

A303 Sparkford to Ilchester Dualling Scheme TR010036

6.1 Environmental Statement Chapter 15 Summary

APFP Regulation 5(2)(a)
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Forms and Procedure) Regulations 2009
July 2018

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Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations
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**A303 Sparkford to Ilchester Dualling
Scheme**

Development Consent Order 201[X]

**6.1 Environmental Statement
Chapter 15 Summary**

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15 Summary

15.1 Introduction

15.1.1 This chapter summarises residual likely significant effects reported in this Environmental Statement (ES). Topic specific impact assessments are presented in detail in Chapters 5 to Chapter 14 of Volume 6.1.

15.1.2 To assist in the understanding of the summary findings a number of assessment fundamentals are outlined below.

15.2 Significance of effects

15.2.1 The significance of environmental effects is largely defined by reference to 2 key factors:

- The value or sensitivity of the receptor
- The magnitude of scale of the impact

15.2.2 Chapter 4 Environmental Assessment Methodology of Volume 6.1 describes the general approach to the environmental assessment for each topic. For most topics the significance of an effect is defined in 5 categories (Neutral, Slight, Moderate, Large and Very Large). With the addition of the terms Adverse or Beneficial, the categories can be applied as a balanced 9-point scale (Neutral; Slight Adverse; Moderate Adverse; Large Adverse; Very Large Adverse; Slight Beneficial; Moderate Beneficial, Large Beneficial and Very Large Beneficial).

15.2.1 For the majority of environment assessment chapters, effects that are Moderate Beneficial / Adverse or above will be considered significant, with the exception of the methodology used to determine significance of effects associated with material assets (contained within Chapter 10 Material Assets and Waste, Volume 6.1), for which effects that are Large Beneficial / Adverse or above will be considered significant.

15.2.2 Chapter 6 Air Quality, Chapter 11 Noise and Vibration, Chapter 13 Climate (effects on climate) (Volume 6.1) do not explicitly follow this general approach to determining the significance of effects, due to the nature of the topics and their methodologies. The criteria used to determine the significance of effects are outlined in these individual chapters.

15.2.3 In all cases, the assessment is based on the worst case scenario principle noted in Chapter 2 The Scheme of Volume 6.1, and the individual topic chapters (Chapters 5 to 14 of Volume 6.1) where relevant.

15.3 Mitigation

- 15.3.1 Measures to mitigate the effects of the scheme have been identified and included within the topic chapters (Chapters 5 to 14, Volume 6.1). Mitigation measures have also been included in the Register of Environmental Actions and Commitments (REAC) which forms part of the ***Outline Environmental Management Plan (OEMP) (document reference TR010036/APP/6.7)***, to be developed into a full Construction Environmental Management Plan (CEMP) by the appointed contractor.

15.4 Residual effects

- 15.4.1 Significant environmental effects that are identified with mitigation in place are referred to as residual effects. These are described in each topic chapter (Chapters 5 to 14 of Volume 6.1).
- 15.4.2 Some design features and mitigation measures may result in an environmental improvement. In these instances, the residual effect is recorded as beneficial.

15.5 Summary of residual likely significant effects

- 15.5.1 Table 15.1 summarises the required mitigation measures and the likely significant effects (those residual effects with a significance of Moderate Adverse or Beneficial or greater).

15.6 Summary of monitoring requirements

- 15.6.1 A summary of the monitoring requirements is provided within Table 15.2.

Table 15.1: Summary of significant residual environmental effects detailed in the individual topic chapters (Chapters 5 to 14, Volume 6.1)

