highways england

European Union
European Regional Development Fund

# A30 Chiverton to Carland Cross
## Environmental Statement

## Volume 6 Document Ref 6.4 ES Appendix 16.1 Outline CEMP Annexes

**HA551502-ARP-EGN-SW-RP-LE-000013**

**C01 | A3**

**22/08/18**

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended)
APFP Regulation 5(2)(a)

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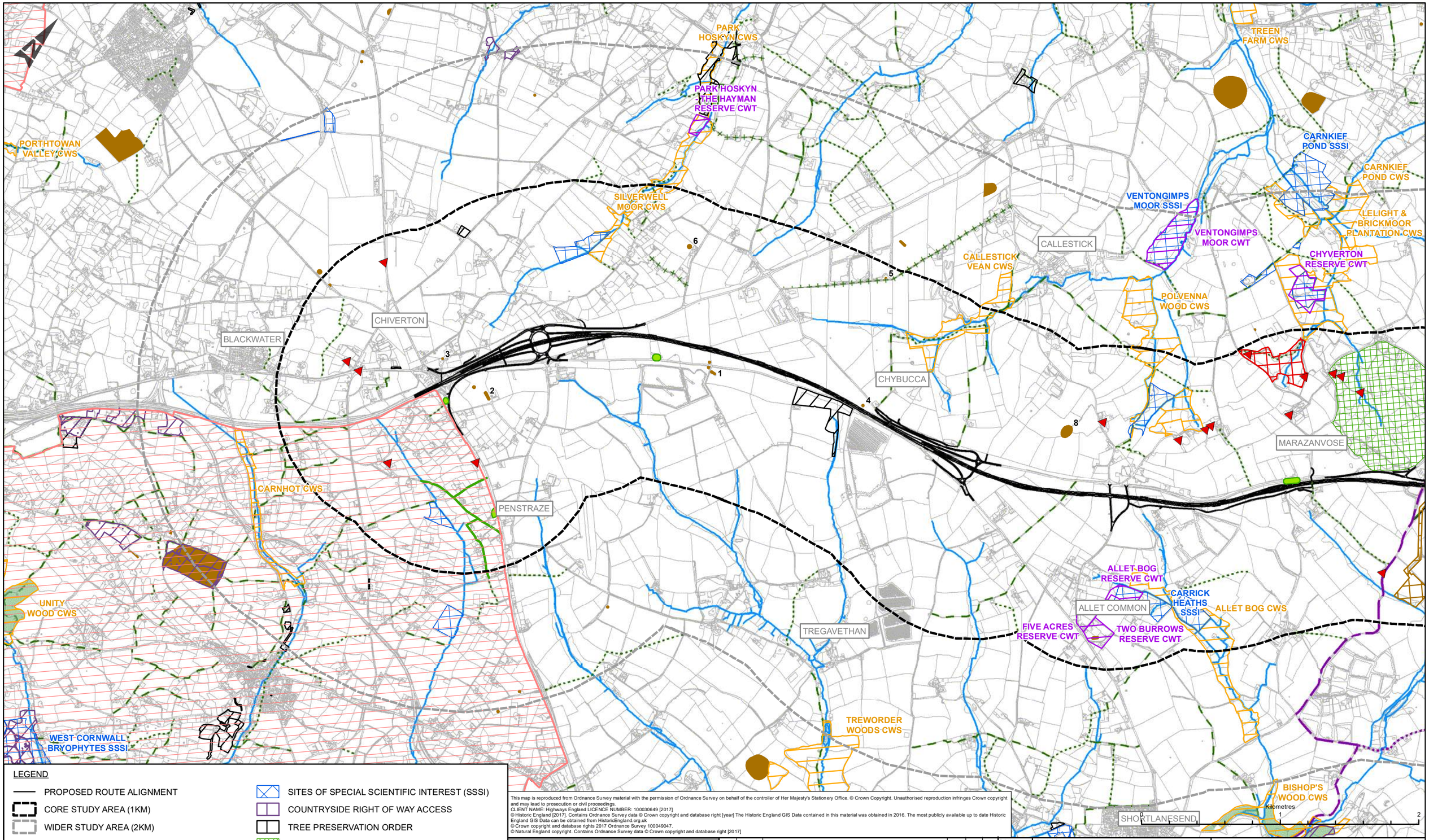
# Annex A: Constraints Map




