Environmental Statement:
Non-technical summary

Planning Act 2008
Infrastructure Planning
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

<table>
<thead>
<tr>
<th>Section Number:</th>
<th>5(2)(a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author:</td>
<td>A30 Temple to Higher Carblake Improvement Team, Cornwall Council</td>
</tr>
<tr>
<td>Document Reference:</td>
<td>TRXCP311/PA/6.04</td>
</tr>
<tr>
<td>PI Reference</td>
<td>TR010014</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Document Date</th>
<th>Version</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>07 August 2013</td>
<td>0</td>
<td>First Issue</td>
</tr>
</tbody>
</table>
### Issue & Revision Record

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Author</th>
<th>Purpose of Issue / Nature of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>28/05/2013</td>
<td>DA</td>
<td>First Issue</td>
</tr>
</tbody>
</table>

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Cornwall Council being obtained. Cornwall Council accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person using or relying on the document for such other purposes agrees, and will by such use or reliance be taken to confirm his agreement to indemnify Cornwall Council for all loss or damage resulting therefrom. Cornwall Council accepts no responsibility or liability for this document to any party other than the person by whom it was commissioned.

Environmental Statement:
Non-Technical Summary
CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Technical Summary Glossary</td>
<td>1</td>
</tr>
<tr>
<td>1 INTRODUCTION</td>
<td>2</td>
</tr>
<tr>
<td>2 WHY IS THE SCHEME REQUIRED</td>
<td>4</td>
</tr>
<tr>
<td>3 DESCRIPTION OF SCHEME</td>
<td>6</td>
</tr>
<tr>
<td>4 CONSIDERATION OF ALTERNATIVES</td>
<td>7</td>
</tr>
<tr>
<td>5 APPROACH TO ASSESSMENT</td>
<td>8</td>
</tr>
<tr>
<td>6 TRAFFIC</td>
<td>9</td>
</tr>
<tr>
<td>7 ENVIRONMENTAL TOPICS</td>
<td>11</td>
</tr>
<tr>
<td>7.2 Air Quality and Climate</td>
<td>11</td>
</tr>
<tr>
<td>7.3 Cultural Heritage</td>
<td>12</td>
</tr>
<tr>
<td>7.4 Landscape Effects</td>
<td>14</td>
</tr>
<tr>
<td>7.5 Ecology and Nature Conservation</td>
<td>17</td>
</tr>
<tr>
<td>7.6 Geology and Soils</td>
<td>19</td>
</tr>
<tr>
<td>7.7 Materials</td>
<td>20</td>
</tr>
<tr>
<td>7.8 Noise</td>
<td>21</td>
</tr>
<tr>
<td>7.9 Effects on all Travellers</td>
<td>22</td>
</tr>
<tr>
<td>7.10 Community and Private Assets</td>
<td>22</td>
</tr>
<tr>
<td>7.11 Road Drainage and the Water Environment</td>
<td>23</td>
</tr>
<tr>
<td>7.12 Cumulative Effects</td>
<td>24</td>
</tr>
<tr>
<td>8 CONCLUSION</td>
<td>26</td>
</tr>
</tbody>
</table>

List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Scheme Context</td>
</tr>
<tr>
<td>2.1</td>
<td>Heavy Traffic Flows</td>
</tr>
<tr>
<td>7.1</td>
<td>Peverell’s Cross</td>
</tr>
<tr>
<td>7.2</td>
<td>Greenbarrow Downs</td>
</tr>
<tr>
<td>7.3</td>
<td>Agricultural Land Adjacent to the A30</td>
</tr>
<tr>
<td>7.4</td>
<td>Badmin Moor</td>
</tr>
<tr>
<td>7.5</td>
<td>Badger Pawprint</td>
</tr>
</tbody>
</table>

Environmental Statement:
Non-Technical Summary
7.6 Badger Sett
7.7 Dormouse
7.8 Female Adder
## NON TECHNICAL SUMMARY GLOSSARY

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AONB</td>
<td>Area of Outstanding Natural Beauty</td>
</tr>
<tr>
<td>CC</td>
<td>Cornwall Council</td>
</tr>
<tr>
<td>CEMP</td>
<td>Construction Environmental Management Plan</td>
</tr>
<tr>
<td>CTMP</td>
<td>Construction Traffic Management Plan</td>
</tr>
<tr>
<td>DCO</td>
<td>Development Consent Order</td>
</tr>
<tr>
<td>DMRB</td>
<td>Design Manual for Roads and Bridges</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>ES</td>
<td>Environmental Statement</td>
</tr>
<tr>
<td>HA</td>
<td>Highways Agency</td>
</tr>
<tr>
<td>HGV</td>
<td>Heavy Goods Vehicle</td>
</tr>
<tr>
<td>HLC</td>
<td>Historic Landscape Character</td>
</tr>
<tr>
<td>NMTs</td>
<td>Non-Motorised Travellers</td>
</tr>
<tr>
<td>NMUs</td>
<td>Non-Motorised Users</td>
</tr>
<tr>
<td>PRoW</td>
<td>Public Right of Way</td>
</tr>
<tr>
<td>SSSI</td>
<td>Site of Special Scientific Interest</td>
</tr>
<tr>
<td>SWMP</td>
<td>Site Waste Management Plan</td>
</tr>
<tr>
<td>SuDS</td>
<td>Sustainable Drainage System</td>
</tr>
<tr>
<td>ZVI</td>
<td>Zone of Visual Influence</td>
</tr>
</tbody>
</table>
INTRODUCTION