Receptor(s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effect(s) after mitigation
Chapter 5 Air Quality – no significant adverse or beneficial residual effects.							
Chapter 6 Cultural Heritage							
Built heritage							
Eyewell Group – 3 Grade II Listed buildings	The location of a site compound for the duration of the scheme in an area that lies approximately 35 metres north of the assets would increase the noise levels throughout its construction and operation. The site compound would be located on higher ground than the assets, and there is potential for a visual link between the assets and site compound, particularly in views looking north from the junction of Eyewell and Blackwell Road, interrupting the current rural and agricultural surrounding landscape. The site compound would increase the levels of noise experienced at the assets, and there is potential for intervisibility between the assets and proposed temporary structures. This would negatively impact their rural and quiet setting.	Adverse	Construction	Temporary	<ul style="list-style-type: none"> To reduce noise disturbance, it would be necessary to locate generators more than 20 metres from the asset. The use of temporary noise screening would also be included where appropriate. Trees would be retained to the north of the house to address visual intrusion into important views to (looking north) and from (looking south) the house. 	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP.	Moderate Adverse
Hazlegrove House Group – 3 Grade II Listed buildings	The construction of the new A303 route would remove 20.25 hectares of the park and would considerably alter the south western corner of the RPG, which forms an important part of the setting of the Hazlegrove House Group. Although the area removed during construction is of lower value than other parts of the RPG its loss is still a significant area, approximately 26% of the RPG. This would negatively impact the ability to understand the extent and value of the RPG. The change in character of the area from arable farmland to construction area would considerably impact the setting of the house and important views from the house south west across the park. The works would be visible and prominent in the landscape especially in views from main façade of the house. An increase in the volume and type of noise would be expected during construction. This would negatively impact the value of the Hazlegrove House group eroding the relatively tranquil rural setting.	Adverse	Construction	Temporary	<ul style="list-style-type: none"> The layout of the construction compound and soil storage area at Hazlegrove would be designed in such a way to minimise the impact on views south west from the house and across the park. This would include the location of areas and functions of the compound and screening by way of suitable fencing or timber hoardings. 	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP.	Moderate Adverse
	Although the house, gateway, walls and wrought iron gates would not be physically impacted, the construction of Hazlegrove Junction would result in the permanent alteration of the setting of the heritage asset. Approximately 10.6 hectares of the south-western part of the associated RPG would be permanently removed. The construction method of the scheme would not allow this part of the park to be easily reinstated if the use of the A303 should cease. This would have a considerable permanent negative impact on the setting of asset.	Adverse	Construction	Long term	<ul style="list-style-type: none"> The retention of part of the woodland in the southern park and screening of the proposed A303 would remove moving traffic from key historic views. The screening would be sensitive to the surrounding parkland species, and the remaining surrounding land would be reinstated following construction and incorporated into the parkland through the planting of specimen trees. This would have the added advantage of screening Camel Hill Services in views from the house. Lighting of Hazlegrove Junction would also be screened from views once planting has become established. 	Detailed in the OEMP (document reference TR010036/APP/6.7) and Environmental Masterplan (Figure 2.5, document reference TR010036/APP/6.7), to be implemented through the CEMP and LEMP.	Moderate Adverse
	There is potential for an increase in traffic noise to be experienced at the asset during operation, as the proposed route of the A303 and associated junctions are brought closer to the asset. However, this would be reduced by the use of false cuttings and would be in the context of the existing A303 noise, reducing the impact on the setting of the asset. Initially traffic movement and lighting columns would be visible in the first few years of operation, however as landscaping matures traffic movements and lighting would be screened or filtered in	Adverse	Operation	Long term	<ul style="list-style-type: none"> The introduction of woodland planting and false cuttings would screen traffic movement from important historic views from the house and parkland, looking south west across the park. As the planting matures the street lighting will be filtered or screened from the RPG. 	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the LEMP.	

Receptor(s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effect(s) after mitigation
	views from the house. Important historic views from traffic along the A303 towards the house would be lost.						
Hazlegrove Park Group – Hazlegrove House Registered Park and Garden	<p>For the construction of the new A303 route 20.25 hectares would be removed from the south-western corner of the RPG to be used as an ancillary construction compound. Although the area removed during construction is of lower value than other parts of the RPG its loss is still a significant area, approximately 26% of the RPG. This would negatively impact the ability to understand the extent and value of the RPG.</p> <p>The change in character of the area from arable farmland to construction compound and soil storage area would considerably physically impact the RPG and also the setting of the remaining RPG, and the Hazlegrove House group which is an important component of the RPG. The construction works and compound would be visible and prominent in the landscape especially in views from the parkland to the north and main façade of the house. Views from the current A303 of the house would also be interrupted by the presence of the construction compound and associated plant movement.</p> <p>An increase in the volume and type of noise could be expected during construction. This would negatively impact the heritage value of the RPG, eroding the relatively tranquil rural setting.</p>	Adverse	Construction	Temporary	<ul style="list-style-type: none"> The layout of the compound and soil storage area would be designed to reduce the impact on views. 	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP.	Large Adverse
	<p>Approximately 10.6 hectares of the south-western part of the RPG would be permanently removed. The construction method of the scheme would not allow this part of the park to be easily reinstated if the use of the A303 should cease. This would have a permanent negative physical impact on asset, as well as its setting.</p> <p>Important features associated with the RPG would be removed including the earthworks of the former drives in the woodland which abuts the north of the current A303 route. This would result in the loss of important evidential value within the RPG. Parts of these earthworks would be retained however they would be largely divorced from the RPG by the presence of the scheme, removing the ability to fully understand their historic relationship with the asset. Archaeological recording of these features would be carried out to offset their loss.</p> <p>The diversion of the public right of way (PRoW), which runs along the route of the original lane to Hazlegrove, would impact the ability to understand the historic routes and driveways which dictated the layout and development of the RPG.</p> <p>Although mitigation would improve views once vegetation has matured and reinstate some of the historic character of the setting of the RPG the permanent loss of approximately 14% of the asset, along with evidential value related to features which would be removed, would lead to a significant impact on the ability to understand the historic extent, character, development, and heritage value of the RPG.</p>	Adverse	Construction	Long term	<ul style="list-style-type: none"> The introduction of woodland planting and false cuttings would screen much of the scheme from important historic views from the house and parkland, looking south west across the park. This would result in much of the incongruous modern development related to the road network, including Camel Hill services, to be screened from historic views once vegetation matures. This would reinstate a more rural character to these views and the RPG at its south-western extent. 	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the LEMP.	Large Adverse
	<p>Operation would introduce traffic movement into the southern section of the park along the route of the scheme. This would result in an alien modern intrusion into the historic park.</p> <p>There is potential for an increase in traffic noise to be experienced at the asset during operation, as the proposed route of the A303 and associated junctions are brought closer to the asset.</p>	Adverse	Operation	Long Term	<ul style="list-style-type: none"> The introduction of woodland planting and false cuttings would screen traffic movement from important historic views from the house and parkland, looking south west across the park. As the planting matures the street lighting will be filtered or screened from the RPG. 	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP.	Moderate Adverse

