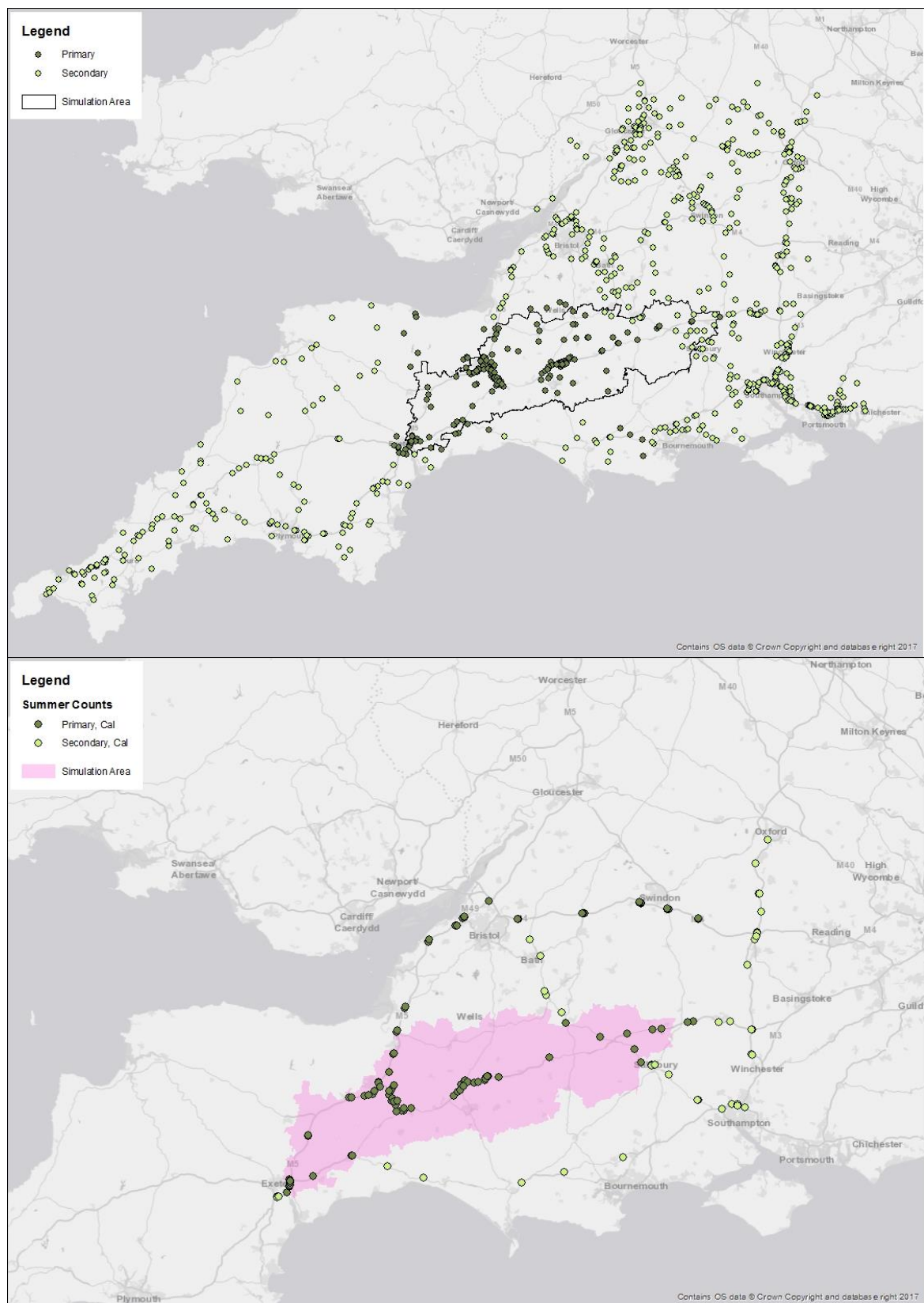
6.1 Introduction

- 6.1.1 The traffic model has been developed in the SATURN software using the South West Regional Traffic Model (SWRTM). The model represents three weekday time periods that are consistent with the SWRTM time periods. These are an average AM peak period hour (07:00-10:00), an average hour in the inter-peak (10:00–16:00) and an average PM peak period hour (16:00–19:00) for an average Monday to Friday weekday in March 2015 (excluding school holidays and bank holidays).
- 6.1.2 To represent the higher traffic flows that occur at weekends and during holiday periods, a separate summer model covering an average hour between 10:00-19:00 Friday – Sunday in August was also developed to represent these peak traffic periods in the economic appraisal.

6.2 Data collection

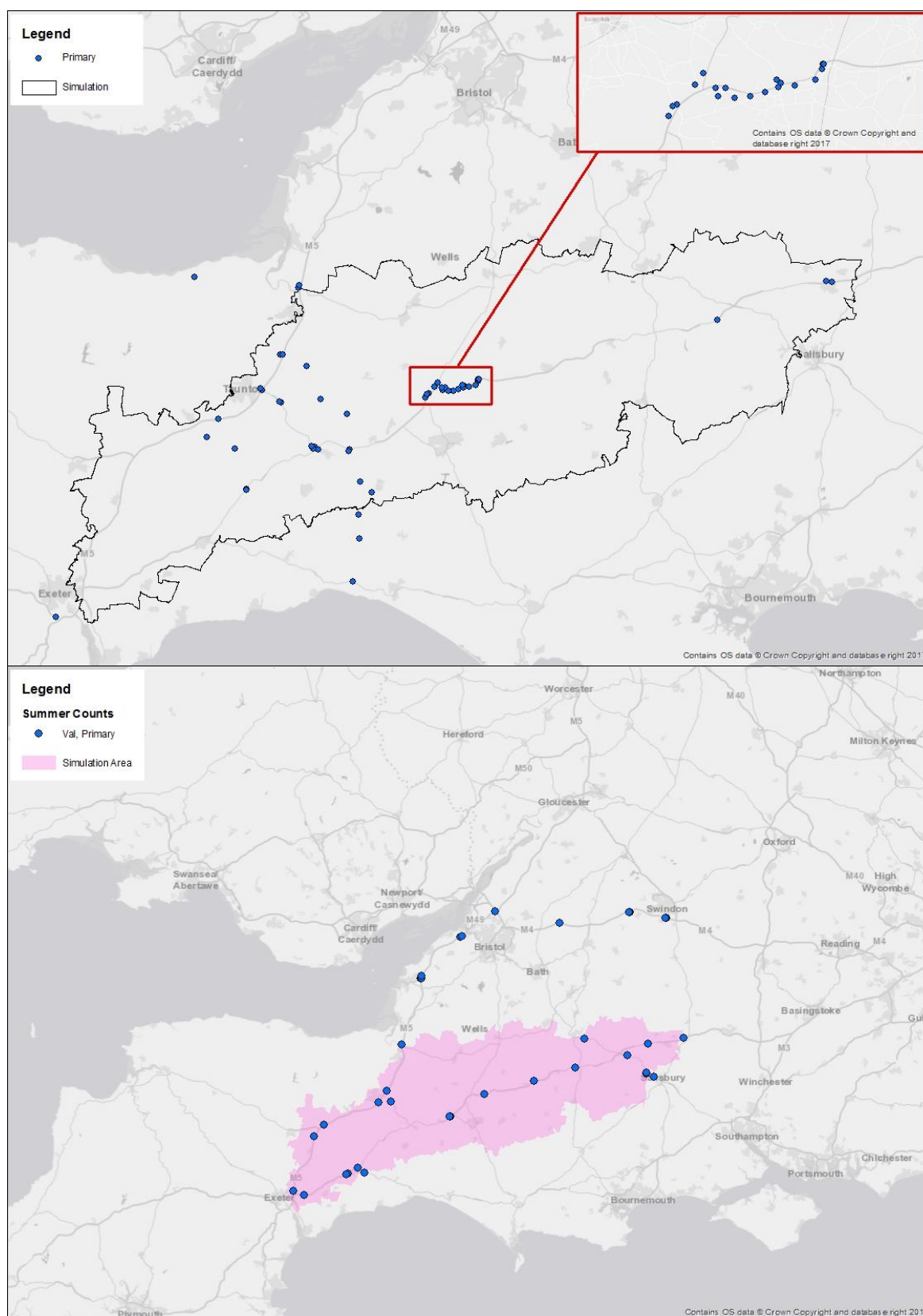
- 6.2.1 The SWRTM network was enhanced in the local areas using network and zoning data from the A303 Sparkford to Ilchester Dualling and A358 Taunton to Southfields Dualling stage 1 models, in order to assess both schemes with the same base model. Figure 2.4 shows the road network included in the local area.
- 6.2.2 The neutral month model matrices were obtained from the SWRTM and disaggregated in accordance with the more detailed zoning system used near the two schemes. The summer model matrices were derived using Highways England Trip Information System (TIS) data, using the methodology stated in the ***Combined Modelling and Appraisal Report (TR010036/APP/7.6)***.
- 6.2.3 For the neutral month model, the journey time routes of the SWRTM and the two stage 1 local routes were combined to create the routes for the stage 3 model. The observed journey times were obtained from the parent models. Any route sections from the stage 1 models which were already included in the SWRTM were disregarded and any SWRTM routes which did not lie at least partially within the stage 3 simulation area were also not reported.
- 6.2.4 For the summer model, Trafficmaster journey time data was obtained for the 2015 summer months and used to derive fixed speeds for the buffer links and to calibrate the stage 3 summer model.
- 6.2.5 Volumetric data were obtained from the SWRTM and additional manual and automatic traffic counts were undertaken or extracted from the WebTRIS database in order to enhance the calibration and validation in the local area. The final volumetric datasets are displayed in Figure 6.1 - Figure 6.3.

Figure 6.1: Calibration link counts for the neutral month model (top) and summer model (bottom)



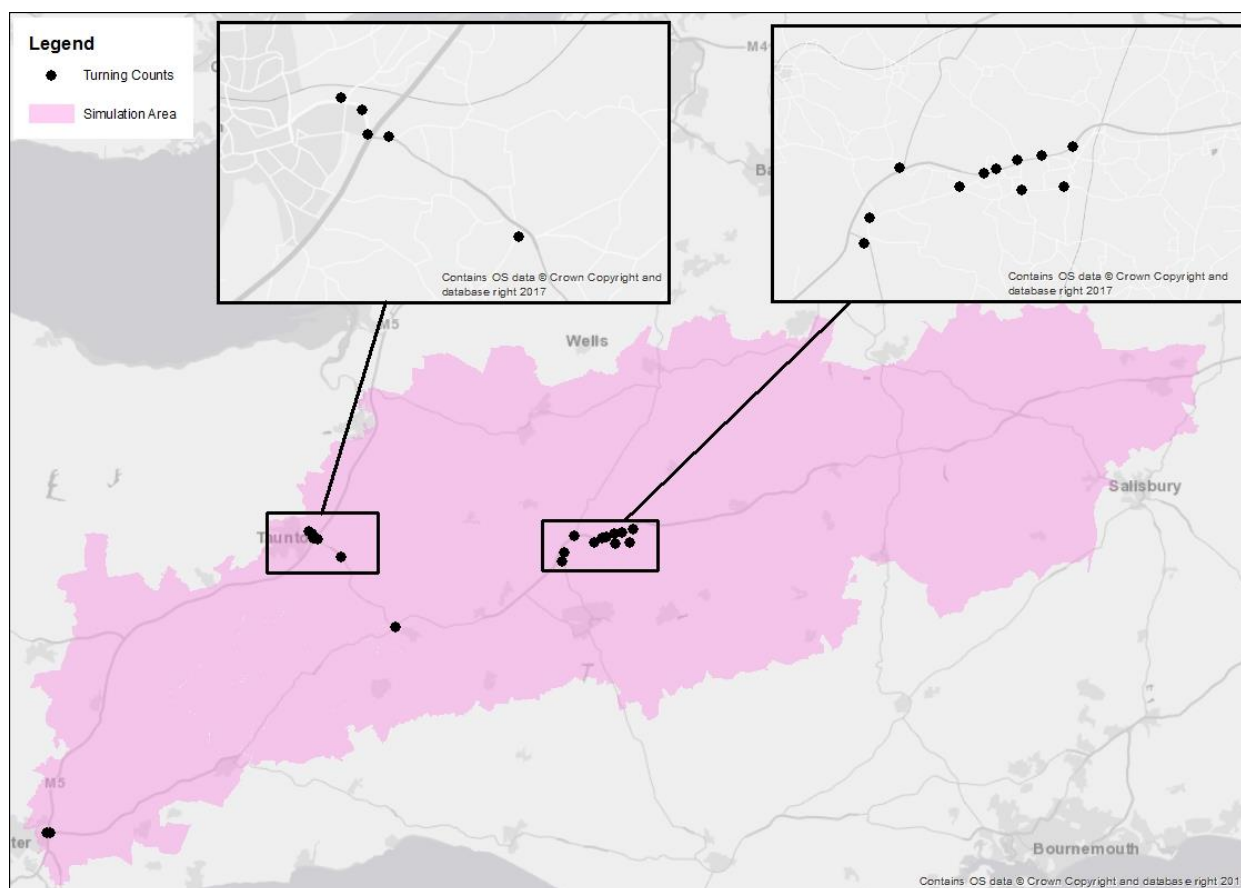
Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

Figure 6.2: Validation link counts for the neutral month model (top) and summer model (bottom)



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

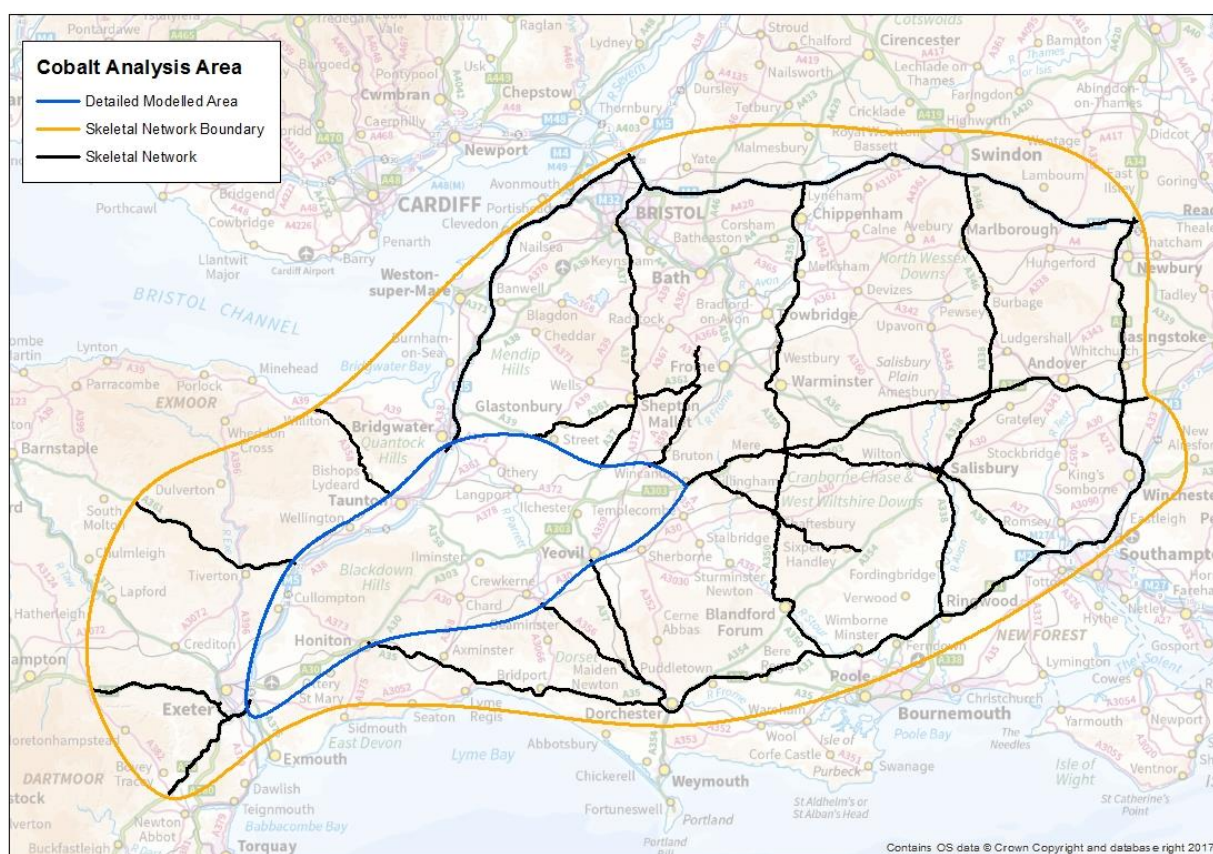
Figure 6.3: Calibration turning counts (neutral month model)



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

- 6.2.6 An uncertainty log was created in collaboration with the local planning and highway authorities to obtain from them information on future housing and employment development sites and any local network schemes for use in the forecasting models.
- 6.2.7 For the economic appraisal, collision data for 2010-2014 were obtained from Somerset and Devon County Councils for the detailed modelled area within the blue shape in Figure 6.4 and default accident rates were used for the remainder of the displayed network. Somerset County Council also provided information on the collisions in terms of casualties incurred, which was used in the distributional impact analysis.