1.1.1 Cornwall Council (CC) is making an application for a Development Consent Order (DCO) from the Planning Inspectorate for the Improvement of the A30 between Temple Tor and Higher Carblake in Cornwall.

1.1.1 The proposal is to dual the existing single carriageway section of the A30 for a 4.5km distance between Temple and Higher Carblake (see Figure 1.1). The total length of the Scheme is 5.15km. The A30 between Exeter in Devon and Carland Cross in West Cornwall is of dual carriageway standard with the exception of this section of road which causes a constraint on the highway.

1.1.2 As part of the application, an Environmental Impact Assessment (EIA) has been carried out to understand the potential effects that the new road would have on the environment. Measures to avoid or reduce negative impacts have been included in the Scheme design where possible. The remaining positive and negative, impacts have been assessed.

1.1.3 The results of the assessment are presented in full in the Environmental Statement (ES) (Document Reference TRXCP311_PA_6.01), and are summarised in this Non-Technical Summary.
Environmental Statement:
Non-Technical Summary

Figure 1.1 Scheme Context
2 WHY IS THE SCHEME REQUIRED

2.1.1 The A30 is Cornwall’s most important traffic connection with the rest of the UK. For 140 km (85 miles) between the M5 at Exeter and the roundabout at Carland Cross (the A39 Truro turn off) the A30 is of dual carriageway standard, with the exception of 4.5km (2.8 miles) of single carriageway between Temple and Higher Carblake. Because of its function as the main trunk road into Mid and West Cornwall and to major tourist towns, particularly Newquay, at times the capacity of the single carriageway section forms a serious constraint on traffic flows on the A30. This has a detrimental effect on the Cornish economy and the often severe congestion (queues of over 14 km (9 miles) and delays of up to an hour) leads to poor journey time reliability, driver frustration, conflict and collisions. The poor network resilience also leads to inappropriate levels of traffic diverting off the A30 onto unsuitable minor roads, bringing intrusion to small settlements and villages along with attendant environmental and safety concerns. Over the expected periods of congestion many people in Cornwall avoid the A30 and the surrounding road network thereby affecting business and community activity in several surrounding villages and towns.

2.1.2 Figure 2.1 below shows heavy traffic flows and congestion on the existing A30 trunk road.

Figure 2.1 Heavy Traffic Flows on the A30

2.1.3 Recent improvements elsewhere on the A30, particularly those between Bodmin and Indian Queens, have led to higher
than forecast vehicles numbers, leading to further congestion of the single carriageway section.

2.1.4 The objective of the proposed improvement is to remove queues, congestion and delays relating to this section of the A30, as well as improving safety. In addressing these long standing issues the Scheme will help to support economic growth in Cornwall.
3 DESCRIPTION OF SCHEME

3.1.1 CC proposes to improve the existing single carriageway section of the A30 trunk road between Temple and Higher Carblake, bringing it up to dual carriageway standard.

3.1.2 The Scheme begins west of Higher Carblake and closely follows the existing road alignment to Temple Tor, which will dual 4.5km (2.8 miles) of single carriageway road, linking to the existing dual carriageway sections of the A30 at either end. The total length of the Scheme is 5.15km. The main route will widen the existing carriageway by approximately 13m. The new section of road will have a standard cross section with carriageways of 7.3m (each with two lanes of 3.65m), 1m hard strips either side, verges of 2.5m and a hard central reserve which is 2.5m wide. Safety barriers will be introduced to the central reserves, physically segregating the opposing vehicle flows.

3.1.3 To improve safety and accommodate the revised route, the Scheme proposes three new junctions, located at Cardinham Downs, Preeze Cross and Temple Tor. These will replace the existing crossings with three new overpass bridge structures and side roads.

3.1.4 The Scheme will also improve access to, or relocate existing private accesses which connect directly on to the A30.

3.1.5 Where existing Public Rights of Way (PRoW) abut or cross the existing A30 trunk road within the length of the Scheme, it is proposed that these will be adjusted to suit the new arrangements.