LEGEND

- PROPOSED ROUTE ALIGNMENT
- CORE STUDY AREA (1KM)
- WIDER STUDY AREA (2KM)
- NATIONAL CYCLE NETWORK LINK 32
- NATIONAL CYCLE NETWORK ROUTE 32
- BYWAY OPEN TO ALL TRAFFIC
- BRIDLEWAY
- FOOTPATH
- RIVER
- DEFINITIVE MAP MODIFICATION ORDERS
- LISTED BUILDING
- WORLD HERITAGE SITE
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- COUNTRYSIDE RIGHT OF WAY ACCESS
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- REGISTERED PARK AND GARDEN
- CORNWALL WILDLFIE TRUST RESERVE
- COUNTY WILDLIFE SITE
- SCHEDULED MONUMENT
- AUTHORISED LANDFILL SITES
- HISTORIC LANDFILL SITE
- NOISE IMPORTANT AREA
- ANCIENT WOODLAND



**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made in the design hazard log)

**Construction**
NONE

**Maintenance / Cleaning**
NONE

**Use**
NONE

**Decommission / Demolition**
NONE

| Rev | Date | Description | By | Chk'd | App'd |
|---|---|---|---|---|---|
| C02 | 22/08/18 | FIRST ISSUE | AH | AM | JP |

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Drawing Status: STAGE COMPLETED
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Project Title: A30 CHIVERTON TO CARLAND CROSS

Drawing Title: ANNEX A
ENVIRONMENTAL CONSTRAINTS PLAN
SHEET 1 OF 2

| Scale | Designed / Drawn | Checked | Approved | Authorised |
|---|---|---|---|---|
| 1:25,000 | AH | AM | JP | IM |

| Original Size | Date | Date | Date | Date |
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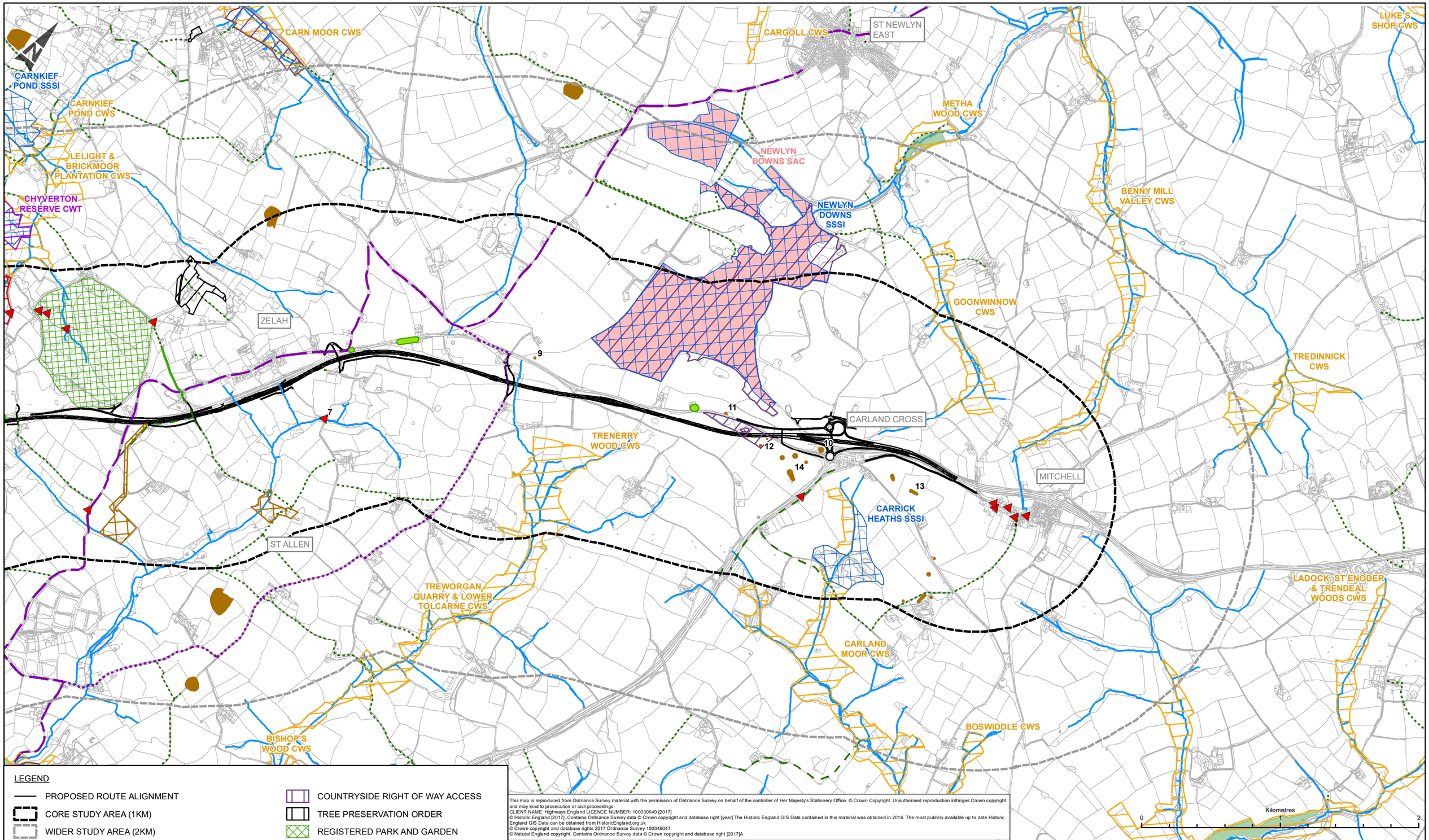
Location | Type | Role | Number