Receptor(s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effect(s) after mitigation
	<p>However, this would be reduced by the use of false cuttings and would be in the context of the existing A303 noise, reducing the impact on the setting of the asset.</p> <p>Initially traffic movement would be visible, however as landscaping matures traffic movements would be screened in views from the RPG.</p> <p>During the first few years of operation the installation of lighting columns at the Hazlegrove Junction would result in an increase in light experienced in key views from the asset that contribute to the value of the asset. This would negatively impact the rural setting of the asset. However, as vegetation matures the lighting would be screened or filtered reducing its impact.</p>						
Grade II Listed Milestone on A303 at NGR ST57892538	The construction works required would result in a physical impact on the asset, which would require temporary removal from its current location. The roadside setting and location of the asset contributes to the value of the asset, and therefore temporarily removing it from its location would have an adverse impact.	Adverse	Construction	Temporary	<ul style="list-style-type: none"> Prior to removal, the current location of the milestone would be recorded and photographed. The milestone would then be stored and on completion of the scheme relocated to an appropriate point on the A303 which retains its historic setting. 	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP.	Moderate Adverse
Pepper Hill Cottage, Camel Hill	The construction of the Camel Hill Farm Link and Hazlegrove Junction Eastbound Off-slip would result in a considerable increase in noise experienced from the asset during construction as this will occur 5 metres from the asset. The works would be visible from the property, and remove the trees which currently provide a buffer between the rural character of the property and its setting making the construction activity more prominent. This would have a considerable negative impact on the rural setting of the asset.	Adverse	Construction	Temporary	<ul style="list-style-type: none"> Best practice measures to reduce adverse effects associated with construction noise, as detailed in the OEMP (document reference TR010036/APP/6.7). 	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP.	Moderate Adverse
	The asset will sit 5 metres from the scheme, which is approximately 50 metres closer than the current route of the A303. Much of the southern part of the setting of the property will be permanently removed, including the trees which provide a buffer between the rural character of the property and the busy road. This will negatively impact views to the south from the asset and the ability to understand the heritage value of the asset as a rural house within an agricultural landscape as it would now appear as a road side dwelling.	Adverse	Construction	Long term	No mitigation measures applicable.	Not applicable.	Moderate Adverse
Buried archaeology							
Camel Hill Scheduled Monument Group	It is likely that there would be an increase in noise during construction work, due to the construction of haul road to the north, a compound on the opposite side of the A303, as well as general construction noise and an increase construction traffic for the duration of the construction period. However, this is in the context of the current noise from the A303. Additionally, the haul road has the potential to interrupt views to the north and north west towards Lamyatt Beacon, which contribute to the value of the asset. There is potential for the construction works to uncover and permanently remove Iron Age or Roman archaeological remains associated with the scheduled monument, outside of areas previously truncated by the existing A303.	Adverse	Construction	Temporary and long term	<ul style="list-style-type: none"> Temporary fencing and an exclusion area around the scheduled monument. To offset negative impacts, following the results of archaeological trench evaluation, if remains are present and it is not possible to retain them in situ, an appropriate archaeological level of recording would be undertaken in accordance with an agreed Written Scheme of Investigation (WSI). 	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and WSI.	Moderate Adverse