Figure 6.4: Stage 3 COBALT assessment area



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

6.3 Base model development

- 6.3.1 The SATURN model comprised of 1,933 zones and a sub-regional road network. The simulation area covers the area parallel to the A303 between Exeter and Taunton to the west and Salisbury and Amesbury to the east (see Figure 2.3 and Figure 2.4).
- 6.3.2 The SWRTM trip matrices have been adapted with additional local zones added to better represent the distribution of trips local to the proposed schemes. A matrix estimation process was also carried out in the calibration process.
- 6.3.3 The SATURN model convergence meets WebTAG criteria in all time periods. The model achieves a good level of flow calibration with results indicating a close match to observations on the calibration screenlines (the slightly lower pass rate for screenlines is mainly due to the Bridgewater cordon which falls outside the criteria at least for one direction, this will not have a significant impact on scheme appraisal due to it being far away from the scheme). For individual link counts, the required WebTAG criteria were met in all time periods (Table 6.1).

Table 6.1: Calibration link and screenline results

	WebTAG criteria	Number	AM	IP	PM
Primary screenlines within 5%	All or nearly all	18	89%	83%	94%
Primary links and turns passing GEH or flow criteria	>85%	538	92%	95%	91%

6.3.4 Flow validation has been undertaken against independent data not used in calibration or for the matrix building exercise. An assessment of the validation process shows that the model achieves link flow and screenline validation in line with the WebTAG criteria in all cases (Table 6.2).

Table 6.2: Model validation results summary

	WebTAG criteria	Number	AM	IP	PM
Primary screenlines within 5%	All or nearly all	6	100%	100%	100%
Primary links passing GEH or flow criteria	>85%	88	94%	99%	94%
Journey Time Routes within 15%	>85%	35	100%	100 %	100%
Journey Time Segments within 15%	>85%	181	94%	96%	96%

6.3.5 As seen from Table 6.2, the journey time validation is considered to be good in all time periods with the model recreating journey times that are representative on key routes in the modelled area: the journey time route validation meets WebTAG criteria and the journey time segment validation also meets the criteria across all time periods.

6.3.6 In conclusion, it is considered that the 2015 base year traffic assignment model calibrates and validates to within acceptable margins of the WebTAG criteria and therefore demonstrates a good representation of traffic behaviour in the study area and forms a robust basis from which future year forecasts and option testing can be developed.

6.3.7 More details on data collection, model development and calibration and validation can be found in the **Combined Modelling and Appraisal Report (TR010036/APP/7.6)**.

6.4 Model forecasting

6.4.1 Traffic forecasts have been prepared for the current estimated opening year for the scheme, 2023, and the scheme design year, 2038. Two additional forecast years, consisting of an intermediate year of 2031 and a final forecast year of 2051, have also been used to support the economic appraisal of the scheme. The forecasts have used NTEM / TEMPRO v7.2 and Road Traffic Forecasts (RTF) 2015 forecasting data as well as accounting for local developments which have been assessed in an uncertainty log in accordance with WebTAG unit M4. In addition to the developments, other transport schemes have also been

included in the baseline assessment case, referred to as the Do Minimum scenario. Transport schemes and developments included in the Do Minimum forecast scenario are those categorised as near certain or more than likely in the uncertainty log, which include the A358 Taunton to Southfields Dualling and A303 Stonehenge RIS1 schemes.

- 6.4.2 The traffic forecasts have been undertaken using a variable demand modelling approach that is consistent with that applied in the development of SWRTM. This represents traveller responses to changing transport costs resulting in redistribution, mode choice and time period choice.
- 6.4.3 Traffic forecasts have been prepared for the scenario with the scheme, also referred to as the Do Something as well as a scenario without the scheme, the Do Minimum.
- 6.4.4 More details on traffic forecasting including variable demand modelling can also be found in the ***Combined Modelling and Appraisal Report (TR010036/APP/7.6)***.

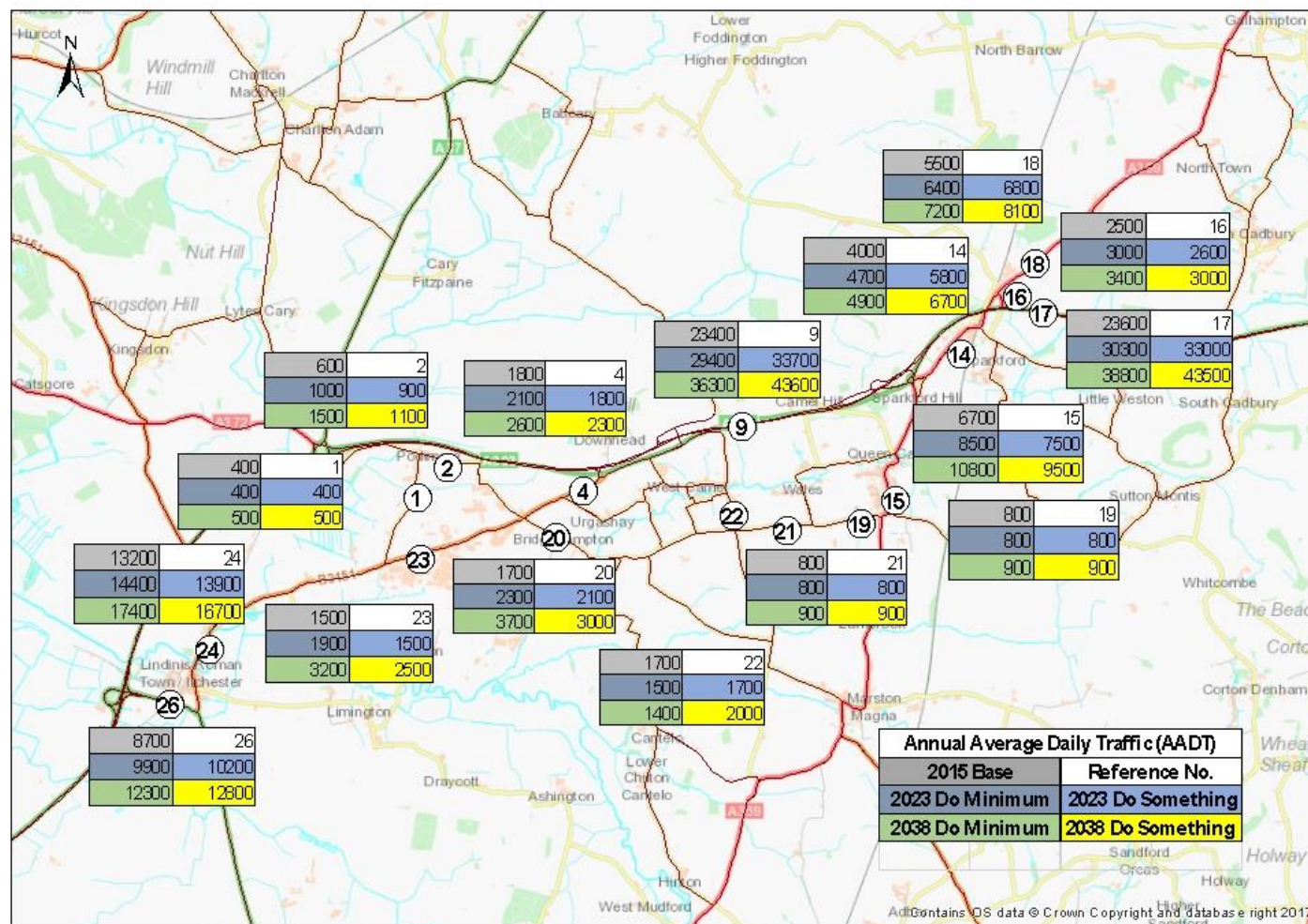
7 Traffic impacts

7.1 Traffic flow impacts

Local impacts

- 7.1.1 The forecast traffic flows on the A303 and surrounding area are shown in Figure 7.1 at annual average daily traffic (AADT) level to the nearest 100 vehicles for each forecast scenario.
- 7.1.2 The AADT flows on the main A303 carriageway (site 9) are forecast to increase from 23,400 in the base scenario (2015) to 29,400 in the opening year (2023) and 36,300 in 2038 in the Do Minimum scenario. This is approximately a 55% increase from 2015 to 2038, which is higher but of a similar order to the 36% growth on south-west trunk roads predicted in RTF15. The higher growth predicted in the vicinity of the scheme is due to the spatial allocation of development trips being focused in this area and the inclusion of A358 Taunton to Southfields Dualling and Stonehenge schemes in the Do Minimum.
- 7.1.3 For the scheme, the A303 traffic flows are expected to increase to 33,700 in 2023 and 43,600 in 2038, indicating 15% and 20% increases on the Do Minimum flows respectively.
- 7.1.4 The majority of the local road network experiences a decrease in traffic with the inclusion of the scheme compared to Do Minimum. The locations where this is not the case include some roads in West Camel (site 22, 43% increase from 1,400 vehicles per day in the Do Minimum to 2,000 in the Do Something in 2038) and Sparkford High Street (site 14, 37% increase from 4,900 vehicles per day in the Do Minimum to 6,700 in the Do Something in 2038).

Figure 7.1: Two-way AADT in local area (to nearest 100 vehicles)

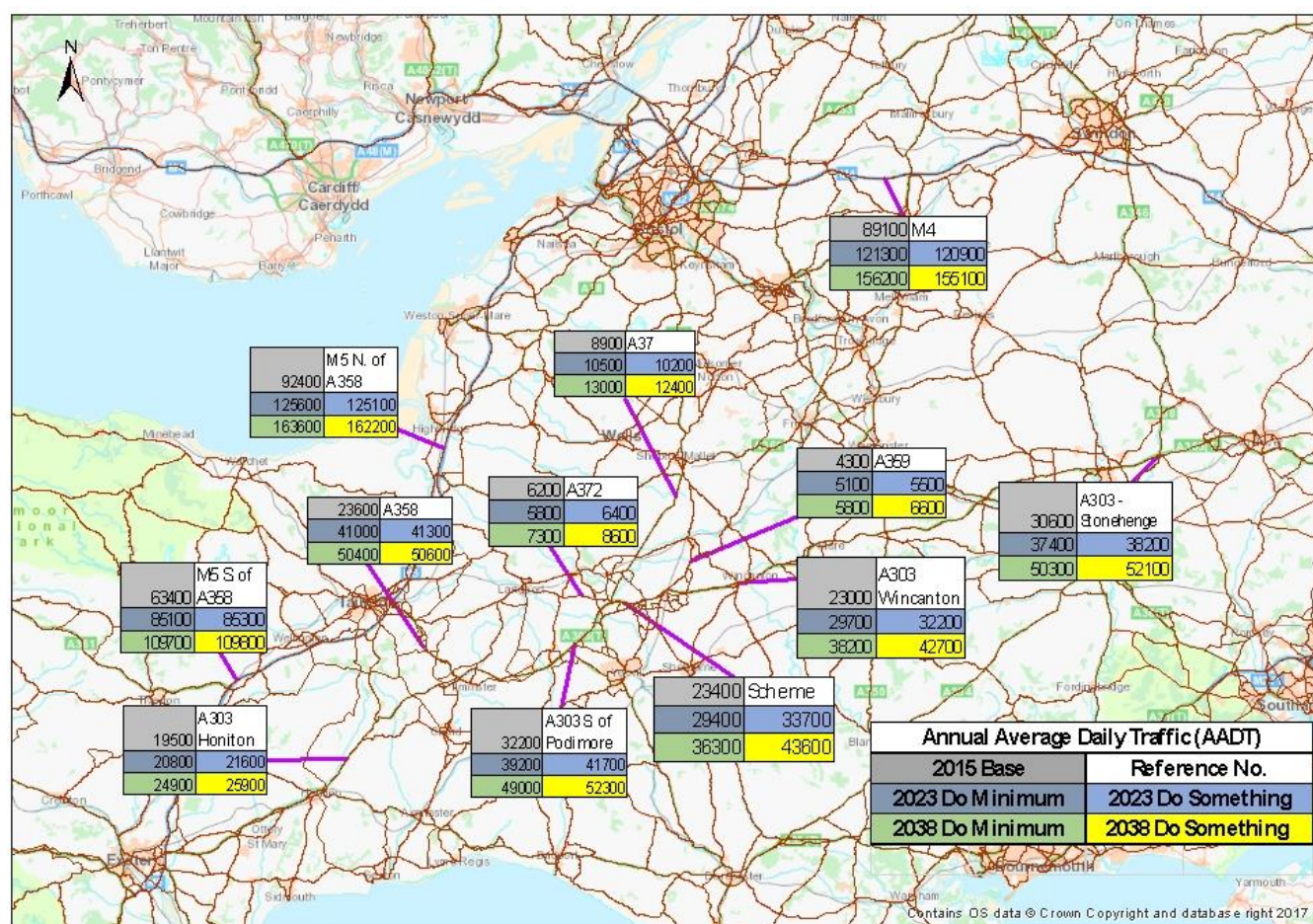


Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

Impacts on strategic movements

- 7.1.5 As well as local re-routing, the scheme causes some re-routing from the M4 / M5 and A31 / A35 routes to the A303. The AADT flows (to the nearest 100 vehicles) for selected sections of these key corridors, are displayed in Figure 7.2.
- 7.1.6 Figure 7.2 indicates that there is some re-routeing between the M4 / M5 corridor and the A303 corridor for traffic travelling between London and the south-west, as expected. Figure 7.2 shows (from the M4 flows) that the number of vehicles making this route switch on average per day is approximately 400 in 2023 and 1,000 in 2038. The re-routeing between the A31 / A35 corridor and the A303 corridor for traffic travelling between the south-east and the south-west is about 700 vehicles per day in both 2023 and 2038.
- 7.1.7 From Figure 7.2, it is also clear that a large portion of the additional traffic using the scheme is shorter-distance trips, as the difference in flows on the scheme itself is 7,300 in the design year whereas further east at Wincanton, the difference is only 4,500 and further west (combining the flows on the A372 and the A303 south of Podimore), the difference is 4,600. This local re-routeing is a combination of traffic from the nearby villages to the south of the A303 using the scheme rather than the local poorer quality roads and some traffic from north of the scheme choosing to use the scheme combined with the A359 rather than the A37, as is visible in Figure 7.2.
- 7.1.8 The results shown in this section suggest that the scheme makes the A303 corridor more attractive to traffic from zones near London and south-east travelling to zones in Devon and Cornwall and vice versa.