Revison: C02




LEGEND

- PROPOSED ROUTE ALIGNMENT
- CORE STUDY AREA (1KM)
- WIDER STUDY AREA (2KM)
- NATIONAL CYCLE NETWORK LINK 32
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- COUNTY WILDLIFE SITE
- SCHEDULED MONUMENT
- AUTHORISED LANDFILL SITES
- HISTORIC LANDFILL SITE
- SPECIAL AREA OF CONSERVATION
- NOISE IMPORTANT AREA
- ANCIENT WOODLAND



## SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made in the design hazard log)

**Construction**
NONE

**Maintenance / Cleaning**
NONE

**Use**
NONE

**Decommission / Demolition**
NONE

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Project Title: A30 CHIVERTON TO CARLAND CROSS

Drawing Title: ANNEX A
ENVIRONMENTAL CONSTRAINTS PLAN
SHEET 2 OF 2

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| 1:25,000 | AH | AM | JP | IM |

| Original Size | Date | Date | Date | Date |
|---|---|---|---|---|
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(Project | Originator | Volume | Location | Type | Role | Number)

Revison: C01

# Annex B: Outline Site Waste Management Plan

# 1 Introduction

## 1.1 Purpose

1.1.1 The purpose of the Outline Site Waste Management Plan (SWMP) is to set out proposals for the identification, segregation, handling and storage of different types of wastes identified as arising from the works. These wastes (by quantity/type/chemical composition/EWC code, etc.) will be recorded and their disposal route, including the place of their final disposal shall be reported in the Construction Environmental Management Plan.

1.1.2 The aim of using a SWMP is to minimise the amount of waste produced due to activities as a result of the project, minimising environmental impacts and maximising cost savings. The Client and Contractor as named in this document shall take all reasonable steps to ensure all waste from this site shall be dealt with in accordance with the waste duty of care in section 34 of the Environmental Protection (Duty of Care Regulations 1991 (b) and materials will be handled efficiently and waste managed appropriately.

## 1.2 Structure and Scope of the Outline Site Waste Management Plan

1.2.1 This Outline SWMP has been prepared during the outline design and environmental assessment period, in preparation of the Development Consent Order submission. Detailed information on the waste arisings is not yet available. This information would become available during the detailed design stage upon appointment of the contractor.

1.2.2 The Outline SWMP considers the type and volume of waste that is likely to be generated from the construction of the new A30 from Chiverton to Carland Cross. In particular, it sets out:

- The waste regulation framework;
- The types of waste that would be generated;
- How the waste would be managed;
- The waste management facilities available; and
- The methods used to measure and record the quantity of waste generated from the construction of the new road.

1.2.3 The SWMP is a ‘live’ document that will be reviewed and updated to incorporate the detailed waste information.

## 1.3 Responsibilities

1.3.1 The key roles and associated responsibilities with regard to this plan are outlined below.

1.3.2 Highways England will be responsible for the following:

- appointing the Contractors for the purpose of the SWMP;
- ensuring that the SWMP is implemented effectively; and

- reviewing, revising and refining the SWMP (where necessary) in conjunction with the Contractor.

1.3.3 The Contractor has the overall responsibility for:

- updating and delivering this SWMP on behalf of the client;
- ensuring all procedures in this SWMP and followed;
- ensuring all contractors are suitably qualified and experienced in implementing the measures within this SWMP. These measures would be contained within the terms of contracts to ensure understanding and accountability;
- making and maintaining arrangements that enable those engaged in construction and demolition to co-operate effectively in promoting measures to manage waste in accordance with the terms of the SWMP;
- ensuring, so far as is reasonably practicable, that waste produced during construction is re-used, recycled or recovered;
- regularly reviewing (every three months as a minimum) the SWMP and update where necessary;
- reporting on the performance of the SWMP within three months of the work being completed (see Section 6.3);
- establishing procedures for the regular review and recording of the quality of the works as part of it Quality Management System; and
- maintaining records relevant to this SWMP.