3.1.6 Traffic signage will be installed throughout the improvement in accordance with HA standards and national regulations to provide sufficient directional information to the travelling public.

3.1.7 The proposal seeks to introduce a Sustainable Drainage System (SuDS) which will cater for the increased hard surface being introduced, manage rainwater runoff and provide opportunities for improving water quality and biodiversity.
4 CONSIDERATION OF ALTERNATIVES

4.1.1 In 2003, the Scheme was subject to an environmental and technical review of seven route options in a number of workshops, to determine the potential impacts on the environment of each option. After public consultation in 2005, a preferred route was identified.

4.1.2 This scheme was not progressed further. In 2010, CC reviewed the original design and developed a range of alternative options. The current Scheme has been developed from the best of these options which was the Value Engineered Dual Carriageway Route.

4.1.3 Significant cost savings were achieved by utilising the existing carriageway corridor and highway boundary where possible, the use of compact junctions throughout and closure of existing sub standard at grade junctions, optimised earthworks, reduced offline works and an overall reduction in the length of improvement works.

4.1.4 During 2011 and 2012 informal consultations took place and the feedback received informed the developing design. Two stages of formal pre-application public consultation were undertaken. Once identification and categorisation of the feedback from each stage of consultation was complete, consideration of the responses was given to see how that feedback might influence the development of the scheme options. The Public consultation resulted in a number of changes to the schemes, which are detailed in the ES.

4.1.5 The subsequent option development and assessment has identified the Scheme as being the best value for money and having the least environmental impact, as a result this is the proposal that is being put forward for approval.
5 APPROACH TO ASSESSMENT

5.1.1 The proposed Scheme is classified as a ‘Nationally Significant Infrastructure Project’ and therefore CC has submitted an application for a DCO for the Scheme under the Planning Act 2008. DCO applications are determined by the Planning Inspectorate on behalf of the Secretary of State.

5.1.2 The Scheme also requires an EIA under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 as amended (the ‘EIA Regulations’). The A30 Temple to Higher Carblake improvement falls under Schedules 2 and 3 of the Regulations, which requires EIA for projects over 1ha, where there are likely to be significant effects due to the characteristics of the development, location of development and characteristics of the potential impact.

5.1.3 A ‘Scoping Report’ was submitted to the Secretary of State in January 2013 and was subject to consultation. The Scoping Report normally allows the ‘scoping out’ of environmental topics where little or no change to the existing situation will occur, thus leading to the preparation of a concise ES. However, in this instance CC did not seek to scope out any of the topics required, only specific matters within each topic. In response to the Report, a Scoping Opinion was received from the Planning Inspectorate setting out what information should be included in the EIA, or scoped out. The Planning Inspectorate agreed that an assessment of air quality impacts on Bodmin Air Quality Management Area, and also potential impacts on minerals extraction activities could be scoped out.

5.1.4 EIA is a systematic process that identifies, predicts and evaluates the likely impacts of a development on the environment. The EIA has been undertaken in accordance with the guidance presented in Volume 11 of the Department for Transport’s Design Manual for Roads and Bridges. This sets out the adopted methods for road projects which should be followed, both for EIA in general and for individual environmental topics. The chapters of the Environmental Statement set out in detail for each relevant topic area the detailed methodology employed.
6 TRAFFIC

6.1.1 A full Transport Assessment (TA) has been prepared in accordance with Department for Transport guidance. The TA assesses the impact of the Scheme on traffic and the performance of the Scheme against the existing arrangement. The TA assesses the impact of the Scheme by modelling the difference between the Base Year (2011) without the Scheme, and future scenarios (2017 and 2032) with or without the Scheme.

6.1.2 The TA confirms that there is a significant issue in this location with severe traffic problems over long periods throughout the year. In 2011, this section of the A30 experiences a highly seasonal flow profile, with an average 2-way daily flow of around 19,700 vehicles per day in neutral month weekdays compared to over 26,000 vehicles in August.

6.1.3 The existing flows on the A30 have been examined to determine how often the road is operating at conditions where two-way flows exceed 85% of the 2600 vehicle capacity, which is the maximum sustainable hourly throughput of the link. Above this level, congestion becomes severe.

6.1.4 Traffic flows already exceed 85% of the capacity during the summer weekend in 2011 and is close to this in the summer weekdays. By 2017 traffic levels are predicted to exceed the 85% capacity during the summer months both during weekdays and weekends and by 2032 the route will consistently be exceeding the 85% capacity on an average weekday and will deteriorate further during the summer months leading to severe congestion throughout the year.

6.1.5 With the Scheme in place the theoretical capacity increases dramatically to 8,400 veh/hr (2-way) resulting in the provision of spare capacity even during the summer weekend peak in 2032.