Figure 7.2: Two-way AADTs for wider impact area (to nearest 100 vehicles)



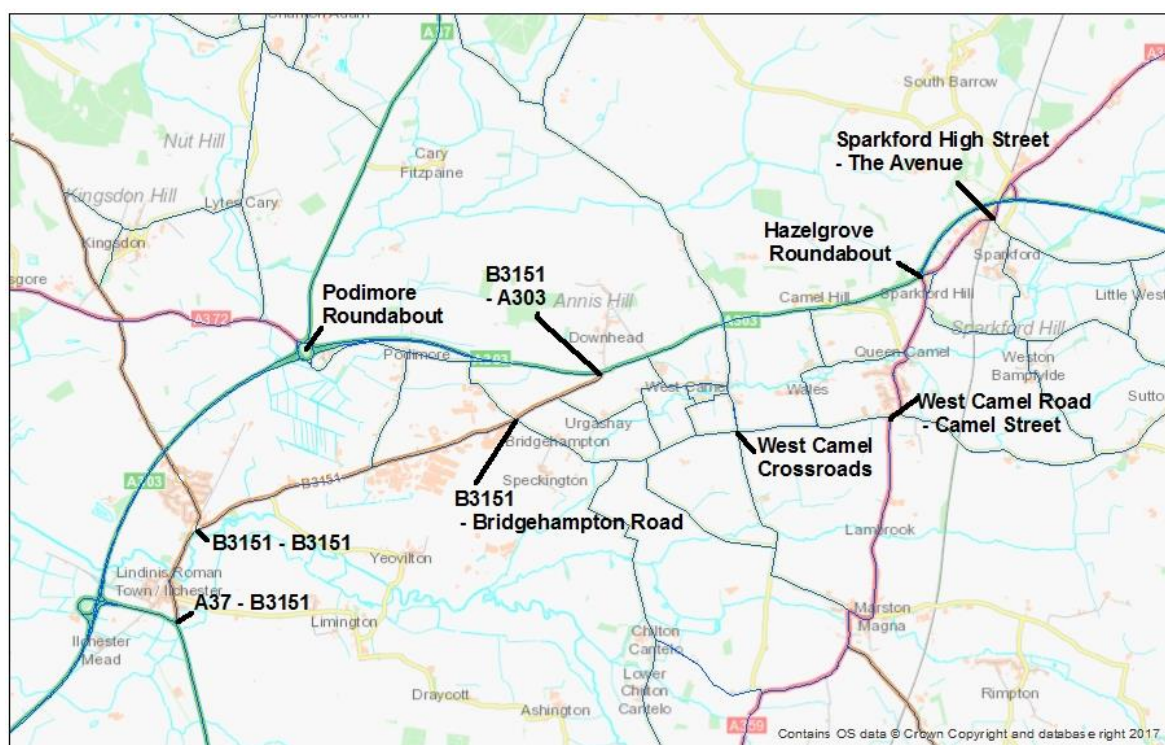
Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

7.1.9 More details on wider scheme impacts can be found in the **Combined Modelling and Appraisal Report (TR010036/APP/7.6)**.

7.2 Operational appraisal of scheme junctions

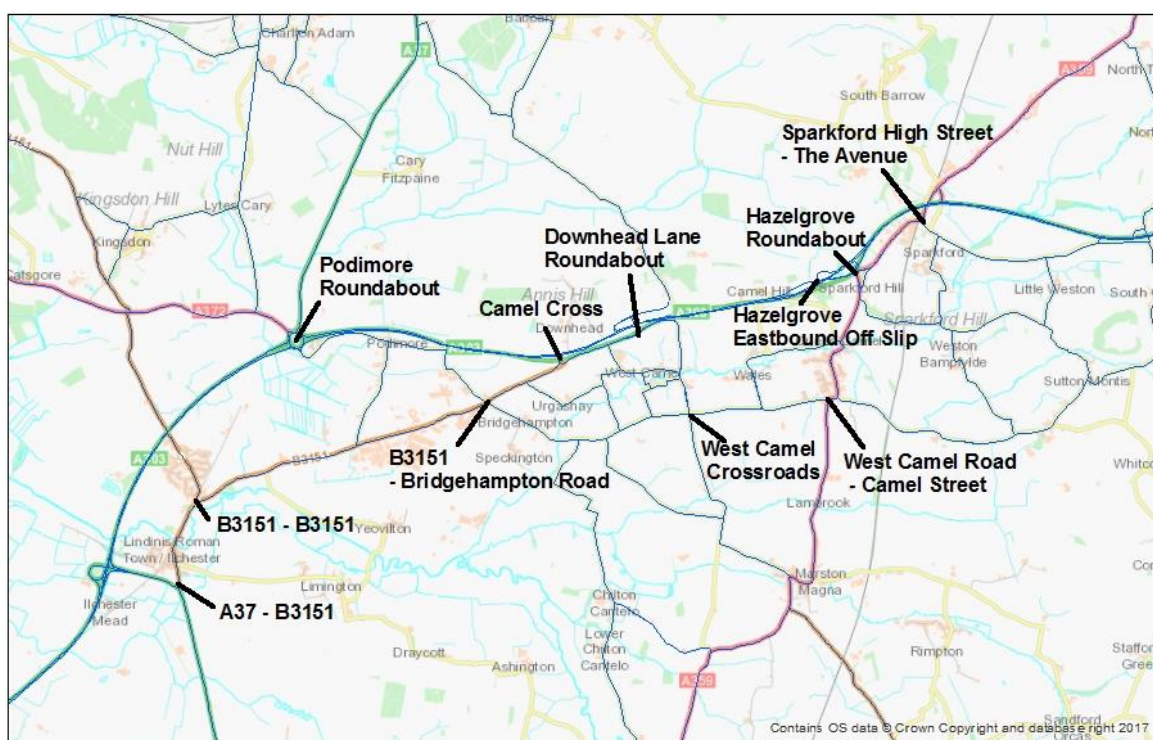
7.2.1 Operational assessments were carried out at some of the key junctions on and around the scheme. The scope of the operational assessment was discussed with Somerset County Council and the junctions assessed are displayed in Figure 7.3 and Figure 7.4. For the roundabouts and priority junctions, Junctions 9 software was used, which comprises of Assessment of Roundabout Capacity And Delay (ARCADY) and Priority junction Capacity and Delay (PICADY). For signal controlled junctions, Linear Signal Analysis (LINSIG) Version 3.2.38 was used.

Figure 7.3: Do Minimum operational assessment junctions



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

Figure 7.4: Do Something operational assessment junctions



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

- 7.2.2 The Ratio of Flow to Capacity (RFC) is an output from Junctions 9 and is the primary measure of an arm's performance for roundabouts and priority junctions. An RFC below 0.85 suggests a junction will operate within capacity; an RFC between 0.85 and 1.0 suggests the junction is over its desired capacity but below theoretical capacity; and an RFC in excess of 1.0 suggests a junction will be in excess of its theoretical capacity.
- 7.2.3 The Degree of Saturation (DoS) is the equivalent output from LinSig and is therefore the primary measure of an arm's performance for signal controlled junctions. A DoS of below 0.9 suggests a junction will operate within capacity; a DoS between 0.9 and 1.0 suggests the junction is over the desired capacity but within its theoretical capacity; and a DoS exceeding 1.0 suggests the junction will be in excess of its theoretical capacity. The only signal controlled junction included in the operational assessment is Podimore Roundabout.
- 7.2.4 The maximum RFC or DoS outputs for each assessed junction are given in Table 7.1 - Table 7.3. In some of the Do Minimum scenarios, particularly in 2038, the B3151 - A303 junction exceeds its capacity. None of the junctions exceed their theoretical capacity in the Do Something scenarios. There is a decrease in the RFC or DoS between the Do Minimum and Do Something scenarios in all cases except for Podimore, Sparkford High Street, The Avenue and the West Camel crossroads, for which the RFC or DoS increases in some time periods and years. This is because there would be no changes made to these junctions with the implementation of the scheme and the higher flows mean a higher degree of saturation. Despite these increases, the junctions still operate within the desired capacity with the exception of Podimore in the PM 2038 scenario.

Table 7.1: Maximum AM RFC or DoS

	AM - Max RFC or DoS			
	DM		DS	
	2023	2038	2023	2038
Hazlegrove Junction	0.64	0.81	0.36	0.42
Podimore Roundabout	0.55	0.7	0.63	0.79
B3151 - A303	0.52	1.53	N/A	N/A
Camel Cross	N/A	N/A	0.18	0.21
Downhead Lane Junction Roundabout	N/A	N/A	0.05	0.06
A37 - B3151	0.48	0.54	0.47	0.54
B3151 - B3151	0.4	0.48	0.37	0.43
B3151 Bridgehampton Road	0.19	0.28	0.15	0.21
Sparkford High Street - The Avenue	0.51	0.53	0.55	0.59
West Camel Crossroads	0.17	0.13	0.15	0.18
West Camel Road- Camel Street	0.47	0.57	0.46	0.55
Hazlegrove Eastbound sliproads	N/A	N/A	0.34	0.47

Table 7.2: Maximum IP RFC or DoS

	IP - Max RFC or DoS			
	DM		DS	
	2023	2038	2023	2038
Hazlegrove Junction	0.67	0.81	0.32	0.41
Podimore Roundabout	0.56	0.66	0.62	0.76
B3151 - A303	0.46	2.03	N/A	N/A
Camel Cross	N/A	N/A	0.1	0.14
Downhead Lane Junction Roundabout	N/A	N/A	0.04	0.05
A37 - B3151	0.37	0.45	0.36	0.44
B3151 - B3151	0.28	0.37	0.27	0.34
B3151 Bridgehampton Road	0.15	0.27	0.12	0.17
Sparkford High Street - The Avenue	0.45	0.48	0.48	0.6
West Camel Crossroads	0.11	0.08	0.1	0.16
West Camel Road - Camel Street	0.41	0.5	0.4	0.47
Hazlegrove Eastbound sliproads	N/A	N/A	0.35	0.53

Table 7.3: Maximum PM RFC or DoS

	PM - Max RFC or DoS			
	DM		DS	
	2023	2038	2023	2038
Hazlegrove Junction	0.64	0.79	0.38	0.48
Podimore Roundabout	0.64	0.75	0.65	0.87
B3151 - A303	0.71	5.34	N/A	N/A
Camel Cross	N/A	N/A	0.15	0.21
Downhead Lane Junction Roundabout	N/A	N/A	0.05	0.06
A37 - B3151	0.51	0.58	0.5	0.58
B3151 - B3151	0.47	0.56	0.42	0.58
B3151 Bridgehampton Road	0.32	0.45	0.23	0.37
Sparkford High Street - The Avenue	0.62	0.53	0.69	0.78
West Camel Crossroads	0.13	0.13	0.17	0.13
West Camel Road- Camel Street	0.57	0.71	0.54	0.68
Hazlegrove Eastbound sliproads	N/A	N/A	0.44	0.62

8 Wider scheme impacts

8.1 Highway journey times

8.1.1 The A303 from Sparkford to Ilchester forms part of journey time route from Ilminster to Mere. The modelled journey times for the route for the base, Do Minimum and Do Something scenarios, are displayed in Table 8.1.

Table 8.1: Modelled journey times at route level (mm:ss)

Direction	Scenario	2023				2038			
		AM	IP	PM	Summer	AM	IP	PM	Summer
A - A303 Ilminster to Mere	Base	40:25	40:20	40:24	45:52	40:25	40:20	40:24	45:52
	DM	41:47	42:25	41:47	48:11	44:53	45:12	43:51	54:26
	DS	39:33	40:12	39:38	42:57	42:06	42:44	41:22	50:29
B - A303 Mere to Ilminster	Base	40:18	40:40	41:18	44:58	40:18	40:40	41:18	44:58
	DM	41:16	42:17	42:50	45:55	43:16	45:19	46:52	49:41
	DS	39:47	40:55	41:04	42:38	41:15	43:06	44:19	45:41

8.1.2 There is an increase in journey times from the base to the Do Minimum scenario across both years and all time periods. This is due to an increased level of traffic in the future years. There is a decrease in journey times from the Do Minimum to Do Something across both years and all time periods. This indicates that the scheme is providing quicker journeys along the A303 corridor from Ilminster to Mere in both directions despite the fact that the scheme attracts higher flows which would be likely to have a negative impact on journey times along the other sections of the route, particularly the other single carriageway sections.

8.1.3 In the eastbound direction (direction A in Table 8.1), the average savings provided by the scheme across the three weekday time periods are 02:12 (mm:ss) in 2023 and 02:33 (mm:ss) in 2038. In the summer, the savings are 05:14 (mm:ss) in 2023 and 03:58 (mm:ss) in 2038.

8.1.4 In the westbound direction (direction B), the scheme saves an average of 01:30 (mm:ss) in 2023 and 02:15 (mm:ss) in 2038 across the three weekday time periods, while in the summer, the savings are 03:17 (mm:ss) in 2023 and 04:00 (mm:ss) in 2038.

8.1.5 To assess the journey time savings along the section of the A303 where the scheme would be implemented, analysis has also been carried out on the journey time segment between Podimore Roundabout and Wincanton of the route. These results are displayed in Table 8.2.

Table 8.2: Modelled journey times between Podimore Roundabout and Wincanton (mm:ss)

Direction	Scenario	2023				2038			
		AM	IP	PM	Summer	AM	IP	PM	Summer
A - A303 Podimore to Wincanton	Base	11:52	11:44	11:48	14:38	11:52	11:44	11:48	14:38
	DM	12:22	12:33	12:19	16:13	13:48	13:52	13:11	17:25
	DS	09:58	09:57	09:56	10:19	10:12	10:10	10:06	10:42
B - A303 Wincanton to Podimore	Base	12:15	12:16	12:40	14:22	12:15	12:16	12:40	14:22
	DM	12:38	12:52	13:21	15:07	13:27	14:15	15:25	17:12
	DS	11:00	11:06	11:13	11:34	11:08	11:26	12:05	12:33

8.1.6 The journey time savings at segment level are significantly higher than those at route level. This is to be expected as the increased traffic levels attracted by the scheme would cause higher delays along the other sections of the A303. Also, the savings are larger in the eastbound direction than the westbound direction, which could be partly due to increased delays at Podimore Roundabout having a larger impact for westbound traffic.