**Table 1-1 Responsibilities details**

| Name | Position/Responsibility | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Principle contractor Environmental manager | |
| | Site manager | |
| | SHE manager | |

# 2 Regulatory Framework

## 2.1 Definition of Waste

2.1.1 For the purpose of this document, the definition of "waste" is taken from Article 3(1) of the revised European Waste Framework Directive (WFD) (2008/98/EC), which states that waste is "*any substance or object which the holder discards or intends or is required to discard*". Once it has been discarded, the substance or object remains a waste until fully recovered.

2.1.2 "Discard" includes the recovery and recycling of a subject or object as well as its disposal. The decision on whether something is discarded must take account of all the circumstances (for example, the nature of the material, how it was produced and how it would be used) and must have regard to the aims of the WFD: "*the protection of human health and the environment against harmful*

*effects caused by the collection, transport, treatment, storage and tipping of waste*".

2.1.3 Guidance on the interpretation of the WFD definition of waste is taken from Defra's recently published 'Guidance on the legal definition of waste and its application[1]', which provides a practical guide to help organisations make decisions about whether a material is a waste or not.

2.1.4 The document also takes into account CL:AIRE's Definition of Waste: Development Industry Code of Practice (CoP) (CL:AIRE, 2011)[2]. The CoP is voluntary and applies to England and Wales only. The CoP sets out good practice for the development industry to use on a site-specific basis when assessing if excavated materials are classified as waste or not and, when treated, excavated waste can cease to be a waste for a particular use. If materials are dealt with in accordance with the CoP, the EA considers that those materials are unlikely to be waste if they are used for the purposes of "*land development*".

2.1.5 The scope of the CoP relates to "excavated materials", which include:

- soil, both top soil and sub soil, parent material and underlying geology;
- soil and mineral based dredgings (following appropriate dewatering);
- ground based infrastructure that is capable of reuse within earthworks projects, for example road base, concrete floors any processing would have to be in-line with permitted controls before considered suitable for reuse);
- made ground;
- source segregated aggregate material arising from demolition activities, such as crushed brick and concrete, to be reused on the site of production within earthworks projects or as sub-base or drainage materials; and
- stockpiled excavated materials that include the above.

2.1.6 The management of these materials has been set out in Annex C Materials Management Plan.

## 2.2 Legislation and Guidance

2.2.1 The EU Waste Framework Directive 2008/98/EC3 provides the overarching legislative framework for the collection, transport, recovery and disposal of waste, and mandates the Waste Hierarchy which requires that where waste is unavoidable, products and materials should, subject to regulatory controls, be used again, for the same or a different purpose (re-use). Otherwise, resources should be recovered from waste through recycling. Value can also be recovered by generating energy from waste but only if none of the above offer an appropriate alternative solution.

[1] Defra, 2012. Guidance on the legal definition of waste and its application
[2] CL:AIRE, 2011 Definition of Waste: Development Industry Code of Practice
[3] European Commission, 2016. Directive 2008/98/EC on Waste (EU Waste Framework Directive)

# 3 Waste arisings

## 3.1 Waste Forecasting

3.1.1 In order to identify the types of waste generated by the proposed development, the construction programme is divided into its key stages. The key programme stages that have the potential to generate waste include:

- Site clearance
- Site remediation/preparation
- Demolition
- Construction

3.1.2 The quantities of waste are not yet available.

## 3.2 Waste Types

3.2.1 The key waste streams produced on site can be classified as:

- INERT – wastes that would not cause adverse effects to the environment when disposed of, or do not decompose and they have no potentially hazardous content when placed in a landfill. Examples of inert wastes are rocks, concrete, mortar, glass, uncontaminated soils and aggregates.
- NON HAZARDOUS – wastes that would decompose when buried resulting in the production of methane and carbon dioxide. Examples of non-hazardous wastes include timber, paper and cardboard.
- HAZARDOUS – wastes that are harmful to human health or the environment (for example, pollution of watercourses) if they are inappropriately contained, treated or disposed of. Hazardous wastes may have one or more of the following properties: explosive, corrosive, flammable, highly flammable, infectious, oxidising or sensitising.

3.2.2 The following materials would be removed as part of the site clearance/demolition phase:

- Vegetation surface strip, kerbs, trees, traffic signs, safety barriers, lighting, etc.
- Bridge demolition which would result in concrete, steel beams, metal parapets, etc.

3.2.3 The waste generated during construction would be assigned a European Waste Catalogue code. A list of relevant codes is provided in Table 3-1. These codes would be provided on each waste transfer note that would accompany every movement of waste from the site.