6.1.6 Journey times along the route are also expected to improve significantly with the proposed Scheme in place. The TA projects that the average journey time between Indian Queens and Kennard’s House will decrease by 4-7 mins (per vehicle) in each direction during a neutral weekday peak.
Anticipated journey times during the summer weekday would see a saving of 6-8 mins if this section were to be dualled.

6.1.7 It is during the summer peak that the main journey time saving is made as a result of the Scheme. By 2032, without the benefit of the Scheme, journey times are likely to increase to approximately 53 mins (per vehicle) eastbound and to approximately 77 minutes westbound with no scheme in place. However, with the Scheme in place a journey time saving of 21 mins eastbound and 33 mins westbound will be made.

6.1.8 Improving this section of the A30, bringing it up to dual carriageway standards with improved alignment, grade separated junctions and a central barrier, is also predicted to significantly reduce the frequency and severity of accidents.

6.1.9 The Scheme will therefore improve journey time reliability, resilience, reduce congestion and accidents. This in turn will remove a significant constraint to Cornwall’s economic prosperity and encourage inward investment within Cornwall.

6.1.10 Failure to implement the Scheme will lead to further increases in congestion, accidents, journey times and the perception of the peripherally of Cornwall. This will work against wider national and local objectives to support the economy and growth.
7 ENVIRONMENTAL TOPICS

7.1.1 The following sections provide a summary of the key environmental impacts of the proposed A30 Improvements and the recommended mitigation to help neutralise these impacts.

7.2 Air Quality and Climate

7.2.1 Air quality along the A30 is currently good with no major sources of air pollutants other than vehicular traffic.

7.2.2 There are a number of residential properties located within 50m of the Scheme which may be affected by an increase in dust and traffic emissions on the local road network. Bodmin Moor, North SSSI lies north of the A30 and the habitats may be sensitive to dust and traffic emissions, particularly nitrogen deposition and nitrogen oxides. The impact on these existing features has been assessed.

7.2.3 The proposed Scheme has the potential to affect local air quality during both the construction and operational phases as a result of:

- Dust from construction activities e.g. site clearance, stockpiling, materials transport; and

- Once the Scheme is complete, changes in emissions from vehicles on the local road network due to changes in vehicle flows and types of vehicle.

7.2.4 Given the volume of earthworks, the risk of dust was assessed as being high, although this would be reduced using a number of mitigation measures during construction, including dust dampening and construction vehicle speed restrictions. The proposed measures are set out in the Environmental Statement in Section 6.7.

7.2.5 At residences alongside the A30, the combined impact of the realignment of the carriageway away from properties and the reduction in queuing traffic results in a beneficial change in roadside pollution levels. The change is generally small to imperceptible. Outside of the Scheme, concentrations increase slightly with increased traffic levels but total pollutant concentrations remain well within Government objectives for
air quality.

7.2.6 Within 10m-15m of the road there would be an increase in air pollution affecting Bodmin Moor, North SSSI, although this is very small compared to existing levels (<1.5% change) and effects were assessed as negligible. At greater distance from the roadside, the effects of a reduction in queuing traffic result in a slight to imperceptible decrease in pollution concentrations. Outside of the Scheme, the increase in traffic levels dominates and a slight to imperceptible increase in concentration results.

7.3 Cultural Heritage

7.3.1 The cultural heritage resources examined in the ES include archaeological remains, historic buildings and the historic landscape.

7.3.2 The Historic Landscape Character of the Temple-Higher area reflects historic processes, and similarly a range of archaeological sites and historic features associated with each ‘Type’. The main historic landscape ‘types’ are:

- ‘Communications’ - The A30 is a historical route, and was previously the Bodmin-Launceston highway. There are a number of remains dating from the 12th, 18th and 19th centuries, these include wayside crosses (probably early medieval) and original sections of the road probably developed in the turnpike era from the 18th century.

- ‘Medieval Farmland’ extends over almost all the ground on the west half of the Scheme, which forms part of Cornwall’s agricultural heartland. Buried archaeological features from the prehistoric, medieval and post-medieval periods, can be expected virtually anywhere within these lands.

- ‘Upland Rough Ground' predominates over the east half of the Scheme. A variety of archaeological sites and landscapes, including rare features dating from the Bronze Age, can be found here.

7.3.3 In terms of individual archaeological features there are approximately 118 known or possible sites within 20m of the
Scheme dating from Neolithic, Early-Mid Bronze age, Roman and Medieval periods.

7.3.4 The medieval Peverell’s Cross (Figure 7.1) is a designated Scheduled Monument and there are two Grade II Listed milestones along the route. Further afield, there are several important sites which have views of the A30, including a number of prehistoric barrows which are Scheduled Monuments (e.g. Council Barrow, Greenbarrow Downs (see Figure 7.2)), and listed buildings (e.g. at Trewardale, Praze Trethorne and Temple). The assessment considered the impact on the setting of a number of designated and undesignated sites and the text here is not exhaustive.