8.1.7 In the eastbound direction (direction A in Table 8.2), the average savings across the three weekday time periods for this segment of the journey time route are 02:29 (mm:ss) in 2023 and 03:31 (mm:ss) in 2038 for the scheme. In the summer, the savings are 05:54 (mm:ss) in 2023 and 06:43 (mm:ss) in 2038.

8.1.8 In the westbound direction (direction B), the scheme saves an average of 01:49 (mm:ss) in 2023 and 02:49 (mm:ss) in 2038 during weekdays and 03:33 (mm:ss) in summer 2023 and 04:39 (mm:ss) in summer 2038.

8.2 Economic impacts

8.2.1 Table 8.3 shows Analysis of Monetised Costs and Benefits (AMCB) which includes economic assessment results from the TUBA, COBALT, QUADRO, greenhouse gases, noise, air quality, wider economic and reliability analysis. As per WebTAG, all costs and benefits reported in this section are in 2010 prices discounted to 2010.

Table 8.3: Analysis of monetised costs and benefits (£000s)

Item	Monetary value (£000s)
Collisions (not assessed by TUBA)*	10,957
Roadworks (not assessed by TUBA)**	-24,324
Greenhouse Gases (assessed by TUBA)***	-27,927
Noise (not assessed by TUBA)****	-66
Air Quality (not assessed by TUBA)*****	-360
Economic Efficiency: Consumer Users (Commuting)	9,910
Economic Efficiency: Consumer Users (Other)	17,084
Economic Efficiency: Business Users and Providers	121,544
Wider Public Finances (Indirect Taxation Revenues)	49,613
Present Value of Benefits (PVB)	156,431
Broad Transport Budget Present Value of Costs (PVC)	108,079
OVERALL IMPACTS	
Net Present Value (NPV)	48,352
Initial Benefit to Cost Ratio (BCR)	1.45
Reliability Benefits	16,446
Wider Economic Benefits	12,154
Adjusted BCR	1.71

Notes: *from COBALT, ** from QUADRO,***WebTAG Unit A3 Chapter 2,**** WebTAG Unit A3 Chapter 3,***** WebTAG Unit A3 Chapter 4, All monetary values are expressed in 2010 prices discounted to 2010

8.2.2 The results indicate that scheme is capable of providing an initial Benefits to Costs Ratio (BCR) of 1.45. The adjusted BCR, which includes wider economic and reliability benefits, is 1.71. Under the DfT's value for money criteria, the adjusted BCR represents medium value for money as it is between 1.5 and 2. However, in the overall value for money assessment of the scheme, other qualitative factors which cannot be monetised are taken into account, such as those reported in the Appraisal Summary Table, which is appended to the **Combined Modelling and Appraisal Report (TR010036/APP/7.6)**. Therefore, the BCR alone does not provide a good measure of value for money and is not used as the sole basis for decisions. It is important to note that the benefits reported by TUBA are conservative estimates since average hour models are used instead of peak hour models.

9 Road safety

9.1 Overview of personal injury collisions

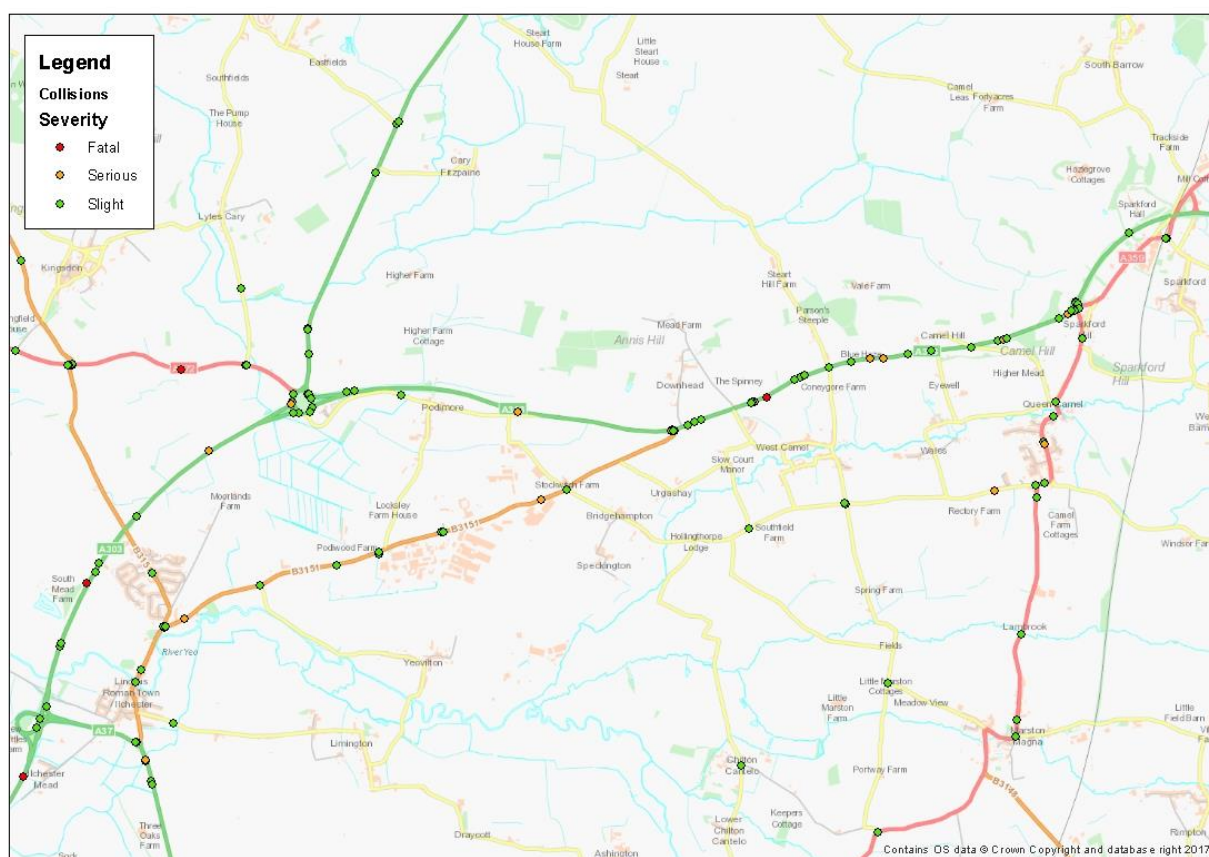
9.1.1 Within the area local to the scheme as shown in Figure 9.1 and during the 5-year period between 01/01/2010 and 31/12/2014, a total of 139 collisions have been recorded. Of these, 5 Personal Injury Collisions (PICs) (3.6%) have been classified as Fatal, 21 (15.1 %) as Serious and 113 (81.3%) as Slight. Table 9.1 below summarises the PIC data analysed within the detailed study area.

Table 9.1: Summary overview of the PIC data within the detailed study area

Measure		Number of PICs
Collision frequency		
	Fatal	5
	Serious	21
	Slight	113
	Total	139
Collisions by type		
	1 Vehicle involved	29
	2 or more Vehicles involved	110
	Not at a Junction	72
	At or within 20m of a junction	43
	At a Roundabout	24

9.1.2 Figure 9.1 shows the location of the collisions in the detailed study area. These show 3 distinct collision cluster locations. These include Podimore and Hazlegrove Roundabouts, and at A303 / B3151 junction. Current at grade Hazlegrove and A303 / B3151 junctions will be superseded by grade separated junctions. The scheme will result in significant safety improvements (see section 9.2 for more details). The at grade Podimore Roundabout is not part of the scheme but there is the potential for this to be upgraded in a future road investment period to achieve the desired high quality dual carriageway route between the M3 and M5 motorways.

Figure 9.1: Collision locations in the vicinity of the scheme

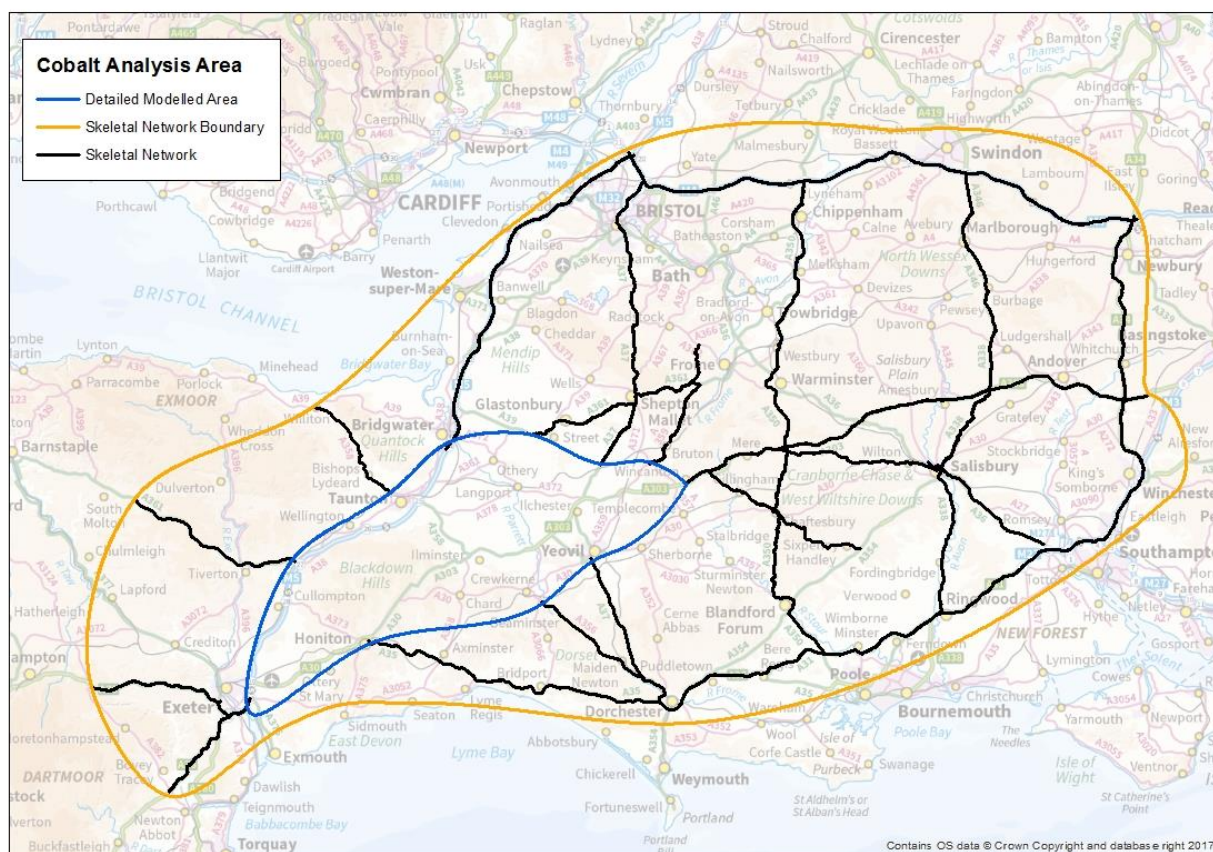


Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

9.2 Results from COBALT analysis

9.2.1 A COBALT (COst and Benefit to Accidents – Light Touch) model has been set up to assess the impact of the scheme on collisions. The model relies on the observed collision data for the 5-year period between 01 January 2010 and 31 December 2014 in the immediate area of impact and default collision rates elsewhere. It also relies on forecast traffic flows. The coverage of the COBALT model is highlighted in Figure 9.2.

Figure 9.2: COBALT assessment area

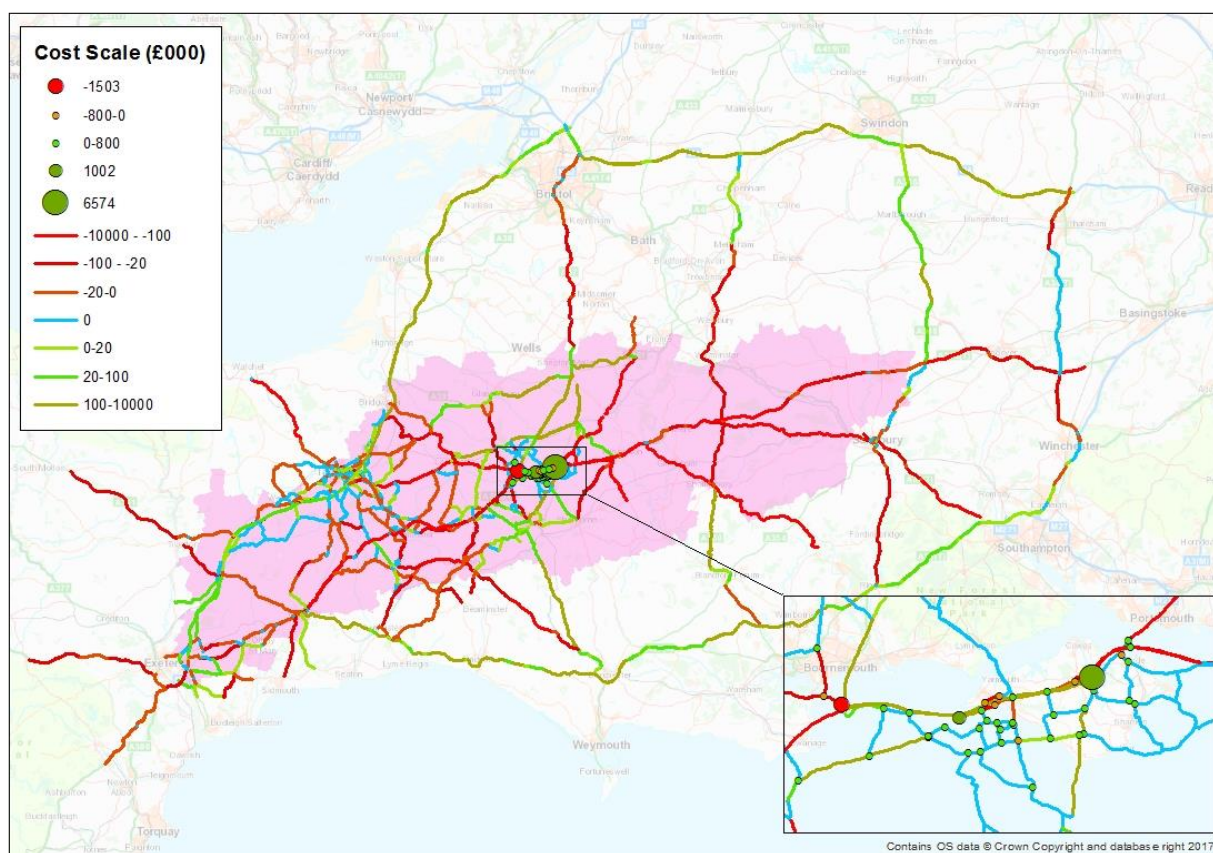


Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

- 9.2.2 Figure 9.3 shows the COBALT collision benefits for links and junctions. The links are colour coded in terms of magnitude of benefit and dis-benefit as listed in the key. With regards to junctions, the size of the circles representing each junction is related to the colour and magnitude of the junction benefit (green circles) and dis-benefit (red circles) as listed in the key.
- 9.2.3 The benefits were generated by traffic flows shifting from poorer quality links and junctions, to higher quality and therefore safer, links and junctions, which occurs in the fully assessed area, predominantly around the scheme.
- 9.2.4 The skeletal network links can contribute benefits or dis-benefits depending on whether traffic flows decrease or increase with the scheme. For example, a dis-benefit can be seen on the A303 / A30 corridor where traffic has re-routed from the M4 / M5. The overall dis-benefits and benefits caused by such re-routings would not necessarily cancel each other out, as there could be higher benefits or dis-benefits depending on the differences in the corresponding default collision rates.
- 9.2.5 Figure 9.3 shows disbenefits in the A303 corridor to the east and west of the scheme as a result of attracting more traffic to the corridor but large benefits

locally due to the scheme and benefits on strategic alternative routes to the A303. The net result is a significant saving in collisions over the appraisal period.