Receptor(s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effect(s) after mitigation
Pre-historic unknown archaeological remains	The construction of the scheme and associated infrastructure has the potential to result in the destruction and permanent removal of prehistoric archaeological remains.	Adverse	Construction	Long term	<ul style="list-style-type: none">To offset negative impacts, following the results of archaeological trench evaluation, if remains are present and it is not possible to retain them in situ, an appropriate archaeological level of recording would be undertaken in accordance with an agreed Written Scheme of Investigation (WSI).The results of a geophysical survey and programme of trial trenching are awaited to further inform the assessment of archaeological potential, and determine specific areas of archaeological interest. These will be submitted as additional information during the DCO examination.	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and WSI.	Large Adverse
Roman unknown archaeological remains	The construction of the scheme and associated infrastructure has the potential to result in the destruction and permanent removal of Roman archaeological remains, including any associated with the roadside settlement scheduled monument.	Adverse	Construction	Long term		Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and WSI.	Moderate Adverse
Early medieval unknown archaeological remains	The construction of the scheme and associated infrastructure has the potential to result in the destruction and permanent removal of early medieval archaeological remains.	Adverse	Construction	Long term		Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and WSI.	Large Adverse
Medieval unknown archaeological remains	The construction of the scheme and associated infrastructure has the potential to result in the destruction and permanent removal of medieval archaeological remains.	Adverse	Construction	Long term		Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and WSI.	Large Adverse
Chapter 7 Landscape							
Landscape							
Landscape Character Areas	Of the 7 Landscape Character Areas (LCAs) identified, 2 (LCA2 Hazlegrove and LCA6 West Camel and Wales) would experience Significant Adverse effects during construction for a temporary period due to the presence of construction infrastructure and vehicles which would create adverse effects to the setting of these LCAs.	Adverse	Construction	Temporary	Effects would be reduced by keeping a well-managed and tidy site and compounds. Ensuring materials are delivered to site on an as and when basis would avoid unnecessary stockpiles and would help to reduce construction impacts. Temporary offices and welfare facilities within site compounds would be of a recessive colour to blend in with the local surroundings. Lighting would be kept to a minimum luminosity necessary and use low energy consumption fittings. Where appropriate, lighting would be activated by motion sensors to prevent unnecessary usage. Lighting would be directional, and positioned sympathetically, to minimise light spill and disturbance for highly sensitive receptors. An Arboricultural Method Statement (AMS) would be produced to prevent damage to any vegetation to be retained.	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and AMS.	<ul style="list-style-type: none">LCA2 would experience a Large Adverse effect.LCA6 would experience a Moderate Adverse effect.
	Of the 7 LCAs identified, 1 LCA (LCA2 Hazlegrove) would experience Significant Adverse effects during operation due to the high sensitivity of this receptor. Proposed embankments and	Adverse	Operation	Year 1	Establish mitigation planting so that by Year 15 the planting would have matured to aid the integration and screening of the scheme from the surrounding area.	Detailed in the OEMP (document reference	<ul style="list-style-type: none">LCA2 would experience a