## Table 3-1 List of Waste Categories for Construction Wastes

| **17 Construction and demolition wastes (including excavated soil from contaminated sites)** |
|---|
| 17 01 Concrete, bricks, tiles and ceramics |
| 17 01 01 Concrete |
| 17 01 02 Bricks |
| 17 01 03 Tiles and ceramics |
| 17 01 06* Mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances |
| 17 01 07 Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06 |
| 17 02 Wood, glass and plastic |
| 17 02 01 Wood |
| 17 02 02 Glass |
| 17 02 03 Plastic |
| 17 02 04* Glass, plastic and wood containing or contaminated with dangerous substances |
| 17 03 Bituminous mixtures, coal tar and tarred products |
| 17 03 01* Bituminous mixtures containing coal tar |
| 17 03 02 Bituminous mixtures other than those mentioned in 17 03 01 |
| 17 03 03* Coal tar and tarred products |
| 17 04 Metals (including their alloys) |
| 17 04 01 Copper, bronze, brass |
| 17 04 02 Aluminium |
| 17 04 03 Lead |
| 17 04 04 Zinc |
| 17 04 05 Iron and steel |
| 17 04 06 Tin |

| |
|---|
| 17 04 07 Mixed metals |
| 17 04 09* Metal waste contaminated with dangerous substances |
| 17 04 10* Cables containing oil, coal tar and other dangerous substances |
| 17 04 11 Cables other than those mentioned in 17 04 10 |
| 17 05 Soil (including excavated soil from contaminated sites), stones and dredging spoil |
| 17 05 03* Soil and stones containing dangerous substances |
| 17 05 04 Soil and stones other than those mentioned in 17 05 03 |
| 17 05 05* Dredging spoil containing dangerous substances |
| 17 05 06 Dredging spoil other than those mentioned in 17 05 05 |
| 17 05 07* Track ballast containing dangerous substances |
| 17 05 08 Track ballast other than those mentioned in 17 05 07 |
| 17 06 Insulation materials and asbestos–containing construction materials |
| 17 06 01* Insulation materials containing asbestos |
| 17 06 03* Other insulation materials consisting of or containing dangerous substances |
| 17 06 04 Insulation materials other than those mentioned in 17 06 01 and 17 06 03 |
| 17 06 05* Construction materials containing asbestos |
| 17 08 Gypsum – based construction material |
| 17 08 01* Gypsum–based construction materials contaminated with dangerous substances |
| 17 08 02 Gypsum–based construction materials other than those mentioned in 17 08 01 |
| 17 09 Other construction and demolition wastes |
| 17 09 01* Construction and demolition wastes containing mercury |
| 17 09 02* Construction and demolition wastes containing PCB (for example PCB–containing sealants, PCB–containing resin–based floorings, PCB– containing sealed glazing units, PCB–containing capacitors) |
| 17 09 03* Other construction and demolition wastes (including mixed wastes) containing dangerous substances |

| |
|---|
| 17 09 04 Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 |

## 3.3 Estimated Waste Arisings

3.3.1 The type and quantities of waste likely to arise at each stage of the project have been listed in Table 3-2. The intended use of each waste arising has been identified, based on the current available information at Design Fix 3. It is not an exhaustive list of waste types and may be extended as the detailed design develops.

3.3.2 There will be an intention to reuse materials on site where possible. In particular, the earthworks strategy is currently anticipated to result in a surplus of 25,000m3. It is expected that this will be reused in localised landscape bunding and essential landscape mitigation areas.

**Table 3-2 Estimated waste arisings**

| Project Activity | Waste arisings from the project | Quantities of waste arisings | Additional information on waste arisings |
|---|---|---|---|
| Site remediation/ preparation/ earthworks | Vegetation surface strip and trees | Estimated habitat loss[1] indicates the loss of 7.7ha of woodland, 100 individual trees, 4.49km of Cornish hedgerow, 7.09m of soft hedgerow, 0.41ha of heathland, 15.73ha of semi-improved and poor semi-improved grassland, 1.49ha of marshy grassland, 13.88ha of dense scrub, scattered scrub, introduced shrub, and tall ruderal, 0.03ha of bracken, 43.59ha of arable, 77.01ha of improved grassland, and 2.17ha of amenity grassland. | Likely to be a combination of local recycling facilities, disposal at an inert or non-hazardous landfill site.<br><br>There is the potential to create habitat log piles from wood over 250mm in diameter in discreet locations along the scheme, and to reuse stone from the Cornish hedgerow. |
| | Traffic signs, lighting columns and foundations, safety barriers and kerbs | 350m$^3$ steel<br>680m$^3$ concrete<br>320m$^3$ brick<br>40m$^3$ wood | |
| Demolition | Bridge, house and road demolition including supports, rails, voids | 1120m$^3$ concrete<br>33200m$^3$ asphalt<br>35000m$^3$ aggregate<br>10m$^3$ aluminium | Likely to be a combination of local recycling facilities, disposal at an inert or non-hazardous landfill site. |

| Project Activity | Waste arisings from the project | Quantities of waste arisings | Additional information on waste arisings |
|---|---|---|---|
| Site construction | Surface planings | Not available at this stage. | Likely to be a combination of local recycling facilities, disposal at an inert or non-hazardous landfill site. |
| | Site won material (hazardous) | ~72,750m$^3$ (≤5% of total excavated material) | This is a worst case ≤5% assumption. Any hazardous material will be taken to a licensed waste management facility such as the Biffa site 315km from the proposed scheme. |
| Operation | Over the course of a 40-year design life, this will involve:<br>• Removal of surface course on a 10 year cycle<br>• Removal of kerbs, drainage system, road signs on a 20 year cycle | Not available at this stage. | This will be managed by the Overseeing Organisation and is likely to consist of a combination of local recycling facilities, disposal at an inert or non-hazardous landfill site. |