Figure 9.3: Impact of scheme on collisions



Source: MMSJV. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

9.2.6 Table 9.2 summarises the results of the COBALT casualty assessment for a 60-year appraisal period. This shows that the scheme reduces the numbers of casualties.

Table 9.2: Casualty assessment results

Casualties		60-Year Appraisal Period
Total casualties without Scheme	Fatal	1,539
	Serious	15,638
	Slight	165,616
Total casualties with Scheme	Fatal	1,535
	Serious	15,612
	Slight	165,387
Personal Injury Casualty savings	Fatal	5
	Serious	26
	Slight	230

10 Construction impacts and mitigation

10.1 Summary of construction traffic management plan

10.1.1 The Traffic Management Plan for the construction of the scheme is contained in the appendix to this report. It sets out the proposed measures required to allow the construction to proceed safely whilst mitigating as far as possible the impacts on existing traffic on the trunk road and local roads. Some of the key elements include the following:

- Access to the site for works traffic will be from the A303 or A37, no works traffic will be permitted to use the A359, B3151 or other local roads.
- A single lane in each direction for A303 traffic will be maintained through the works for the majority of the construction period, with exception of carriageway closures for tie in works and installation of some of the traffic management.
- The speed limit through the works will be 40mph with a suggested speed compliance system implementation using average speed cameras.
- Diversion route plans have been developed for when closures are needed.
- Traffic management activities will be planned to cause minimum disruption during peak holiday traffic periods and during the annual Air Day at RNAS Yeovilton.
- The plan includes recommendations for monitoring traffic and provision of vehicle recovery facilities.
- A communications plan will be implemented to inform and liaise with road users, the local highway authority, Somerset County Council and other stakeholders.

10.2 Construction traffic assessment

10.2.1 The impact of the works on traffic has been assessed (using the QUADRO software) which accounts for the reduced speed through the roadworks and the impacts of collisions and incidents. In economic terms, this produces a negative impact of £24m (2010 prices, discounted to 2010).

Appendix A: Traffic Management Plan



Traffic Management Plan A303 Sparkford to Ilchester

Date: February 2018

Document Reference:

DOCUMENT CONTROL

Document Title	Traffic Management Plan
Author	Bob Feurtado (bmJV)
Owner	MP Customer Services Division
Document Version	V2

Revision History

Version	Date	Description	Author
V1	March18	Draft	Bob Feurtado
V2	March18	For Highways England Review	Bob Feurtado

Reviewer List

Name	Role

Approvals

Name	Signature	Title	Date of Issue	Version
A. Finch		bmJV Project Manager	March 18	V2
E. Hayes		Highways England Assistant Project Manager	March 18	

TABLE OF CONTENTS

Document control	2
Table of contents	3
Project contact details	5
1 Introduction	6
1.1 Purpose and objectives	6
1.2 Details of scheme	6
1.2.1 Summary description of the scheme	6
1.2.2 Challenges and considerations	7
2 Traffic Management Plan	7
2.1 Customer requirements	7
2.2 Nature of the works	9
2.3 Proposed traffic management measures	10
2.3.1 Restrictions	10
2.3.2 Operating lanes	10
2.3.3 Speed limits	10
2.3.4 Length of traffic management	11
2.3.5 Carriageway closures	11
2.3.6 Hardshoulder closures	11
2.3.7 Adjacent roadworks and other traffic management	12
2.3.8 Public and Bank holidays	12
2.3.9 Significant events and seasonal traffic	12
2.3.10 Incident management	12
2.3.11 Incursion Risk Management	13
2.3.12 Driver compliance	13
2.3.13 Communications plan	13
2.3.14 Diversion route selection	14
2.3.15 Safety measures	14
2.3.16 Human factors	14

2.4	Proposals for management of Network Occupancy	14
2.5	Implications of Traffic Management measures	14
2.5.1	Intelligent transport services	14
2.5.2	Operations	15
2.5.3	Maintenance activities	15
2.5.4	Other service providers	15
2.6	TM Plan management	15
3	Appendices	15
3.1	Schematic drawings for temporary diversion routes	15

PROJECT CONTACT DETAILS

Name	Role	Organisation	Contact Details
Aiden Finch	Project Manager	bmJV	07825 064599
Bob Feurtado	Senior Traffic Manager	bmJV	07771 834176

1 INTRODUCTION

1.1 PURPOSE AND OBJECTIVES

The purpose of this Traffic Management Plan is describe the type and extent of traffic management layouts and arrangements required for the construction of the permanent works whilst providing a safe environment for those travelling through the works, as well as those engaged in the construction of the works. The plan will detail proposed access routes for construction traffic and site compound locations.

The plan will provide details of the phasing of the works and how this will affect deliveries to the site. In addition the plan will identify the Temporary Traffic Regulation Orders necessary for the construction of the works.

1.2 DETAILS OF SCHEME

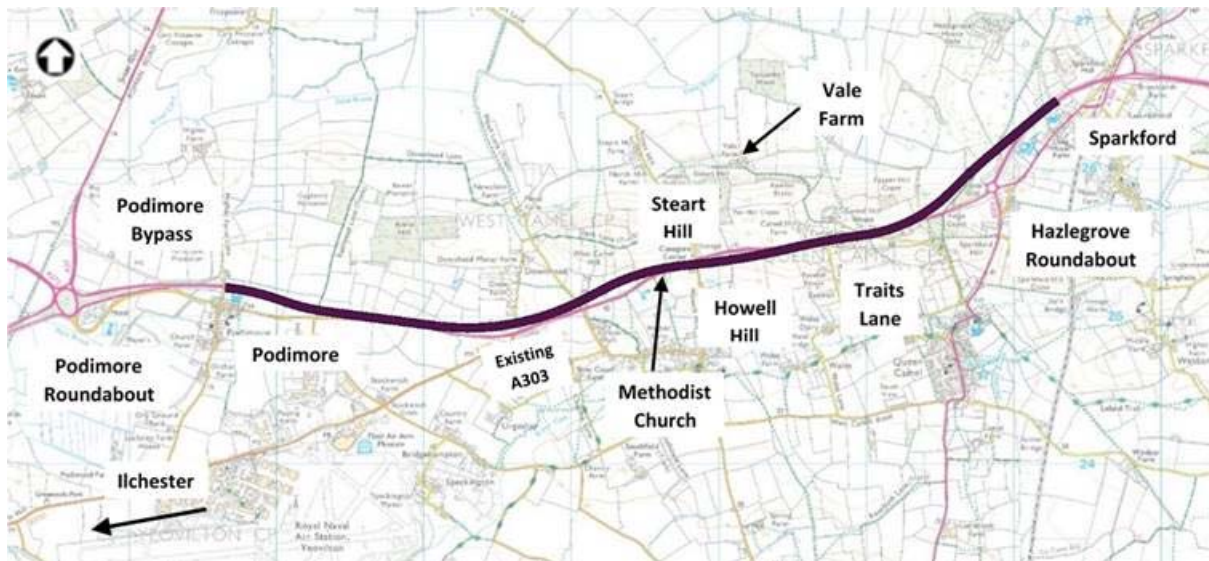
1.2.1 Summary description of the scheme

Description (mainline)

At its western limits the option ties in with the existing A303 Podimore Bypass (a dual carriageway). Travelling eastwards, the route moves north of the existing A303 as it becomes a single carriageway, allowing it to be retained for use as a parallel local road. The road then rises up West Camel Hill before crossing over the existing A303 at the junction with Steart Hill / Howell Hill. This passes very close to the Noise Important Area at the West Camel Methodist Church. The route then takes a southerly alignment briefly before meeting up with the existing road again to pass between the Scheduled Ancient Monument at Vale Farm and the MOD signal station at Eyewell / Traits Lane. Finally, the route then bypasses the existing Hazlegrove Roundabout to the north through the registered park and garden associated with Hazlegrove House before tying into the existing A303 north of Sparkford Village.

Junctions

A new all movements grade separated junction will be provided at Hazlegrove. This will provide connections to Hazlegrove House, the A359, access to villages south of the route and access to properties at Camel Hill and Vale Farm to the north of the route. A limited-movements junction comprising eastbound slips only will be provided at Downhead. A limited movement junction will be provided at Camel Cross comprising westbound exit and entry slip roads and connection to the B3151.



1.2.2 Challenges and considerations

The difference in level between the existing and proposed carriageways at Camel Hill does present a challenge for the traffic management insofar as at some point during the construction the east and west bound carriageways could be on temporary alignments and at different levels.

Local residents have a concern that the works will increase 'rat running' through their communities. At weekends and during School holiday periods there is a significant increase in traffic using this route and traffic can queue or travel at low speeds. Particular attention to this will be required as the local residents will apportion any perceived increase in 'rat running' to the project.

2 TRAFFIC MANAGEMENT PLAN

2.1 CUSTOMER REQUIREMENTS

This section is to be developed further but some basic elements have been included in the table below.

Customer group	Who is affected by this scheme?	What are their requirements?	How has the TM Plan taken these requirements into account?
Customer	HGV drivers	<ul style="list-style-type: none"> • Journey time reliability • Advance warning of closures and/or diversions • Appropriate diversion routes • Maximised lane widths where possible 	<ul style="list-style-type: none"> • Sufficient notification of closures • Closure clashes – not having closures on alternative routes that are not subject to diversions • Diversion routes avoid narrow roads and low bridges
	Seasonal holiday traffic	<ul style="list-style-type: none"> • Clear information of delays displayed at remote locations so traffic can decide on alternative route • Clear and accurate information on the works 	<ul style="list-style-type: none"> • Provision of Journey Time reliability system • Communications Plan
Stakeholder	RNAS Yeovilton (large local employer)	<ul style="list-style-type: none"> • Traffic management that may impact on journey time reliability to and from Airfield 	<ul style="list-style-type: none"> • Advance warning and regular liaison. • Avoid bulk deliveries during commuting times
	RNAS Yeovilton Annual Air Show (up to 40,000 visitors)	<ul style="list-style-type: none"> • Closures/diversion that may impact on journey time reliability to and from the Show • Clear routes for visitors to get to the Show with good signing 	<ul style="list-style-type: none"> • Commitment to stakeholder liaison and use of mobile VMS to assist in traffic movements
Partner	Local farm traffic	<ul style="list-style-type: none"> • Clear route for ease of delivery • Ability to cross A303 • Suitable access and egress 	<ul style="list-style-type: none"> • Manage haul roads to facilitate site deliveries • Access and egress points clearly marked and close to delivery site
	Emergency services	<ul style="list-style-type: none"> • Access through haul road during emergencies • Suitable diversion routes • Advance warning of closures and/or diversions 	<ul style="list-style-type: none"> • Process and procedure for allowing blue-light travel through the works/haul road • Diversion routes avoid narrow roads and low bridges • Sufficient notification of closures
Community	Local residents to scheme	<ul style="list-style-type: none"> • Advance warning of closures and/or diversions • Sensitivity to local requirements e.g. market days • Minimal disruption due to works, including environmental factors (e.g. noise, dust, lighting) and diversion routes 	<ul style="list-style-type: none"> • Notification and liaison with individuals and/or local group representatives • Activity curfews e.g. no piling between 22:00 – 06:00 • Diversion route signs and information to meet driver requirements and optimise usability to reduce opportunities for error and therefore reduce congestion

2.2 NATURE OF THE WORKS

Works involved in the scheme include earthworks, drainage, environmental mitigation, pavement construction, structures and landscaping. Statutory undertakers and license holder's diversionary works are also required for electricity, water, telephone and communication cables. Earthworks operations will be carried out using off road plant and equipment on haul roads. A temporary bailey bridge is to be installed across the existing A303 to allow haulage without interfering with the A303. Some of the minor side roads will have heavy plant crossings with traffic signal control.

The proposed location for the main site compound is the south of the existing A303 and west of the B3151 junction. There will also be topsoil and material storage at this location. Access for works vehicles will be from the A303. Works traffic will not be permitted to use the B3151 to access the site from the south.

Another compound is proposed in the area to the north of the proposed A303 and the west of Steart Hill. This compound is for the construction of the new Steart Hill overbridge. There will be material storage at this location which will be accessed from the A303. No works traffic will be permitted to travel north on Steart Hill from the compound.

A third compound is proposed to the south of the A303 and to the west of Traits Lane. Access will be immediately south of the A303. Works traffic will not be permitted to travel south on Traits Lane from the compound access. This compound will accommodate the CBGM Batching Plant and testing laboratory and welfare facilities. There will also be topsoil and materials storage at this location.

A satellite compound is proposed to the immediate west of Sparkford Roundabout which will require a new access to be constructed off the roundabout.

The current programme is based on contract award on 7th January 2019. This is followed by an advance works order on 31st October 2019 with the Secretary of State's sign off on 19th November 2019. The Notice to Proceed will be 23rd March 2020 followed by the new route being open to traffic on 29th July 2022. Overall scheme completion (including de-trunking works will be on 9th December 2022).

Details of specific dates for side road and A303 carriageway closures and traffic management switches will be developed during the DCO stage. The requirement to close side roads and the A303 will be subject to consultation with Somerset County Council prior to and during the DCO and the emergency services.

Works are programmed to be carried out five days a week. Night and weekend works will be required for certain activities.

2.3 PROPOSED TRAFFIC MANAGEMENT MEASURES

2.3.1 Restrictions

Single lane traffic in each direction can be maintained for the majority of the construction period, with the exception of carriageway closures for tie-in works and installation of some of the traffic management. Each phase will require a number of traffic management set ups and it is envisaged that all traffic management schemes installed on the project will be 'Standard' as defined in clause D1.6.2 of Part 1 of the Traffic Signs Manual. Should any departures be required these will be discussed with Highways England, Avon & Somerset Police and Somerset County Council (as adjacent highway authority).

Workspace requirements for each phase and associated section of the work will be in accordance with those defined in Part 1 of Chapter 8 of the Traffic Signs Manual, allowing for both working space and longitudinal and lateral safety zones. The need for temporary vehicle restraint system will be in accordance with TD19, IAN142/11 and Raising the Bar document 4.