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	slopes would have been planted with native tree and shrub planting on the proposed Hazlegrove Junction embankments and would offer very little landscape integration in Year 1, although seeded areas would have established. In Year 1 it is expected that the Hazlegrove Junction would still appear as a discordant feature within the context of Hazlegrove House RPG although tranquillity may have increased due to the inclusion of embankments along the proposed road.					TR010036/APP/6.7) , to be implemented through the CEMP and HEMP.	Moderate Adverse effect.
Visual							
Visual receptors	During construction, construction infrastructure and vehicles would create significant adverse visual impacts.	Adverse	Construction	Temporary	As outlined under 'Landscape'.	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and AMS.	<ul style="list-style-type: none"> • 1 receptor would experience a Very Large Adverse effect. • 8 receptors would experience a Large Adverse effect. • 7 receptors would experience a Moderate Adverse Effect.
	During operation, the introduction of a new dual carriageway would result in significant adverse visual impacts.	Adverse and beneficial	Operation	Year 1	As outlined under 'Landscape'.	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the HEMP.	Year 1 <ul style="list-style-type: none"> • 7 receptors would experience a Moderate Adverse effect.
Chapter 8 Biodiversity							
Hedgerows	The construction works would result in the loss of, or partial loss, of approximately 7.75 kilometres of hedgerows including those identified as species rich and important. Effects include the fragmentation of connectivity between hedgerows, and the severance of wildlife corridor routes.	Adverse	Construction	Temporary	Hedgerows would be reinstated following construction.	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP.	Moderate Adverse
Bats	Although no bat roosts would be directly affected during construction, disturbance from construction works has the potential to cause roost abandonment resulting from increased light, noise and vibration levels. Tree felling and hedgerow removal proposed as part of the construction works including the construction of the haul route, has the potential to disrupt commuting routes and reduce foraging resources, in addition to resulting in permanent loss of habitat on site. Vegetation clearance, including grassland habitats would also result in permanent loss of habitat, and reduce the foraging resources on site.	Adverse	Construction	Temporary	The potential effects on bat species would be minimised where possible during the construction phase through retaining habitat where feasible; implementing buffers of at least 10 metres between works and important roosting or foraging habitats; installation of additional bat roosting features and planting of compensatory habitat.	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP.	Moderate Adverse
Barn owls	During construction there would be a loss of high quality foraging habitat. Lighting of construction areas during times when the barn owls are active may cause the owls to avoid areas and further cause a barrier to dispersal. An increase in noise disturbance to nest locations close to the scheme above that of the current activity levels may cause abandonment of the nesting location.	Adverse	Construction	Temporary	Prior to the start of the works the 2 recorded Occupied Breeding Sites (OBS) and all previously identified Potential Nesting Sites (PNS) must be rechecked within 1km of the works. Closure of OBS1 will need to take place outside of the breeding season by a licenced ecologist. Installation of 3 new nest boxes to mitigate for	Detailed in the OEMP (document reference TR010036/APP/6.7) ,	Moderate Adverse

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					the loss of OBS1. During construction, retain a 20 metre buffer around active barn owl nests to reduce potential disturbance effects and minimising light spill through a sensitive lighting design.	to be implemented through the CEMP.	
Chapter 9 Geology and Soils – no significant adverse or beneficial residual effects							
Chapter 10 Material Assets and Waste							
Landfills in Somerset	The construction of the scheme has the potential to result in the generation of inert waste which, due to the limited remaining capacity of inert landfill in Somerset,	Adverse	Construction	Temporary	Waste would be dealt with in accordance with the waste hierarchy and specified in the SWMP. Ensure materials are delivered on an as and when basis to reduce risk of damage or spoil. Use of pre-cast elements wherever possible to reduce waste from cut-offs. Reuse surplus excavated materials in the landscaping for the scheme. Opportunities to re-use inert material in the restoration of nearby quarries would be investigated and progressed where possible.	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and SWMP.	Moderate Adverse
Chapter 11 Noise and Vibration							
Noise							
Residential receptors sensitive to construction noise	Linear road works would produce significant adverse effects at 10 receptors if the works in the vicinity of the receptor extend beyond a period of 10 or more days of working in any 15 consecutive days or for a total number of days exceeding 40 in any 6 consecutive months. Construction of site compounds have the potential to produce significant adverse effects at 3 receptors if they extend beyond a period of 10 or more days of working in any 15 consecutive days or for a total number of days exceeding 40 in any 6 consecutive months.	Adverse	Construction	Temporary	Detail best practice noise measures here? The Contractor will be required to approach South Somerset District Council prior to construction works commencing to obtain approval through the Section 61 process. During this process any assumptions used in calculating construction impacts in this assessment will be refined and mitigation identified that will ensure there will be no residual significant impacts.	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and Section 61.	Significant Adverse
2 residential receptors (The Spinney and Annis Hill Farm)	In the long-term the scheme would produce 2 significant adverse effects, at The Spinney and Annis Hill Farm.	Adverse	Operation	Long term	Mitigation embedded within the scheme design includes consideration of horizontal alignment, use of cuttings and embankments, noise barriers and low-noise running surfaces. Compensation in the form of secondary glazing to be offered to the owners of these properties.	Detailed in the OEMP (document reference TR010036/APP/6.7) and Environmental Masterplan (Figure 2.5, document reference TR010036/APP/6.7), to be implemented through the CEMP.	Significant Adverse
Vibration							
Residential receptors sensitive to construction vibration	Piling would produce a significant adverse effect at 1 receptor if the piling occurring within 81 metres of the receptor exceeds a period of 10 or more days of working in any 15 consecutive days or for a total number of days exceeding 40 in any 6 consecutive months.	Adverse	Construction	Temporary	Implementation of best practice noise mitigation measures as detailed within the OEMP (document reference TR010036/APP/6.7) . The Contractor will be required to approach South Somerset District Council prior to construction works commencing to obtain approval through the Section 61 process. During this process any assumptions used in calculating construction impacts in this assessment will be refined and mitigation identified that will ensure there will be no residual significant impacts.	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and Section 61.	Significant Adverse
Chapter 12 People and Communities							
Non-motorised users							