Figure 7.1 Peverell’s Cross

Figure 7.2 Greenbarrow Downs
7.3.5 The effect on cultural heritage assets have been mitigated as far as possible through the design of the Scheme as the minimal land take has meant fewer assets would be affected than other route options. The alignment and topography of the Scheme has reduced landscape impacts as the route closely follows that of the existing A30. A number of further mitigation measures have been agreed, which will be undertaken prior to and during construction, including archaeological excavation and recording of finds.

7.3.6 The EIA determines that the overall magnitude of change to cultural heritage assets resulting from the Scheme is considered to be limited. This is because the Scheme as a whole, through adaptation of the existing A30, minimises impact on the ‘Upland Rough Ground’.

7.3.7 The ES and archaeological assessment indicates that, overall, the Scheme would have a potential Moderate adverse direct impact on the cultural resource, along its route. It is expected that the potential effect on the known and potential undetected sites, can be reduced to Slight adverse through the development of an agreed programme of recording findings and other mitigation measures. Due to the overbridge at Temple Tor Junction, the assessment indicates a Moderate adverse effect on the setting of designated and equivalent value heritage assets, including prehistoric barrows, located around the road corridor.

7.4 Landscape Effects

7.4.1 The construction and operation of the Scheme would result in changes to the landscape or the existing views of the A30. The assessment established a Zone of Visual Influence (ZVI) as a study area. The ZVI is the area of land from which there could be a view of any part of the proposed project including bridges, embankments and traffic (up to 4m for HGVs). Within this area there are a number of landscapes and visual receptors (e.g. viewpoints, public footpaths, residences, commercial properties).

7.4.2 The landscape of the study area is characterised by gently rolling enclosed farmland (see Figure 7.3) drained by occasional streams between the airfield junction at Cardinham
Downs and the Pound’s Conce / Peverell’s Cross section of the route and by open unenclosed moorland on Bodmin Moor.

7.4.3 A large part of the study area is within the Bodmin Moor (see Figure 7.4) part of the Cornwall AONB which is a landscape of national importance for its landscape quality. This is a somewhat remote and hostile landscape that is generally open moorland with scattered settlements. It has considerable scenic quality.

7.4.4 The Camel and Allen Valley to the north and west of Bodmin is designated as an Area of Great Landscape Value. It is an attractive rolling pastoral landscape enclosed by traditional Cornish hedges, which is drained by streams within a number of steeply incised valleys. Another Area of Great Landscape Value, the Mid-Fowey, lies to the south west of Bodmin Moor, the River Fowey tributary valleys run from the southern edge of the moor. The valley sides are steep with a mixture of oak and coniferous plantations enclosing views out.

Figure 7.3 Showing Agricultural Land near the A30 in the southern part of the study area.
7.4.5 The construction of the Scheme would generate a combination of impacts on landscape and visual amenity which would result in some significant effects.

7.4.6 The dualling of the road will be mainly within the existing road corridor and this part of the Scheme would not result in significant adverse effects on landscape or visual amenity by Year 15. The adverse landscape and visual effects resulting from the creation of the new grade separated junction at Cardinham Downs would diminish over time as new planting becomes established. Adverse effects of the new grade separated junction at Temple Tor on Bodmin Moor, landscape character and visual amenity would reduce over time as a result of the re-establishment of moorland grassland and scrub mosaic.

7.4.7 The adverse landscape and visual impacts would be mitigated by measures which include the siting and detailed design of crossings, planting and natural regeneration to integrate the Scheme as far as possible into the local landscape character. New woodland and scrub planting would help integrate the Scheme into the landscape setting of the Camel and Allen Valley. Re-establishment of local vegetation from the seed
bank would help blend the Scheme into the surrounding heath and open moorland of Bodmin Moor. Overall effects on landscape reduce from Moderate adverse at Construction and Year 1 to Slight adverse by Year 15.

7.4.8 Overall effects on visual amenity would reduce from large/moderate adverse effects at construction to slight adverse or neutral once mitigation has been implemented and established.

7.5 **Ecology and Nature Conservation**

7.5.1 There are 11 environmentally designated sites within a 10km radius of the study area (as described by the methodology set out in chapter 9 of the ES). The designated sites that are located closest include: Bodmin Moor, North Site of Scientific Interest (adjacent to site); Hawkstor Pit Site of Scientific Interest (1.46km from site); and River Camel Special Area of Conservation (1.89km from site).

7.5.2 Surveys confirmed the presence of badgers, common dormouse, breeding birds, bats, reptiles and the potential habitat to support otters.