All works traffic will be directed to use the A303 and A37 to approach the site. The A359 from Yeovil to Sparkford is not suitable for HGV traffic, as it has a 7.5T weight limit and in Sparkford there are a number of priority traffic calming measures. Traffic approaching the site from the south can use the A37 from Yeovil to Ilchester and hence join the A303.

2.3.2 Operating Lanes

Generally one lane in each direction will be maintained at all times. Lane widths will be reduced to 3.5m and 3.25m when contraflow is used.

2.3.3 Speed Limits

The existing speed limit on the single carriageway section of the A303 within the works area is 50mph. The approach and departure dual carriageway sections at Sparkford and Ilchester are national speed limit (70mph).

The proposed speed limit through the works taking into account 1+1 contraflow, temporary alignments and carriageways is 40mph. The eastbound approach to the works could be reduced to 40mph on the departure from Podimore Roundabout. This will prevent traffic from accelerating away from the roundabout to then be confronted with a temporary lower speed limit after a few hundred metres.

On the westbound approach to the works the A303 carriageway should be reduced to 50mph for around 1100m prior to the 40mph speed limit through the contraflow and into the works site.

It is recommended that Average Speed Cameras are deployed to enforce these speed limits. Temporary Traffic Regulation Orders (TTROs) will be required for these restrictions which for the case of the A303 will be Highways England.

Some of the side roads will also benefit from temporary speed limits. Steart Hill, Howell Hill and Plowage Lane are already subject to 30mph limits. Traits Lane, Vale Lane, Downhead Lane and the B3151 should be subject to speed reductions of at least 20mph to 40mph. These details will require finalising at the DCO stage. TTROs for the side roads will be processed by Somerset County Council.

2.3.4 Length of traffic management

The overall length of the A303 subject to traffic management (including the approach and departure lengths) is 7.5km.

2.3.5 Carriageway closures

It will be necessary to close the A303 between Podimore Roundabout and Sparkford Roundabout and between Sparkford Roundabout and the A371 Wincanton Interchange for various items of permanent and temporary works. These include installation of traffic management e.g. contraflows and temporary road markings, installation and removal of the temporary earthworks Bailey bridge, surfacing and construction of tie-ins to existing carriageways.

The diversion route for the closure of the A303 between Sparkford and Podimore is via the A359 from Sparkford Roundabout to Yeovil and the A37 to the A303 at Ilchester. This is Highways England Asset Support Contractor's diversion route and uses the A359 through Queen Camel where there are a number of narrow sections of carriageway with priority to oncoming traffic. When A303 traffic is diverted it would assist traffic flow if these sections were subject to traffic control (either two way temporary traffic signals or STOP/GO). A TTRO will also be required to suspend the current 7.5T weight limit (except for access) between Sparkford and Two Elms Road south of Marston Magna. This suspension will only apply when the A359 is used as a diversion route for the A303.

Side road closures will be required as the works progress and some may be closed permanently early on in the programme e.g. Gason Lane and the Podimore WB exit slip road. Other side roads will be closed in sequence such that access to the adjacent villages and businesses is maintained at all times. It will not be permitted to close all of the side roads simultaneously.

It is recommended that formal Road Safety Audits are carried out on the diversion routes.

2.3.6 Hardshoulder Running

Not applicable

2.3.7 Adjacent Roadworks and other traffic management

Other major schemes being carried out potentially at the same time as the A303 Sparkford to Ilchester are the A358 Taunton to Southfields and the A303 Stonehenge to Berwick Down Improvement.

Monthly traffic co-ordination meetings will be held on site with all relevant stakeholders and it is recommended that the Project Team are represented at Somerset County Council's quarterly NRSWA co-ordination meetings.

2.3.8 Public and Bank Holidays

Traffic management schemes will remain in place and maintained during Public and Bank Holidays with the exception of full road closures which will not be permitted at such times.

2.3.9 Significant events and seasonal traffic

The annual Air Day in July at RNAS Yeovilton attracts up to 40,000 visitors and this will need to be taken into account when planning the works. The A303 is a main route to the south west and as such carries significant holiday traffic at certain times of the year. Traffic management activities will have to be planned to avoid or cause minimum disruption to holiday traffic. There is currently a perception of 'rat running' by traffic through adjacent villages and any increase either real or perceived will reflect poorly on the Project Team and the management of traffic.

2.3.10 Incident management

A number of measures can be put in place to assist with incident management. Continuous attendance on site of a Traffic Safety and Control Officer and traffic management maintenance crew who will patrol the works. It is recommended that a Closed Circuit Television (CCTV) system is installed and monitored continuously.

It is also recommended that a vehicle recovery service is deployed. This could be in the form of site based vehicles operating from a static compound(s); or in the form of a call out service managed from a remote control room such as Highways England have used on other schemes.

Consideration should be given to motorcycle patrols particularly at times of high seasonal traffic as these will be able to get to incidents faster than a normal vehicle.

2.3.11 Incursion Risk Management

Vehicle incursions in to work areas are recognised as one of the highest risks to road workers safety. 250 incursions per month are regularly reported between operations and major projects on the strategic road network, the true figure could be much higher as there is a perception that incursions are normal and accepted as part of the job. An incursion is defined as ‘an intentional or unintentional unauthorised entry into temporary traffic management, by all or part of a vehicle being driven by members of the public or emergency services’.

The guidance and recommendations from the Highways Safety Hub will be adopted and current best practice will be used.

2.3.12 Driver compliance

It is recommended that Average Speed Cameras are deployed to enforce the temporary speed limit on the A303. This will be particularly useful on the approaches to the works at the lead-in tapers, where compliance with the temporary limit will greatly improve the flow of traffic.

Journey Time Reliability signing can significantly improve driver compliance as it give reassurance that delays are not as severe as may be perceived. Mobile Variable Message Signs (VMS) can give actual durations to pass through the roadworks and times to remote destinations. This would be of particular use to westbound holiday traffic when information about the duration to M5 at J25 (Taunton) or M5 J29 (Exeter) could be given.

2.3.13 Communications Plan

A communications plan will be developed by the contractor which will describe the process by which information is provided to stakeholders and interested parties. The document will identify all those who need to be informed about the works and level of engagement with them. Information about the works may be provided in various ways: - in the form of a site specific Highways England webpage (with links from other websites e.g. Somerset County Council), social media, letter drops, public exhibitions and TV /radio presentations. The communication plan will detail response times for queries from the public. It will also show the process for issuing press statements and publicity around major events (i.e. road closures or significant temporary alignment changes).

Roadside signage will used to provide advance notice of intended works. This may be in the form of static signs or mobile variable message signs.

Engagement with the local and wider community, including businesses, where it is possible to listen the their views/concerns and formulate solutions on an ongoing basis will for an integral part of traffic management.

2.3.14 Diversion Route selection

The proposed diversion routes for the A303 are those currently used by the Area 2 Asset Support Contractor. These routes were agreed by Highways Agency, Area 2 ASC and Somerset County Council. It is recommended that prior to use by the project a formal Road Safety Audit is carried out or if this is not possible then an independent review of the routes to take account of the additional traffic which will be diverted along them.

A number of local diversion routes have been proposed for the side roads joining/leaving the A303 adjacent to the works and these need confirming with Somerset County Council.

2.3.15 Safety Measures

Measures in place to ensure the safety of customer groups, including road users and the work force are detailed throughout this document.

2.3.16 Human Factors

This section will need to be update upon finalisation of the TM Plan and draw upon the pilot studies carried out by Highways England as part of Task 73 (Human Factors Integration). These studies have been designed to help identify the type of efficiencies and value that can be delivered on live schemes from performing human factors activities. The studies looked at incident data review, incident trending, incident hotspot identification and incident reduction options.

2.4 PROPOSALS FOR MANAGEMENT OF NETWORK OCCUPANCY

The proposed works will have significant impact on the operation of the A303 between Sparkford and Ilchester. Roadspace will require booking and significant traffic management events such as carriageway closures will need advance planning. The roadspace requirements for the A303 project will have to be agreed with the Asset Support Contractor's roadspace team and a strong working relationship will be required by the two parties. Formal and informal day to day communications will be required. There will be monthly traffic management co-ordination meetings at which all relevant stakeholders will be invited. The project should also be represented at Somerset County Council's quarterly NRSWA co-ordination meetings.

Somerset County Council's streetworks team will also have to be included as the A303 works will affect their network and agreement from Somerset will be required for use of diversion routes when the A303 is closed.

2.5 IMPLICATIONS OF TRAFFIC MANAGEMENT MEASURES

2.5.1 Intelligent transport services

There are existing traffic counter sites east of Hazlegrove Roundabout and east of Steart Hill. A single Gatso wet film speed camera is also located to the east of Steart Hill. There are emergency telephones located in lay bys both on the eastbound carriageway, one 500m east of Podimore Roundabout and one 500m east of Sparkford Roundabout.

2.5.2 Operations

A Detail Local Operating Agreement (DLOA) will be produced and agreed with all relevant parties to define precisely which party is responsible for an activity and for response times. The DLOA will describe how each party co-ordinates their works to ensure there is minimal effect on each other's operations.

2.5.3 Maintenance activities

The contractor shall be responsible for routine and winter maintenance as defined in the Area 2 Asset Support Contractor's Performance Specification for Routine and Winter Maintenance, including accidental and wilful damage, but excluding salting and snow clearance for all areas of the A303 with the limits of the site. This will include areas where traffic management equipment is in place only (on the approach to and departure from site). This requirement may also extend to adjacent Somerset County Council roads as required by the DCO.

2.5.4 Other service providers

It is not believed that there are any other service providers present on this section of the A303.

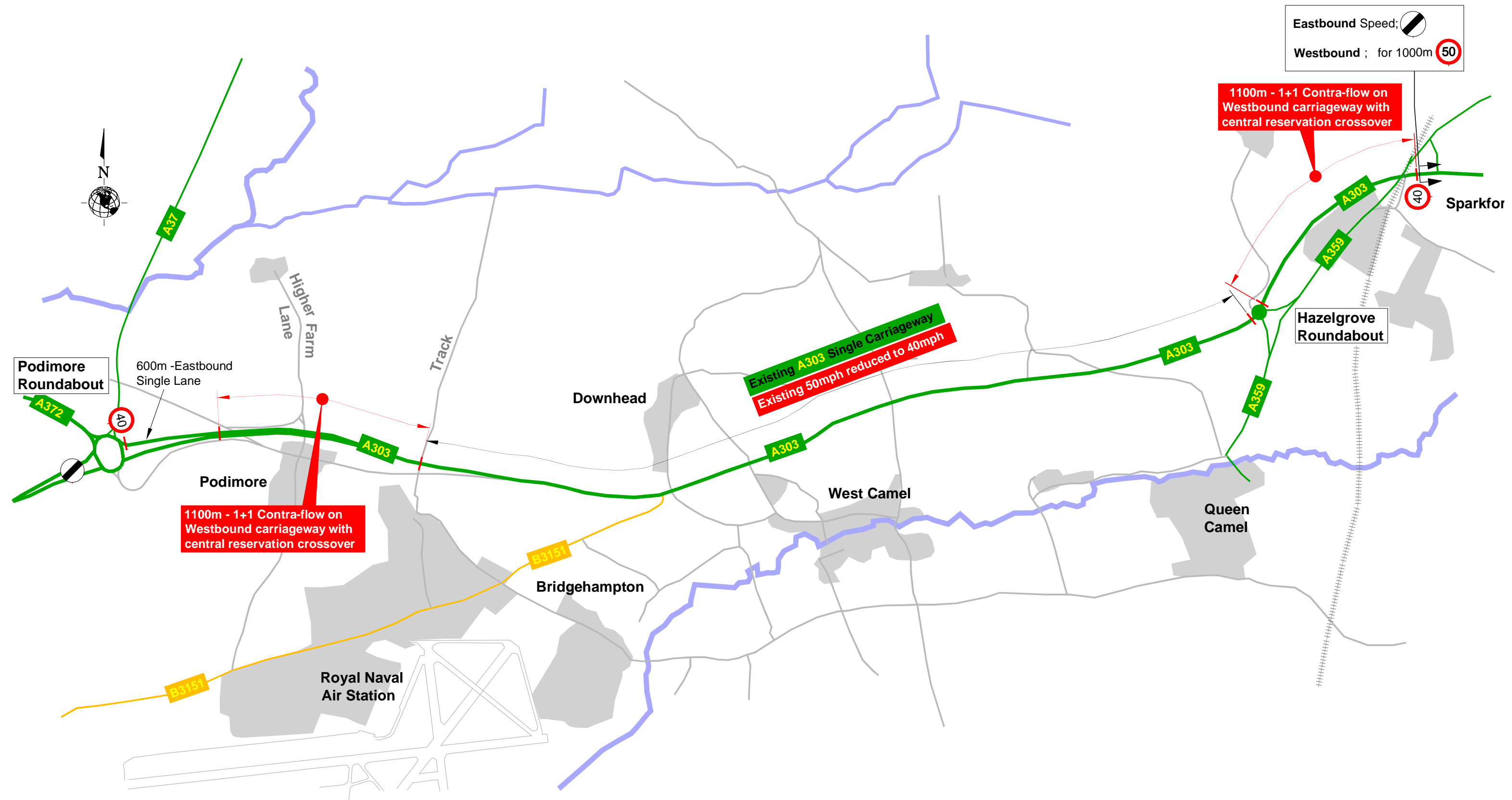
2.6 TM PLAN MANAGEMENT

To be provided after DCO phase.