# 4 Management of waste

## 4.1 Waste Hierarchy

4.1.1 Construction waste generated from the scheme will be managed according to the principles of the waste hierarchy which ranks waste management options according to environmental impact. The waste hierarchy indicates "waste prevention" as the best outcome for the environment and "disposal" as the least favoured.

4.1.2 The SWMP will set out how waste will be managed throughout each stage of the project. Prior to the commencement of site development, the Contractor will identify suitable waste management contractors and investigate opportunities to recycle other materials.

**Prevention**

4.1.3 The Contractor will ensure that waste is prevented where possible by using less material in design and manufacture and only ordering quantities of material required.

4.1.4 The SWMP will record identified measures to be implemented to prevent and minimise the quantity of waste produced during the project. The following measures have been identified as ways of preventing and minimising the quantity of waste produced during this project:

- All waste arisings to be segregated on site;

- Re-usable materials to be identified on site and removed for storage and re-sale;
- Recyclable materials to be removed from site for processing in licenced facilities; and
- Recoverable materials will be removed from site for processing in licenced facilities.

4.1.5 The Outline Materials Management Plan (Annex C) sets out the procedure for managing the materials and identifies how the materials will be managed in order to minimise the amount of waste generated.

**Re-use**

4.1.6 The Contractor will ensure that any waste generated on site will be re-used where possible in accordance with the waste hierarchy. The materials that have the potential to be re-used on site have been identified to include earthwork material, demolition material. Reuse is subject to confirmation of materials at the next design phase. The SWMP will detail the estimated quantities of waste material and the opportunities for reuse, recycling, recovery or disposal.

**Recycling**

4.1.7 Recycling facilities in the vicinity of the proposed scheme location will be identified by the Contractor. Only appropriately qualified and licensed waste management facilities would be used as a requirement of this SWMP. There is potential for the available sites for recycling, reprocessing and disposal to change and it is the responsibility of the Contractor to evaluate the waste management market and identify suitable options.

**Recovery**

4.1.8 Opportunities for the recovery of waste generated by the scheme will be considered by the Contractor.

**Disposal**

4.1.9 Any waste that cannot be prevented, re-used, recycled or recovered, will be disposed of in a responsible manner.

4.1.10 Local waste management facilities will be identified and assessed to ensure adequate capacity for the waste generated by the proposed scheme. It is not anticipated that there will be a large amount of waste associated with the proposed scheme.

## 4.2 Storage of Waste

4.2.1 Waste will be stored in line with best practice measures, which include Pollution Prevention Guidelines. Whilst these guidelines have now been withdrawn and are undergoing a review, a replacement guidance series, Guidance for Pollution Prevention (GPPs) are available in addition to some PPGs which remain the most up to date guidance. In particular PPG 6 will be followed which sets out general measures for storing waste. Further details associated with storage of waste on-site will be confirmed at detailed design stage.

## 4.3 Waste Management Facilities (on-site)

4.3.1 Waste management facilities will be provided at construction compounds throughout the site. The two main compounds will comprise a waste segregation area. There will also be compounds for each junction and side road overbridge and underbridge which will contain areas for the temporary storage of waste.

# 5 Implementation

## 5.1 Training

5.1.1 A training regime focused on the provisions of the SWMP would be implemented for all relevant members of the construction team, including those carrying out demolition works to ensure their competence in carrying out their duties on the Scheme.

5.1.2 Any SWMP training would be additional to the mandatory training requirements on site Health and Safety.

5.1.3 A general site induction would be developed to introduce all site personnel to the main provisions of the SWMP, important environmental controls associated with the construction of the Scheme and effective delivery of the SWMP (for example, waste storage arrangements, waste segregation at source). A full register of induction attendance would be maintained on site.

5.1.4 Toolbox talks and method statement briefings would be given to the construction (and demolition) teams as work proceeds and would cover the types of wastes produced at each key build stage, and the SWMP controls related to specific activities undertaken during the works. A full register of toolbox talks and method statement briefing attendance would be maintained on site.

5.1.5 All training records would be maintained and filed on site. The records would include the content of the training courses (induction and toolbox training), record of attendance and schedule of review.