Receptor(s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effect(s) after mitigation
NMU journey: Sparkford to Podimore	The scheme would allow for a new journey to be made for NMUs between Sparkford, Downhead and Podimore. This is considered to be a significant benefit for NMUs and could increase usage of the NMU network.	Beneficial	Operation	Long term	Not applicable	Not applicable	Large Beneficial
NMU journey: Sparkford to Hazlegrove House / Sparkford Hall via Sparkford Hill	A 430 metre section of Footpath WN 23/12 would be permanently closed, no longer allowing NMUs to cross the A303 at-grade using an uncontrolled crossing. This would amount to journey length increases for NMUs and a Minor Adverse impact. The provision of NMU facilities as part of the new local road A303 underbridge would be far safer for NMUs when compared to the existing uncontrolled crossing of the A303 and could increase usage for NMUs. The new facilities are considered to result in a Major Beneficial impact on NMUs. 28 NMUs were counted using Footpath WN 23/38 between Hazlegrove House and Sparkford Hall.	Beneficial	Operation	Long term	Not applicable	Not applicable	Moderate Beneficial
NMU journey: Sparkford to Camel Hill	NMUs would no longer be able to cross the A303 at-grade between Gason Lane and Footpath WN 23/33, however a diversion would be provided between Camel Hill and Hazlegrove roundabout which would result in journey length decreases and a Minor Beneficial impact. The diversion adjacent to the Camel Hill access road would also be safer for NMUs would be considered an upgrade to NMU facilities, whilst the NMU facilities provided as part of the new local road A303 underbridge would be far safer for NMUs when compared to the existing uncontrolled crossing of the A303 and could increase usage for NMUs.	Beneficial	Operation	Long term	Not applicable	Not applicable	Moderate Beneficial
Amenity							
NMU routes	The scheme would require the permanent diversion of all at-grade crossings of the A303 between Hazlegrove and Podimore, to separate NMUs from traffic, and also require the diversion of several routes. A new overbridge to the east of Downhead over the A303 with adjoining NMU facilities, and a new underbridge of the A303, primarily for vehicle travellers, but with NMU facilities alongside this road would be provided as part of the scheme, which would allow for NMUs to travel between Podimore, Downhead and Sparkford. The provision of these A303 crossings would be substantially safer than for the current baseline for NMUs, where NMUs are required to cross the A303 at-grade with flows in the opening year along most A303 links in the traffic model greater than 14000 AADT. This would increase the pleasantness of journey for NMUs. Traffic flows are also predicted to change at other existing at-grade crossings in the study area, including at Podimore and along the A359.	Beneficial	Operation	Long term	Not applicable	Not applicable	Moderate Beneficial
Community land and community facilities							
3 churches, a community centre, 2 schools, a medical centre, 2 sports clubs, a cricket club, a	No effects on community land are anticipated during operation. However, with regards to community facilities, the aim of the scheme is to create relief from congestion on the local road network. Such improvements would lead to improved access to community facilities within and just outside of, the study area, in terms of journey time. These facilities include 3 churches, a	Beneficial	Operation	Long term	Not applicable	Not applicable	Moderate Beneficial