*Figure 7.5* Badger Pawprint  
*Figure 7.6* Badger Sett
7.5.3 The impacts of the Scheme on ecology are largely related to the construction phase, during which approximately 12ha of agricultural land will be lost to accommodate the Scheme. This would cause initial low level habitat loss and severance of habitat for the wide range of species that currently use the area. There is also the potential for the Scheme to result in an increased mortality rate for a few species.

7.5.4 Operational impacts are largely related to increased collisions rates and fragmentation of habitat, which is likely to have an adverse impact of population levels. A range of mitigation measures are set out in the ES and include:

- **Otters**: Installation of two box culverts, and a 900mm diameter pipe in conjunction with otter fencing to encourage otters to cross to carriageway at this point;

- **Bats**: Box culverts will be created providing a suitable location for bats to cross the carriageway. In addition, planting (including the construction of Cornish hedges) will aim to connect the integral road bridges with the areas of surrounding bat habitat in the local area. In addition, 30 bat boxes will be erected on trees on each side of the carriageway (total 60 boxes)

These measures will reduce the residual effects so that they are significant at no more than a local level.

7.5.5 The proposed mitigation measures for the construction phase are as follows:

- There will be no storage of potentially contaminating materials in areas of ecological / hydrological sensitivity

- Work compounds and access tracks etc will not be located in, or adjacent to, areas that maintain habitat value;

- Site fencing will be used to prevent access to areas outside working areas, particularly in areas adjacent to features of ecological value;
• Procedures will be implemented to address site safety issues, including storage of potentially dangerous materials;
• Briefings and instruction would be given to contractors regarding the biodiversity issues associated with the site; and
• Pollution prevention guidelines provided by the Environment Agency (including but not limited to PPG01, PPG02, PPG03, PPG05 and PPG06) would be followed to prevent pollution of water courses by silt or chemicals.

These measures will be secured by the requirements of the DCO and will require compliance with the Construction Environmental Management Plant (CEMP).

7.5.6 Given the nature of the Scheme, repeat surveys and monitoring are proposed to ensure the mitigation measures prescribed remain relevant and proportionate to a changing baseline.

7.6 Geology and Soils

7.6.1 This section of the ES examines the potential environmental effects on geology and soils and also contamination impacts. However, contaminated ground has not been identified and no significant effects are anticipated during the construction or operational phases of the Scheme. There are no geological or geomorphological features of importance within the study area and, therefore, no potential adverse or beneficial impacts to these attributes.

7.6.2 Land take during the construction phase of the Scheme will result in a neutral or slight adverse effect to agricultural land (soils) during the construction phase.

7.6.3 The level of construction for dualling a road has the potential to use large amounts of raw materials and generate quantities of waste. However, the Scheme has been designed to use as much of the existing carriageway as possible. This reduces the requirement for imported materials and minimises the waste produced.
7.6.4 As much of the material (e.g. soils, aggregate etc) as possible will be specified to be re-used on-site. Where this is not possible, recycling at local facilities will be considered before disposal in landfill is considered. A preliminary Site Waste Management Plan has been prepared for the Scheme, and will be prepared for subsequent phases as the Scheme progresses through planning. The Site Waste Management Plan aims to ensure that the waste produced during the construction phase, in addition to other phases of the Scheme, is dealt with in accordance with best practice.

7.6.5 The design and construction mitigation measures outlined will mean that the Scheme will align with accepted industry good practice and no significant effects are predicted.

7.7 Materials

7.7.1 Construction activities associated with dualling a road have the potential to use large amounts of raw materials and generate substantial quantities of waste. The consumption of material resources and the disposal or recycling of waste give rise to environmental impacts that need to be managed and mitigated.

7.7.2 The bulk of the material requirements are for the earthworks. It is currently estimated that approximately 85,000t of sub-soil, sub-base and granular capping material would need to be supplied from quarry sources, with a further 30,000t being provided by on-site sources or re-used from stores at County depots. The significance of the effect is assessed as Minor Adverse. Other materials will be used for new signage, fences and barriers. The significance of the effect is Minor Adverse.

7.7.3 It will be possible to re-use some materials on site, including top-soil, sub-soil, stone and gateposts. In addition, several materials will be re-used from other sites or come from recycled sources. These include concrete, traffic signs and some steel posts. These effects are assessed as minor positive.

7.7.4 It is predicted that up to 30,000t of material will go to landfill. The majority of this will be unsuitable material such as concrete, sub-soil, drainage arisings and vegetative material. Other waste includes vegetation and municipal waste.
7.7.5 As the Scheme is in an early stage in terms of resource use and estimation of waste generated, there are opportunities to improve the results of this assessment, principally by increasing re-use of material on-site, the recycled content of materials used and re-using or recycling waste materials.