# 6 Monitor, review and report

## 6.1 Monitoring

6.1.1 Monitoring of the SWMP would principally be achieved through the completion of the Waste Management Data sheets and regular inspections of the works areas by the Contractor to ensure that the provisions of this SWMP and control measures outlined in relevant method statements are being implemented.

6.1.2 Duty of Care paperwork documenting the movements of waste from the site (i.e. Waste Transfer Notes) and the registered carriers' details would be retained.

## 6.2 Review

6.2.1 During the construction process, the SWMP would be reviewed as often as necessary or at least once every three months to ensure that the plan accurately reflects the progress of the Scheme in terms of waste estimates and targets. As part of the review, the Contractor must record the following:

- The types and volumes of waste produced;
- Identify on the plan the work area where the waste was removed from; and
- The types and volumes of waste that have been:
  - re-used (and whether this was on or off site);
  - recycled (and whether this was on or off site);
  - sent for another form of recovery (and whether this was on or off site);
  - sent to landfill; or
  - otherwise disposed of.

## 6.3 Report

6.3.1 Within three months of the end of construction, the Contractor will report on the performance of the SWMP. This would include confirmation that the plan has been monitored on a regular basis to ensure compliance with the provisions of the SWMP, that the plan was updated accordingly and that any deviations from the plan would be explained. The Contractor would continue to report on the performance of the SWMP on an annual basis throughout the construction period.

6.3.2 In addition to the above, the report would include a comparison of the estimated quantities of each waste type against the actual quantities of each waste type, performance against the scheme standards and an estimate of the cost savings achieved by and costs incurred in completing and implementing the plan.

# Annex C: Outline Materials Management Plan

# 1 Introduction

1.1.1 The Contractor shall include within the Construction Environmental Management Plan (CEMP) a Materials Management Plan (MMP).

## 1.2 Purpose

1.2.1 The purpose of the MMP is to manage the reuse of site won materials in accordance with Contaminated Land: Applications in Real Environments (CL:AIRE) Guidelines

## 1.3 Structure and Scope of the Outline Materials Management Plan

1.3.1 This MMP has been prepared in order to support the requirements of the CL:AIRE Definition of Waste: Industry Code of Practice (DoW CoP), Version 2 (CL:AIRE, 2011).

1.3.2 CL:AIRE is the current management organisation for the DoW CoP:

- It sets out good practice for the development industry to use when:
  - Assessing on a site specific basis whether excavated materials are classified as waste or not; and;
  - Determining on a site specific basis when treated excavated waste can cease to be waste for a particular use; and
  - It describes an auditable system to demonstrate that this DoWCoP has been adhered to.

1.3.3 This MMP has been prepared in order to support scheme. It will identify the information from the scheme design and construction documentation to demonstrate that the requirements of the CL:AIRE DoW CoP can be met.

1.3.4 The earthworks strategy for the scheme, and hence this outline MMP, is at an outline stage and will be developed further during detailed design.

## 1.4 Responsibilities

1.4.1 This Outline MMP provides the framework which will be used as a basis from which to develop the scheme's MMP. The MMP will be developed and implemented by the appointed contractor.

**Table 1-3 Responsibilities details**

| Name | Position/Responsibility | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | SHE Manager | |
| | Principle contractor Environmental Manager | |
| | Suitable Qualified Person registered under CL:AIRE (if the Environmental Manager is not) | |

# 2 Materials Management Plan

## 2.1 Material Resources to be Used

2.1.1 A variety of different materials will be required for the scheme. The scheme will be designed to prevent where possible the volumes of both the waste materials generated and the imported construction materials by reusing or recycling the available existing materials along the scheme.

2.1.2 Site won materials would only be reused on site if assessed as being suitable for reuse based on engineering requirements and without causing unacceptable impacts on the end users and the environment. A specification for suitable material to be used in construction will be developed, in accordance with the Specification for Highway Works. Where appropriate, testing shall be undertaken during construction to confirm that the materials used meet the specification requirements.

2.1.3 The estimated material resources required for the project and the quantities and sourcing of materials has been listed in Table 2-4.

2.1.4 Earthworks estimates predict a surplus of 15,000 $m^3$ of general earthworks materials. It will be necessary to import aggregates, asphalt, concrete and manufactured products. Where possible these materials will be sourced locally.