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museum and a RNAS base.	community centre, 2 schools, a medical centre, 2 sports clubs, a cricket club, a museum and a RNAS base.						
Hazlegrove Preparatory School.	During operation, access to Hazlegrove Preparatory School to be permanently improved due to a new slip road being provided from a new grade-separated junction. The improved access would ease congestions for those accessing the school and would most likely benefit children who attend and are considered to be of medium sensitivity.	Beneficial	Operation	Long term	Not applicable	Not applicable	Moderate Beneficial
Driver stress							
Vehicle travellers	The scheme would provide a high quality free flowing dual carriageway along its length, resulting in a reduction on fear of potential accidents and also safe facilities for NMUs. On balance effects to driver stress would be Moderate Beneficial. However, a Large Beneficial effect is anticipated on driver stress along the A303 as a result of the scheme, with the provision of a high quality free flowing dual carriageway between Sparkford and Podimore and permanent speed limit increase significantly reducing driver frustration, and the removal of at-grade NMU crossings reducing the fear of potential accidents. On the whole, a Slight Beneficial effect is predicted on driver stress along local roads within the study area.	Beneficial	Operation	Long term	Not applicable	Not applicable	Moderate Beneficial
Demolition of private property							
Land take from Pepper Hill Cottage (north of the A303, opposite Gason Lane).	Land take would be required during the construction stage. Land take would be permanent for the engineering footprint, and for accommodation works. Both areas of land take would be from outside space to the south of the cottage. There would also be impacts on the current access route to the property. Even though accommodation works would provide a new access route to the property, the total land take for the property (excluding the new access route) is approximately 43% of the property's total plot.	Adverse	Construction	Long term	There is no mitigation that can be provided. Therefore, landholders will be compensated for their losses in accordance with the compulsory purchase compensation code.	Compulsory purchase compensation code.	Moderate Adverse
Land take from The Spinney (north of the A303, opposite Plowage Lane).	Construction of the scheme would require land to be taken from The Spinney. Land would be taken permanently (for the engineering footprint and for landscape planting area) and for accommodation works. Permanent land take for the engineering footprint would be required from the garden to the south of the property including the current access route. The land presently appears to be used as outside, field space, and land take is only likely to affect one receptor. This area of land take would also only be approximately 3% of the property's total plot.	Adverse	Construction	Long term	There is no mitigation that can be provided. Therefore, landholders will be compensated for their losses in accordance with the compulsory purchase compensation code.	Compulsory purchase compensation code.	Moderate Adverse
Land take from Hill View (to the south of the A303 approximately 180 metres west of Steart Hill).	During the construction stage, the scheme would require land to be taken from Hill View, a private residential property. Land would be required permanently for the engineering footprint, and temporarily with permanent rights to accommodate utility way leaves. Land would also be taken for accommodation works. All land take is to the east of the property and includes an access route to the property and green space. Even though accommodation works would provide a new access route to the property, the total land take for the property (excluding the new access route but including land taken for utility way leaves) is approximately 83% of the property's total plot.	Adverse	Construction	Long term	There is no mitigation that can be provided. Therefore, landholders will be compensated for their losses in accordance with the compulsory purchase compensation code.	Compulsory purchase compensation code.	Moderate Adverse
Agricultural land							
Grade 3 land	In the short term 21.57 of the total 96.7 hectares of Grade 3 agricultural land is used for temporary use during construction may have significant adverse effects.	Adverse	Construction	Temporary	There is no mitigation that can be provided. Therefore, landholders will be compensated for their losses in accordance with the compulsory purchase compensation code.	Compulsory purchase compensation code.	Moderate Adverse

Receptor(s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effect(s) after mitigation
Grade 3 land	In the long term 75.16 hectares of the total 96.7 hectares of Grade 3 agricultural land is lost for permanent use after construction might have significant adverse effects.	Adverse	Construction	Long term	There is no mitigation that can be provided. Therefore, landholders will be compensated for their losses in accordance with the compulsory purchase compensation code.	Compulsory purchase compensation code.	Moderate Adverse
Individual farm businesses							
4 farms	Temporary land take of 5 farms due to construction activities such as creation of temporary site compounds and temporary haul routes.	Adverse	Construction	Temporary	A Soils Management Plan would be implemented which would include the restoration of soils, subject to an agreement with the landowner. Landholders will be compensated for their losses in accordance with the compulsory purchase compensation code.	Detailed in the OEMP (document reference TR010036/APP/6.7) , to be implemented through the CEMP and SMP. Compulsory purchase compensation code.	Moderate Adverse
Chapter 13 Climate - no significant adverse or beneficial residual effects							
Chapter 14 Combined and Cumulative Effects - no significant adverse or beneficial residual effects							