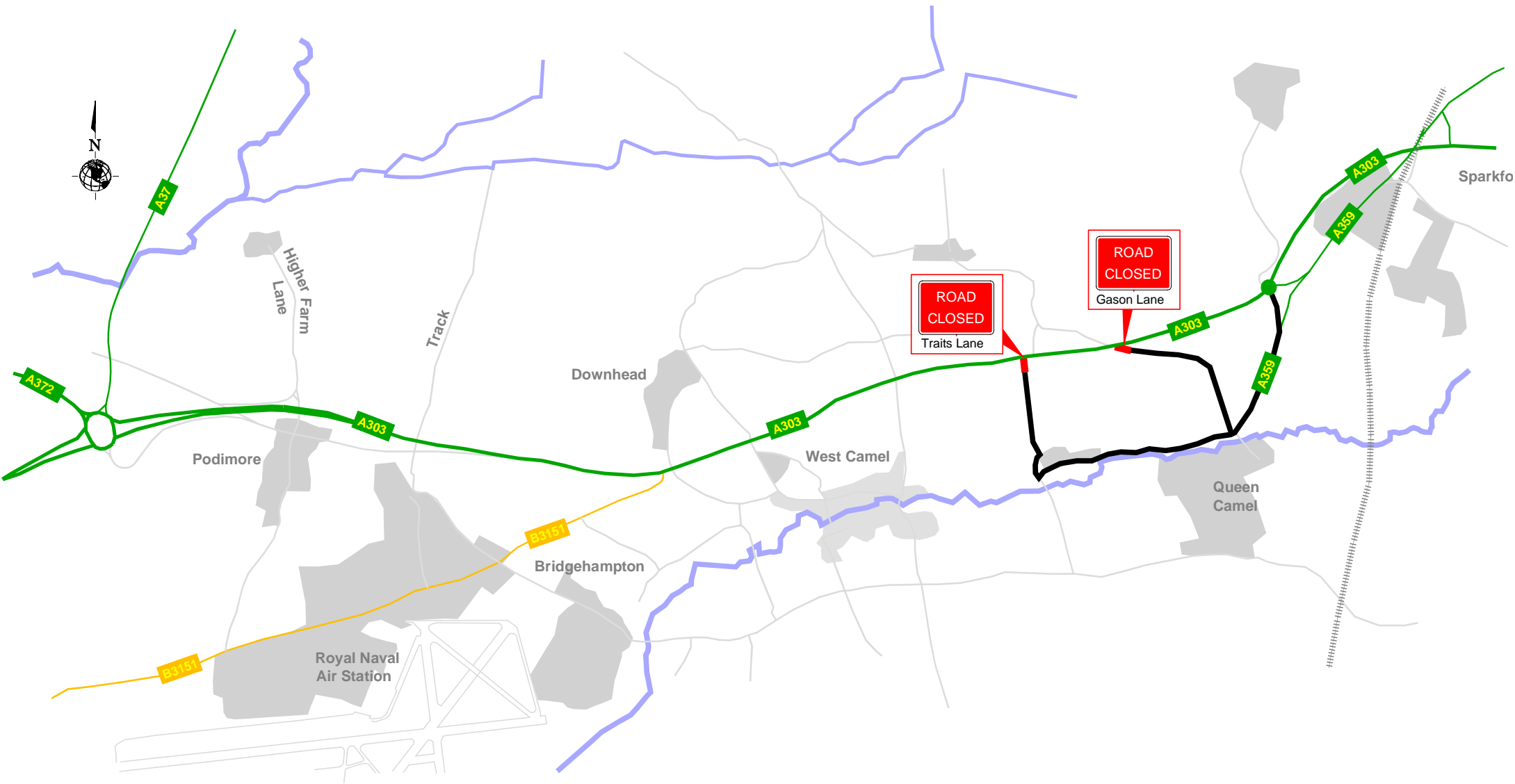
3 APPENDICES

3.1 SCHEMATIC DRAWINGS FOR TEMPORARY DIVERSION ROUTES

- Drg01 A303 Sparkford TM Layout
- Drg02 A303 Traits Lane and Gason Lane closure
- Drg03 A303 Steart Hill closure
- Drg04 A303 Howell Hill closure
- Drg05 A303 Plowage Lane closure
- Drg06 A303 Downhead Lane closure
- Drg07 A303 RNAS Yeovilton Road closure
- Drg08 A303 - A303 WB Exit closure
- Drg09 A303 - A303 Ilchester to Sparkford closure
- Drg10 A303 - A303 Sparkford to Wincanton closure



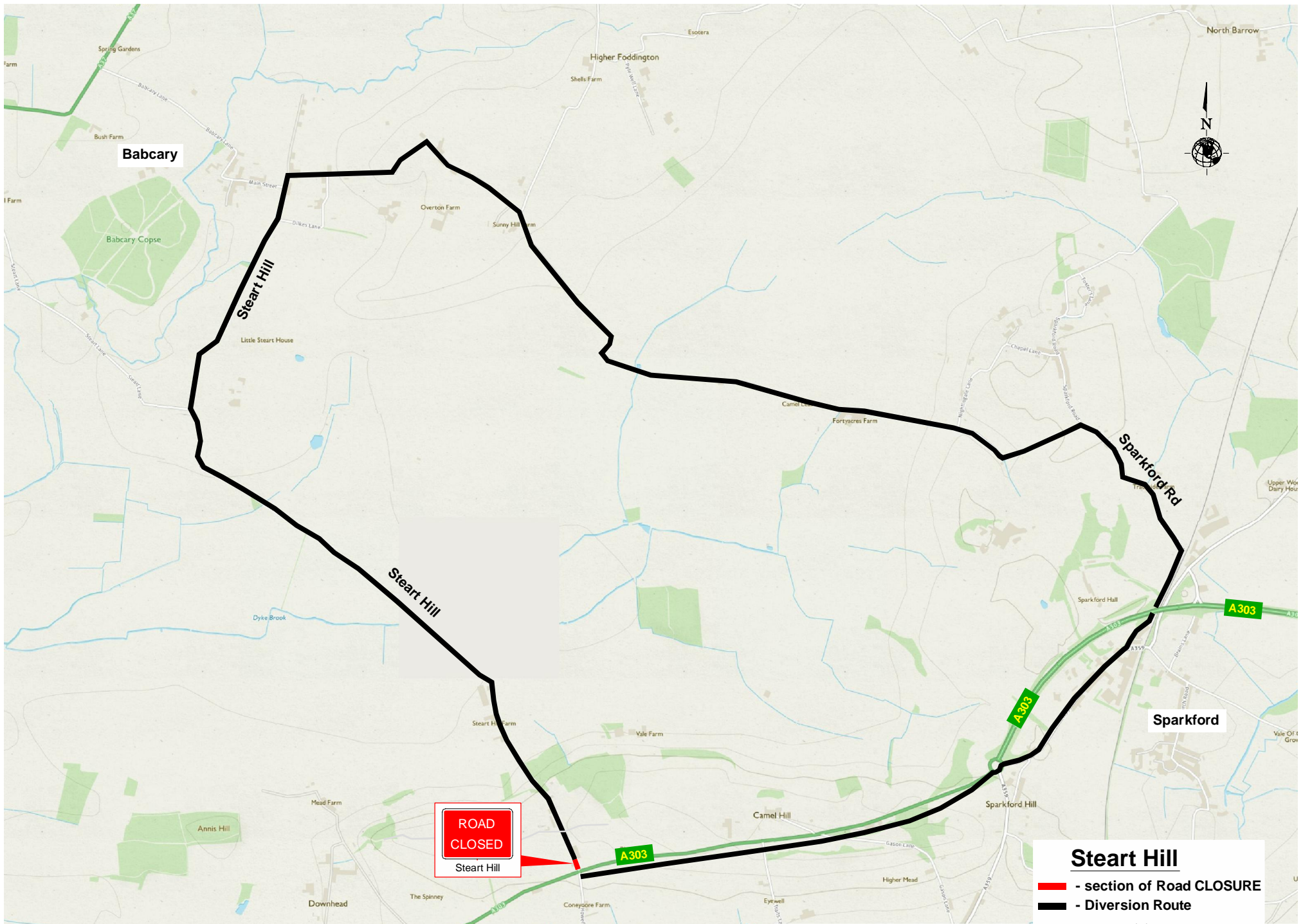
A303 Sparkford to Ilchester buildability support and advice Traffic Management Schematic - OPTION 1

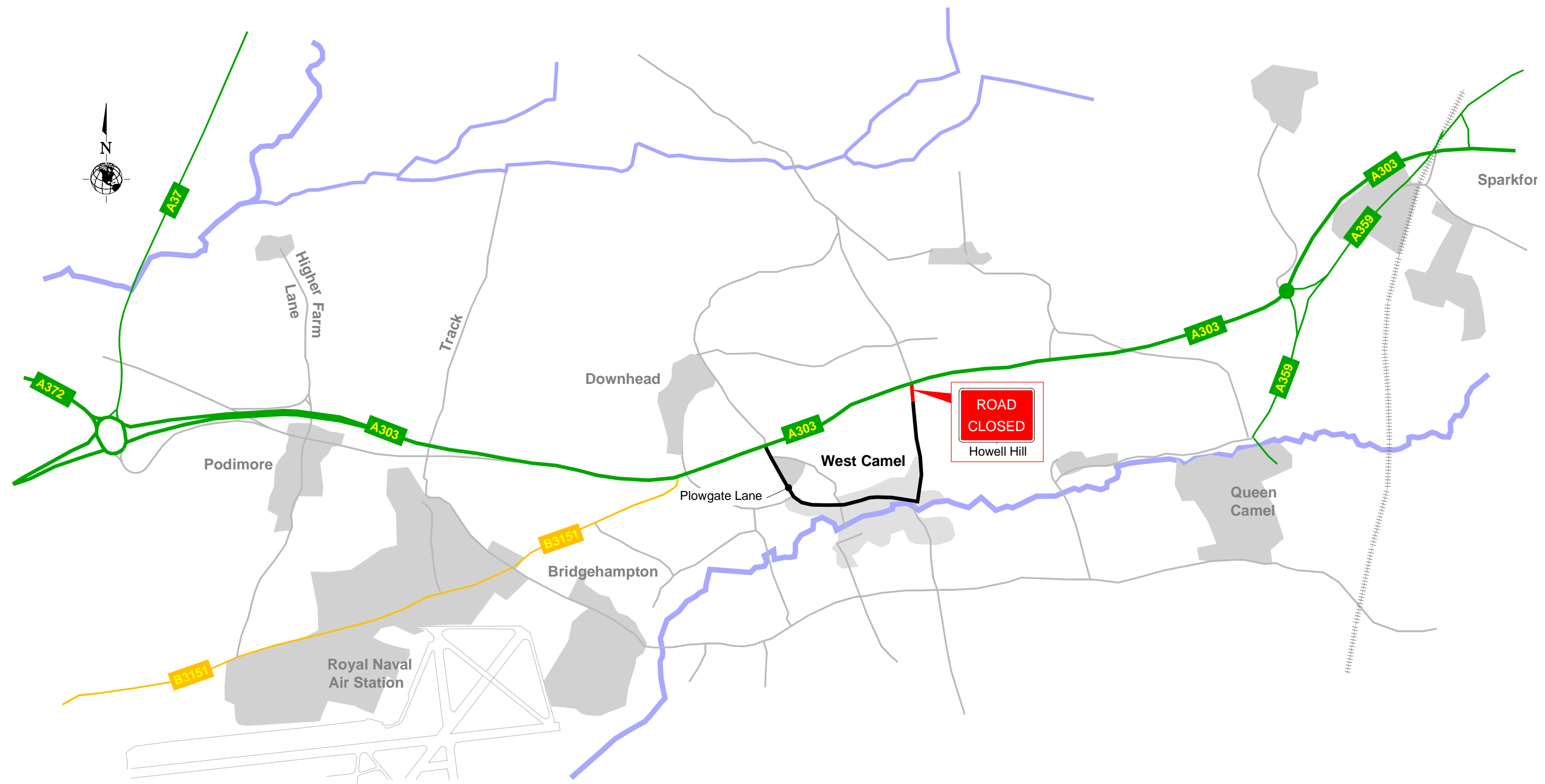


Traits Ln / Gason Ln

- - section of Road CLOSURE
- - Diversion Route (2 way)

17/1/18





Howell Hill

- - section of Road CLOSURE
- - Diversion Route (2 way)

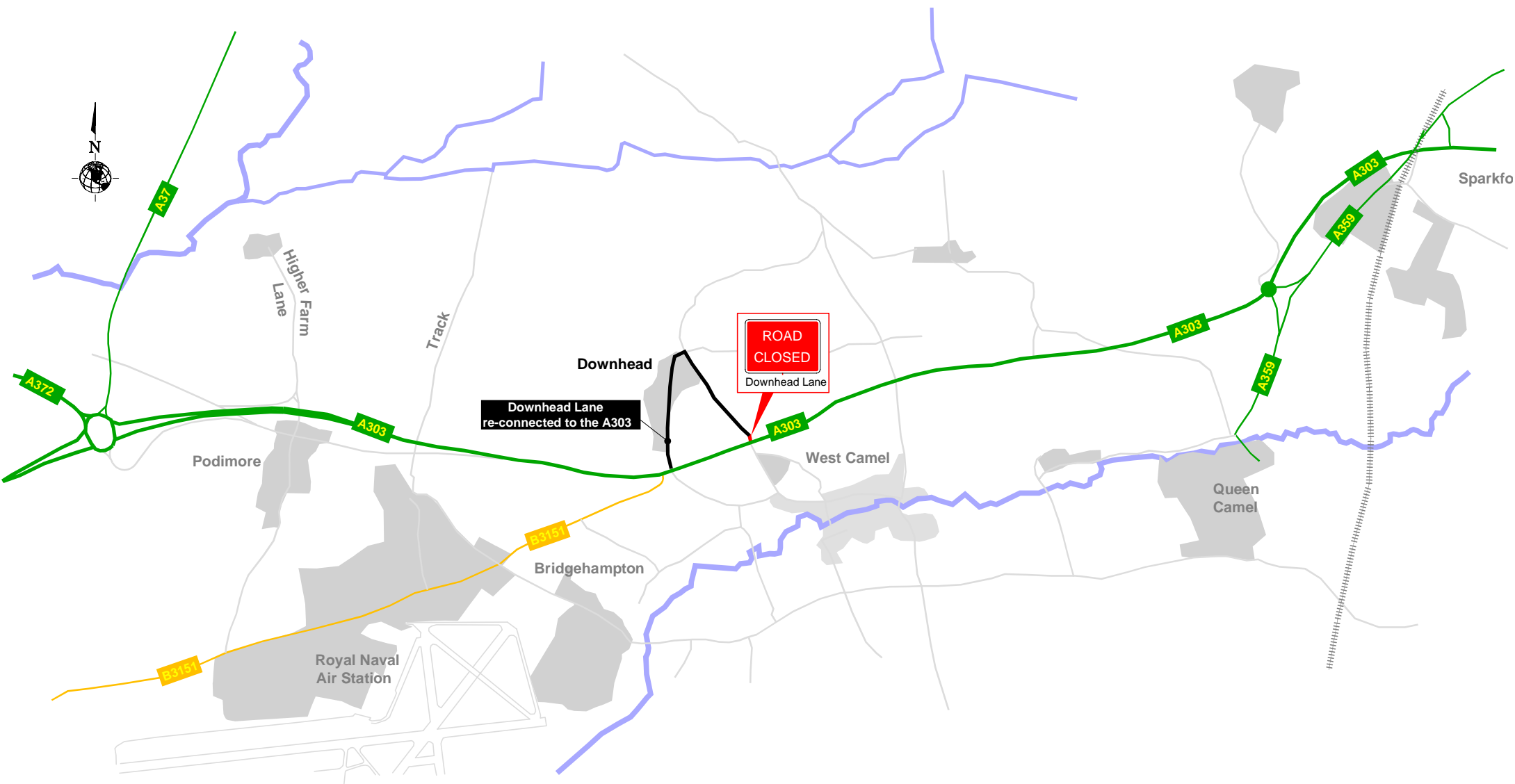
17/1/18



Plowage Lane

- - section of Road CLOSURE
- - Diversion Route (2 way)