7.8 Noise

7.8.1 The existing noise climate at local properties is dominated by the existing A30. The dualling of this section of the A30 has the potential to affect the noise and vibration levels experienced by nearby residents due to changes in alignment, as well as associated changes in the speed and volume of vehicular traffic along existing and altered sections of road.

7.8.2 Noise and vibration from construction works would also have the potential to impact upon local residents. Indicative noise levels associated with the construction have been predicted at the closest residential receptors to the proposed Scheme. A worst-case scenario has been assumed with all construction work taking place at the closest approach to the receptor.

7.8.3 In order to reduce noise levels during the construction phase of the proposed Scheme, measures to reduce noise levels at receptors will include the use of screening and limiting the use of the noisiest equipment to short periods.

7.8.4 The incorporation of the mitigation measures during construction will offer sufficient noise reductions to ensure that activities are only likely to have a minor impact at the closest receptors. The exceptions to this are Pounds Conce, Greenbarrow and properties at Preeze Cross junction, which are less than 20m from the A30.

7.8.5 During operation, the proposed Scheme is not predicted to result in significant changes in traffic volumes. In addition, low noise surfacing will be used along the length of the Scheme, ensure that the majority of dwellings within the study area will experience a decrease in road traffic noise levels, and therefore the effect of the Scheme on noise is expected to be Negligible to Moderate Beneficial. At those dwellings where an increase in noise level is predicted, the significance of this effect is Negligible.
7.9 Effects on all Travellers

7.9.1 This section covers the impact that the proposed Scheme may have on Motorised Travellers (drivers and passengers of both public and private vehicles) and Non-Motorised Users (pedestrians, cyclists and equestrians).

7.9.2 Construction activities associated with the proposed Scheme are expected to have an adverse impact on both Motorised Travellers and Non Motorised Users, both in terms of their experience of the landscape and in terms of the impacts on their access and movement. However, where possible these impacts will be mitigated through traffic management and other measures set out in the CTMP and CEMP.

7.9.3 Several existing Public Rights of Way (PRoW) abut or cross the existing A30 trunk road within the length of the Scheme. These will be adjusted to suit the new arrangements. The minor roads which connect to the A30 will also be diverted, and incorporated into either new, safer junctions, or overpass bridges. The proposed Scheme will ensure safe passage for Non Motorised Users and Motorised Travellers passing from one side of the A30 to another (either on PRoWs or on minor roads). This will also provide better connections between the communities either side of the route, and improve the experience of Non Motorised Users using the PRoWs and minor roads.

7.9.3.1 The primary benefit of the proposed Scheme for travellers is expected to be to the experience of Motorised Travellers using the route, reducing the high levels of driver stress experienced due to delays on the route, particularly at peak times, such as during the summer holidays. However, it is also expected that the proposed landscaping and structures required to support the proposed Scheme will have a adverse effect on Motorised Travellers views from the road.

7.10 Community and Private Assets
7.10.1 The area surrounding the proposed Scheme is sparsely populated, and there are no large villages or hamlets within 1km. The route is bordered on either side by 18 residential dwellings and two fuel stations, a garage and a commercial fishery. Some of these properties lie immediately adjacent to the existing A30 and thus to the proposed route. However, the Scheme footprint does not incorporate any residential or commercial property.

7.10.2 The proposed Scheme does not include any land allocated for development or with an existing planning permission. The Scheme will result in the temporary and permanent loss of agricultural land. However, the majority of the agricultural land is expected to be of either low value or peripheral to existing field units.

7.10.3 There are no allotments, playgrounds, sports pitches, or formal open spaces within the study area. The proposed Scheme will also involve permanent Common Land take, however, this impact will be mitigated through the provision of an equal, or larger area of replacement land of a similar quality. The areas of replacement land will be located adjacent to the Common Land parcel affected.

7.10.4 The permanent land take required for the Scheme will result in the permanent loss of approximately 12ha of agricultural land, but the majority of the agricultural land is expected to be of either low value, or peripheral to existing field units, and therefore of less utility value. Ultimately agricultural land is a finite resource, so it is not possible to mitigate its loss. As the severed fields will be required to facilitate junction construction it will not be possible to reduce the significance of this impact through mitigation.

7.10.5 The proposed Scheme will also have a beneficial effect on Community Severance. The proposed overpass bridges will serve to reduce severance between communities, services and facilities located either side of the road.

7.11 Road Drainage and the Water Environment

7.11.1 The assessment considers potential impacts the proposed Scheme would have on the water environment. The existing highway lies on the boundary of two main river catchments,
the River Camel to the north and the Fowey River to the south. The road currently drains, either via road gullies or over the verge into minor tributaries of Cardinham Water and Warleggan River or via infiltration to groundwater. This system does not provide pollution or flood control. Sensitive features of the water environment include the Temple Fishery, private water supplies, designated fisheries, the South West Water Reservoir and The River Camel Special Area of Conservation.