Table 15.2: Summary of monitoring requirements

Receptor	Construction / operation	Description of monitoring requirements	Monitoring delivery mechanism
Chapter 5 Air Quality – No monitoring requirements due to no significant adverse or beneficial residual effects.			
Chapter 6 Cultural Heritage			
Buried archaeology	Construction	<ul style="list-style-type: none"> Regular inspections, temporary fencing and an exclusion area around the following heritage assets to protect archaeological remains: <ul style="list-style-type: none"> Camel Hill Scheduled Monument (MM43) The retained driveway earthworks in Hazlegrove House RPG (MM42) The Royal Observer Core (ROC) radio receiver station at Camel Hill (MM74) The northern and southern haul roads would also be subject to regular inspection, to ensure that remains are not exposed, and any which are exposed are correctly recorded and managed. 	CEMP
Chapter 7 Landscape			
Landscape and visual	Construction	<ul style="list-style-type: none"> An Environmental Clerk of Works or Site Environmental Manager should be appointed to ensure that objectives of the CEMP are upheld. The Environmental Clerk of Works or Site Environmental manager would be required to monitor construction activities that would cause likely significant effects including: <ul style="list-style-type: none"> The effectiveness and suitability of root protection fencing ensuring no impacts to trees that are to be retained. The areas of most concern are Hazlegrove RPG, residential receptors at Camel Hill, and Downhead, and highway vegetation along the southbound existing A303 adjacent to Sparkford. Working hours of operation of the main works and in site compounds which may produce visual, noise or lighting impacts in particular on West Camel settlement, residential properties at Howell Hill, Downhead and Camel Hill. The angle and direction of night time lighting, to ensure that it is not directly focussed on residential receptors in particular at Wayne's Bar and Bistro, Howell Hill, West Camel, Hazlegrove RPG and Downhead. 	CEMP
Landscape and visual	Operation	<ul style="list-style-type: none"> Environmental Clerk of Works or Site Environmental manager would be required to monitor construction activities that would cause likely significant effects including: <ul style="list-style-type: none"> The effectiveness and suitability of root protection fencing ensuring no impacts to trees that are to be retained. The areas of most concern are Hazlegrove RPG, residential receptors at Camel Hill, and Downhead, and highway vegetation along the southbound existing A303 adjacent to Sparkford. Working hours of operation of the main works and in site compounds which may produce visual, noise or lighting impacts in particular on West Camel settlement, residential properties at Howell Hill, Downhead and Camel Hill. The angle and direction of night time lighting, to ensure that it is not directly focussed on residential receptors in particular at Wayne's Bar and Bistro, Howell Hill, West Camel, Hazlegrove RPG and Downhead. Monitoring of long-term maintenance goals and requirements for the planting strategy to reach its full potential in line with the HEMP. 	HEMP
Chapter 8 Biodiversity			
<p>Note: The scheme is not anticipated to result in any residual effects once operational, and therefore no monitoring would be required, However, there are proposed monitoring requirements for protected species and habitats which would be detailed in the LEMP to assess whether the ecological receptors that would be subject to significant effects during construction have responded favourably to mitigation, and to inform ongoing habitat management.</p> <p>In addition, monitoring for Great Crested Newts (GCN) and badgers would be detailed within the European Protected Species Mitigation (EPSM) licence.</p>			
Hedgerows	Construction	<ul style="list-style-type: none"> Habitat replanting would ensure that they are replaced with species rich hedgerows. To ensure the success of these hedgerows and habitats replanted in general, mitigation planting areas would be maintained by Highways England for a period of 3 years from completion of the scheme. Audits would be carried out by a suitably qualified Landscape Architect to review the establishment and continued growth of new planting. This would be detailed within the LEMP, to be produced by the appointed Contractor. 	LEMP
Bats	Construction	<ul style="list-style-type: none"> Although there is no EPSM licence associated with the scheme, the scale and size of it means that best practice would recommend monitoring of the following: <ul style="list-style-type: none"> Annual monitoring of bat boxes and the bat house, recording use and evidence of use and submitting records to the local record centre, over a period of 3 years. Repeats of crossing point surveys at locations which were subject to severance as part of the final design over a period of 3 years post construction. Repeats of landscape scale transects over a period of 3 years post construction. 	LEMP
Barn owls	Construction	<ul style="list-style-type: none"> Annual monitoring of nest boxes and verge planting for at least 5 years post construction. Evidence of road kill to be assessed during these monitoring visits. Annual visits to be undertaken in July and August. 	LEMP
Chapter 9 Geology and Soils – No monitoring requirements due to no significant adverse or beneficial residual effects.			
Chapter 10 Materials Assets and Waste			
Landfills in Somerset	Construction	<ul style="list-style-type: none"> Waste audits should be undertaken throughout the construction phase. This would ensure that re-use and recycling targets are met on-site and would ensure that there is no surplus of materials. By conducting audits regularly this would give an indication of where continual improvements to waste management and minimisation can be made throughout the construction phase. The SWMP should also be used to measure and monitor the types and quantities of waste taken off-site, to ensure that the waste hierarchy is being implemented wherever possible. The MMP would also require a verification report to confirm that only the material identified suitable for use in the MMP was used and placed in accordance with that stated in the MMP. 	CEMP, SWMP and MMP
Chapter 11 – Noise and Vibration			
Residential properties	Construction	<ul style="list-style-type: none"> Routine noise and vibration monitoring would be carried out during construction works. 	CEMP
Chapter 12 People and Communities – No monitoring requirements.			
Chapter 13 Climate - No monitoring requirements due to no significant adverse or beneficial residual effects.			
Chapter 14 Combined and Cumulative Effects – No monitoring requirements due to no significant adverse or beneficial residual effects.			