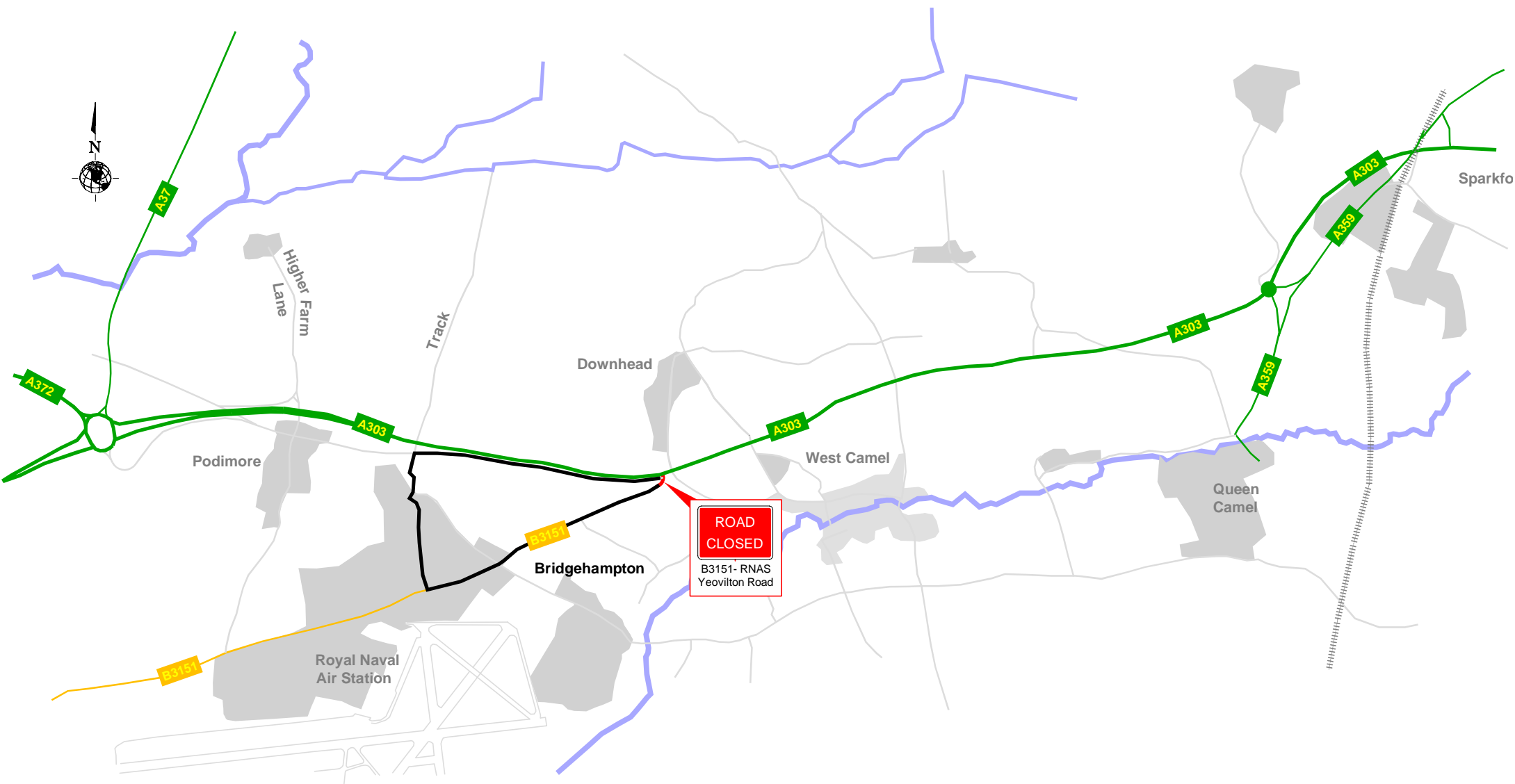
17/1/18



Downhead Lane

- - section of Road CLOSURE
- - Diversion Route (2 way)

17/1/18

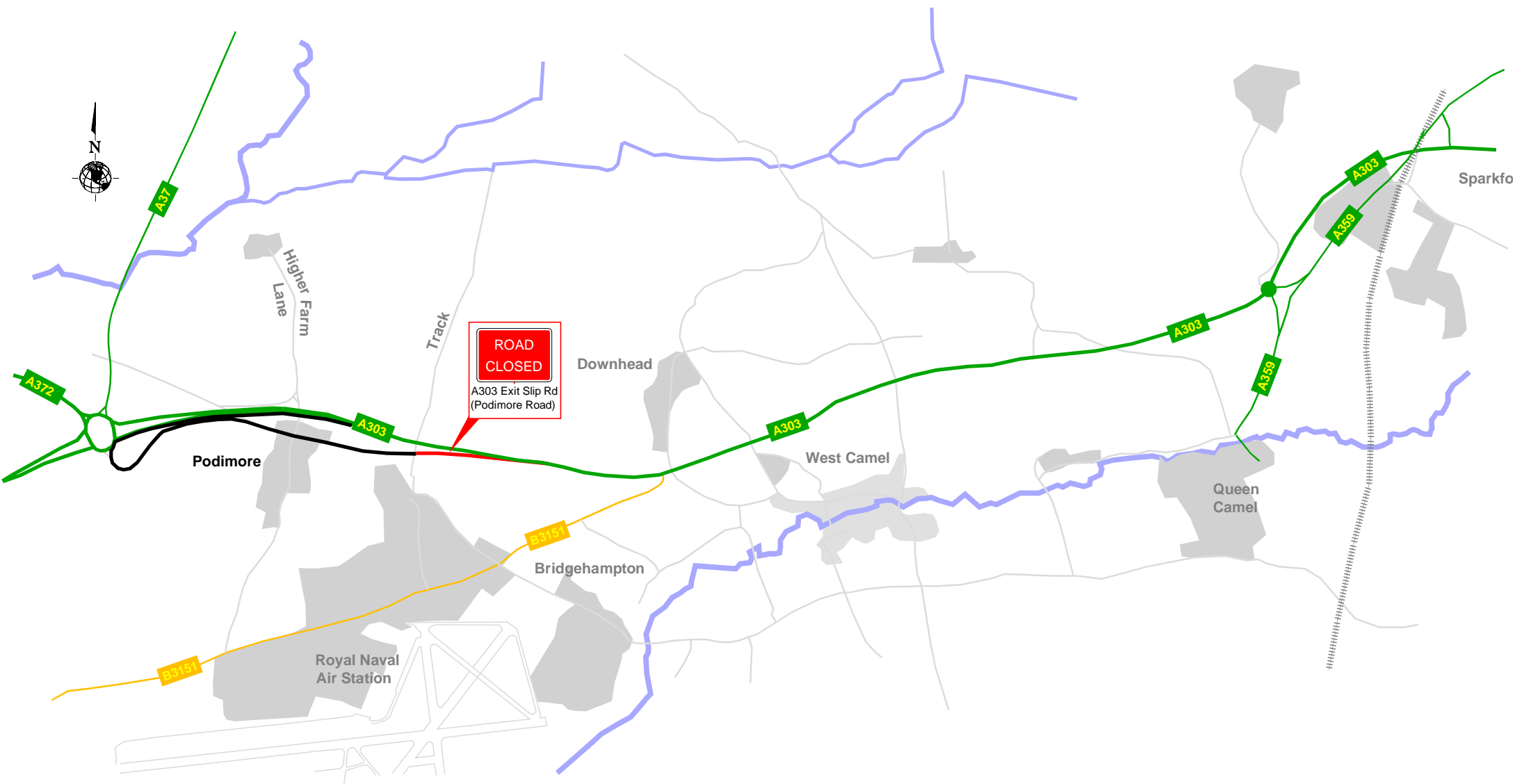


**ROAD
CLOSED**
B3151- RNAS
Yeovilton Road

B3151 - Yeovilton Road

- - section of Road CLOSURE
- - Diversion Route (2 way)

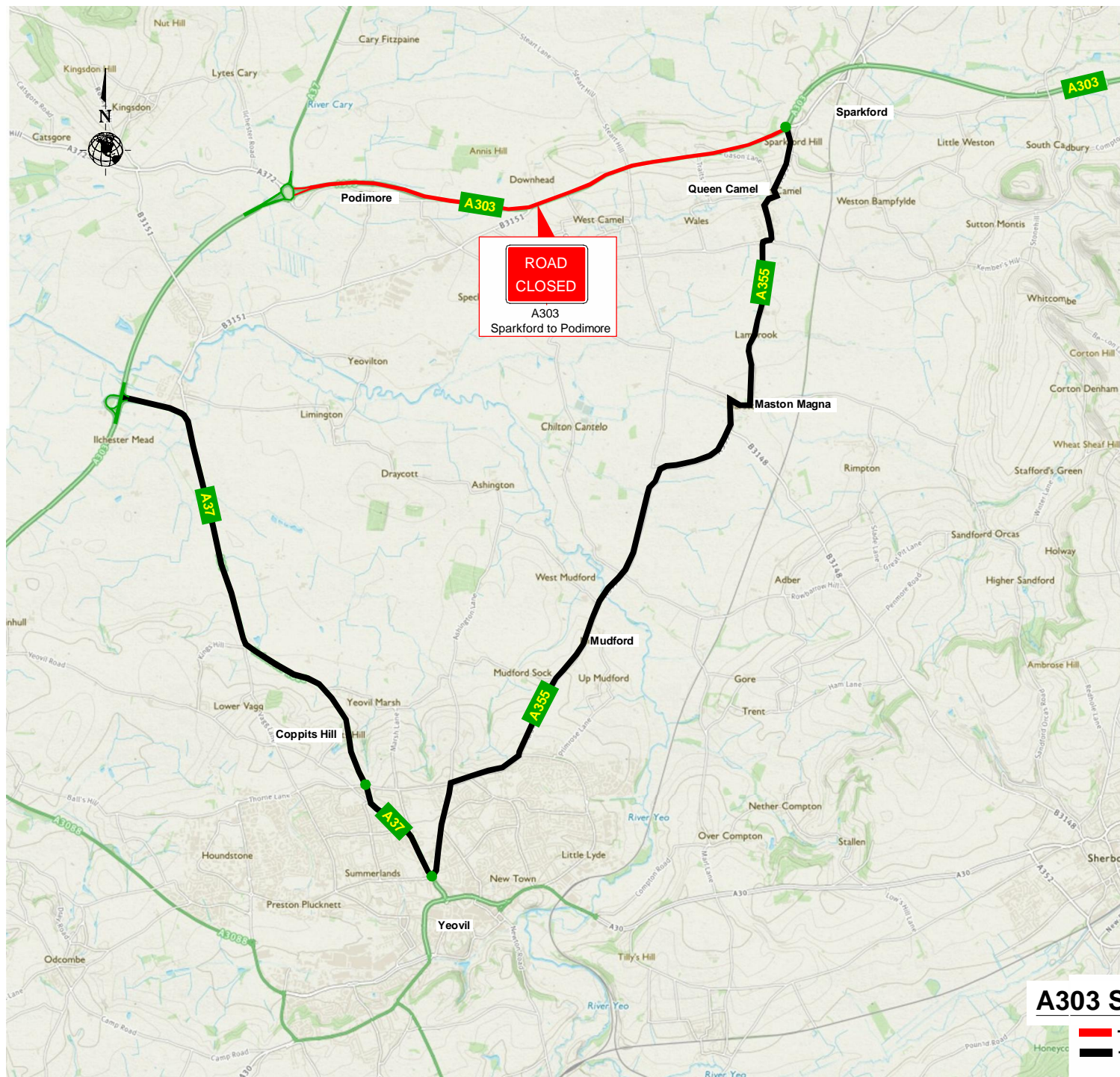
17/1/18

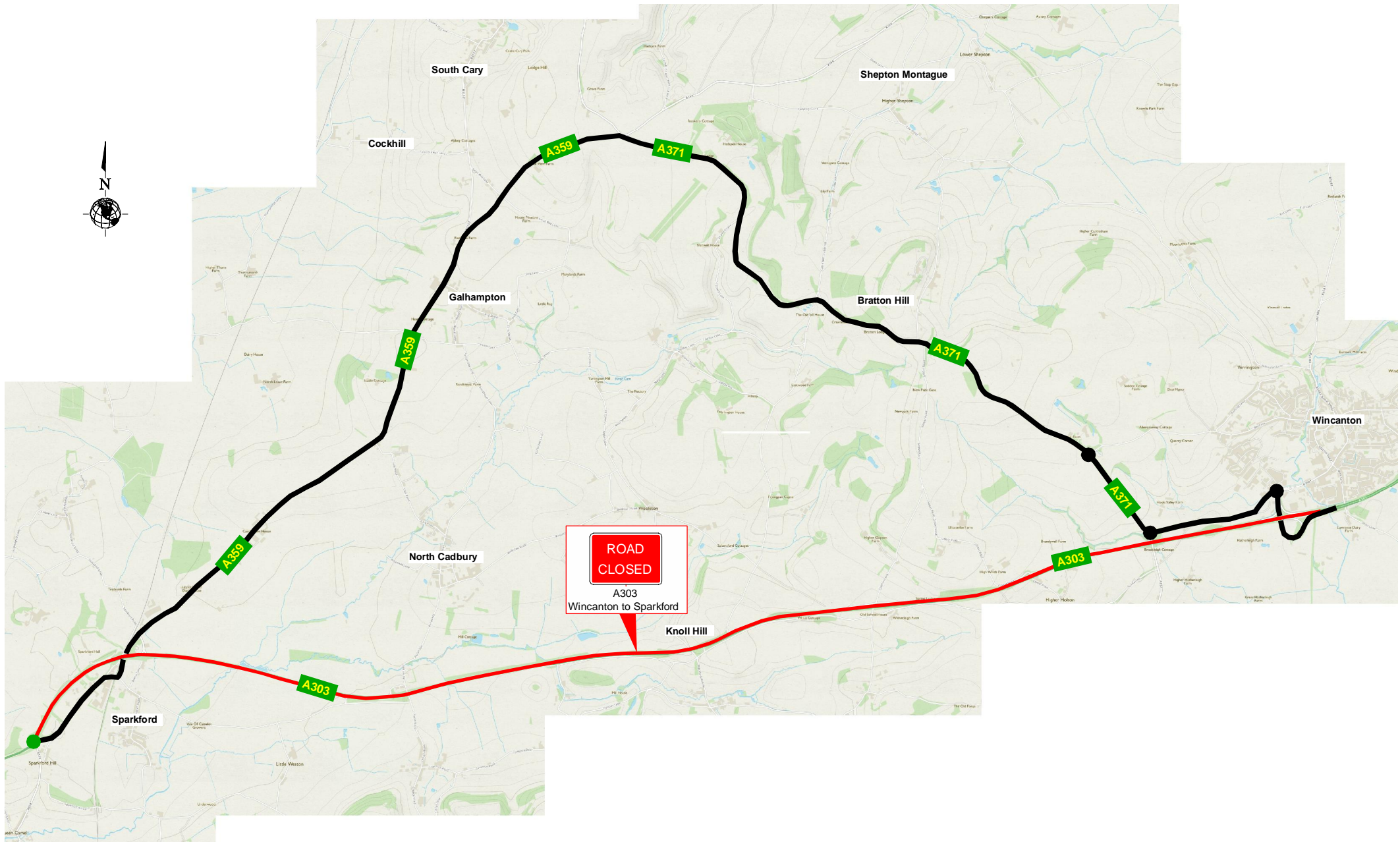


A303 Exit Slip Road

- - section of Road CLOSURE
- - Diversion Route

17/1/18





A303 Wincanton to Sparkford

- - section of Road CLOSURE
- - Diversion Route (2 Way)