7.11.2 The proposed drainage strategy for the route would mean that rainfall, containing pollutants from spillage or routine run-off, will be collected by traditional gullies, pipes, filter drainage and v channels, then passed through one of three drainage ponds before being discharged via separators at a rate which is equivalent to greenfield run-off. This will provide an opportunity for particular settlement and water quality improvement before discharge. The implementation of best practice measures during construction in line with the requirements attached to the DCO and delivered in accordance with the CEMP would minimise pollution.

7.11.3 During construction there would be a slight adverse effect on surface watercourses from suspended sediments.

7.11.4 Due to road design, no significant adverse effects were identified during operation of the Scheme. Effects on surface and groundwater quality from routine run-off, infiltration and accidental spillage were assessed as neutral or possibly beneficial. Effects on watercourse channels due to minor works were assessed as neutral. Flood risk was also assessed as neutral.

7.12 Cumulative Effects

7.12.1 Cumulative impacts can either arise:

- from a single project where the impact arises from the combined action of a number of different impacts upon a single resource / receptor; and/or
- from the combined action of a number of projects – where a number of different impacts upon a single resource / receptor.
7.12.2 A search of planning applications and consultation with Cornwall Council’s Planning Officer found that there were no other projects which would give rise to cumulative effects with the A30 Temple to Higher Carblake Improvement. Therefore, the assessment of cumulative effects was limited to the combined impacts of the Scheme on a single resource/receptor.

7.12.3 During construction minor adverse cumulative effects were identified on local residents and recreational users arising from presence of construction activity due to changes to the landscape, setting of heritage assets, reduced access, traffic, noise and dust. In some cases, loss of agricultural land will also be experienced as an adverse effect. Effects on ecological receptors from sources of disturbance described above, in addition to habitat fragmentation and danger or mortality were assessed as not significant.

7.12.4 During operation, cumulative effects are expected to reduce over time as traffic flows on the A30 improve, landscaping becomes established, and residences become acclimatised to some of the changes. However, minor adverse cumulative effects remain for local residences. Cumulative effects on recreational users and ecological receptors were assessed as not significant during operation.
8 CONCLUSION

8.1.1 The key beneficial residual effect of the Scheme will be to remove the constraint that the existing single carriageway arrangement and associated traffic congestion issues place on Cornwall’s economic prosperity. Without the Scheme, journey times along this section of the A30 are expected to be substantially longer, particularly west bound and during the summer months. The Scheme will improve journey time, resilience and will reduce congestion on this section of the A30. The improvements to the alignment, grade separated junctions and central barrier are also predicted to significantly reduce the occurrence of accidents.

8.1.2 Below is a summary of the residual environmental impacts associated with the Scheme:

- a negligible adverse effect on Air Quality is expected due to increases in traffic volumes. However, air quality in the vicinity of the Scheme is good, and is expected to remain within local air quality objectives;

- adverse effects on Cultural Heritage assets have been minimised, as the Scheme is predominantly on line with the existing carriageway. However, it is expected that there will be moderate adverse effects on Cultural Heritage assets and archaeology, particularly due to the impact on the setting of these assets;

- the impact on landscape character and visual effects will be reduced neutral and slight adverse respectively once landscaping associated with the Scheme becomes established;

- adverse effects on Ecology and Nature Conservation are expected as a result of habitat loss, severance and due to increased collision rates. However, a range of mitigation is proposed, and it is expected to ensured that the residual impact on habitats and species is significant at no more than a local level;

- as the Scheme is online with the existing carriageway the impact on Geology and Soils, particularly on soils associated with agricultural land take, are expected to be
neutral or slight adverse. No existing contamination, or residual adverse effects on contamination are expected;

- the Scheme is expected to require substantial quantities of material and generate large quantities of waste resulting in a minor adverse effect on Materials. However, where possible the impact will be limited through recycling and reused of waste materials on site;

- the Noise impact on existing dwellings and businesses has been assessed, and the majority are expected to experience a negligible to moderate beneficial effect associated with the Scheme due to the quieter road surfacing to be used. Even at those dwellings where an increase in noise levels are predicted, the significance of this effect is negligible;

- adverse impact on Motorised Travellers and Non Motorised Users are expected during Construction due to traffic management and diversions. However, during operation there will be significant beneficial effects to all users due to improvements to access, journey times, and safety;

- there will be adverse effects associated with agricultural, and Common Land take. However, the agricultural land required to enable the Scheme is of lower value, and the loss of Common Land will be mitigated by replacement land to be provided elsewhere. There will be a beneficial effect on the severance of communities, and upon their access to services and facilities;

- a slight adverse effect on the water environment is expected to arise during construction. However, no significant adverse effects are expected during operation due to a range of proposed mitigation and enhancement measures.