**Table 2-4 Material resources required**

| Project Activity | Material resources required for the project | Quantities of material resources required | Additional information on material resources |
|---|---|---|---|
| Site remediation/ preparation/ earthworks | Topsoil required for new verges and earthworks | 280,000$m^3$ (based on 450mm depth) | Sourced from site. Stored on-site before re-use on the new embankment and cutting slopes and within landscape areas. |
| Site construction: | | | |
| • Cut and fill | General fill, including earth embankments (mainline and side roads) | 1,175,000$m^3$ | Sourced from material won on site |
| | | 10,000$m^3$ | This will be sourced from local quarries due to programme requirements (within 15 miles radius) |
| • Installation of pavement | • Type 1 sub-base<br>• Base<br>• Binder<br>• Surface course | • 148,000 $m^3$*<br>• 82,000 $m^3$*<br>• 25,000 $m^3$*<br>• 17,000 $m^3$* | Sourced from local suppliers |
| • Installation of manufactured products | Drainage, kerbs, traffic signs, lighting, safety barriers etc. | Various quantities relative to road length and necessary safety measures | Sourced from local/national suppliers, dependent upon material required. |

| Project Activity | Material resources required for the project | Quantities of material resources required | Additional information on material resources |
|---|---|---|---|
| • Structures | Concrete, including pre-cast structures | Various quantities relative to road length and necessary safety measures | Local batching plants (3 plants exist in Redruth and Indian Queens which only produce 30-60m$^3$/hour) therefore need to supplement with national industry. Majority of precast factories in the UK are situated in the Midlands so likely to be sourced from outside Cornwall. |
| | Steel | | Likely to be sourced from a national supplier. Closest availability would be Somerset/South Wales. |

2.1.5 The Contractor shall ensure that materials are treated and used as set out in the outline MMP and, at the completion of the works, shall complete all lines of evidence in relation to suitability for reuse, certainty of use and quantity required in the CL: AIRE Materials Management Plan form which will be submitted to the Qualified Person along with all supporting information.

## 2.2 Supporting Documentation

2.2.1 The following provides a list of the expected documentation requirements to support the completion of an MMP for the scheme:

- Invasive Species Management Plan;
- Earthworks Strategy;
- Land Contamination Management Strategy;
- Remediation Strategy including a verification plan;
- Earthworks Specification;
- Cut/Fill requirements and earthworks movements plan;
- Design Statement;
- Qualified Person Declaration;
- Verification Report; and
- Proforma MM; and
- Soils Management Plan

2.2.2 The other supporting documentation referenced will be prepared separately and references incorporated into the MMP as regulator agreement is obtained. The outline MMP will be reviewed and updated during detailed design of the proposed scheme.

## 2.3 Summary

2.3.1 There is an intent to maximise the reuse of any materials used on site for the construction of the proposed scheme. There is understood to be a net surplus of materials with an intention to reuse these on site. Where residual materials arise,

the Contractor will be required to make arrangements for reuse through design and, if not, disposal.

# Annex D: Outline Invasive Species Management Plan

# 1 Introduction

## 1.1 Purpose

1.1.1 The purpose of the outline Invasive Species Management Plan is to set out the requirements and management of invasive species to prevent the spread of species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

1.1.2 All works in the vicinity of or affecting invasive species shall be managed to prevent the spread of such plants.

## 1.2 Structure and Scope of the Invasive Species Management Plan

1.2.1 This outline Invasive Species Management Plan sets out the scope of the general measures and specific control measures that may be potentially used for the invasive species which have been identified on the A30 scheme. Exact methods of removal and disposal will be decided at detailed design. The invasive speciese identified on site comprise:

- Montbretia Crocosmia x crocosmiiflora which was located at numerous positions within the survey area. This species was recorded in 42 locations across the survey area, they were often associated with residential gardens or roadside verges.
- Rhododendron which was located at numerous positions within the survey area. This was recorded in six locations across the survey area, this included Chyverton Park within the woodland where it was a dominant species.
- Japanese knotweed which was located at two positions within the survey area to the south west of Chiverton Cross.
- Japanese rose which was located at several positions within the survey area. This was associated with residential gardens near to Chiverton Cross.
- Cotoneaster which was located south of Chiverton Cross.
- Three-cornered garlic to the east of Zelah.
- Variegated archangel within the woodland at Chyverton Park.
- New Zealand pigmyweed within Pond 13.3 (located northeast of Zelah, see Figure 2-2 in Volume 6, Document Ref 6.4, Appendix 8.9 for pond survey locations).

1.2.2 In addition to the control measures set out below, a pre-construction survey should be undertaken of all areas within construction footprint to identify the location of any invasive species not already identified. The invasive species that were identified during ecological surveys, and are therefore considered within this outline CEMP are detailed within Section 2 below:

1.2.3 A full detailed Construction Environmental Management Plan (CEMP) will be produced during the detailed design stage of the scheme and agreed with Statutory Environmental Bodies prior to construction, which will include a Method Statement for preventing the spread of any invasive species. Implementation of these requirements should be undertaken through site set up and provision of Toolbox Talks for all personnel prior to works commencing.

## 1.3 Responsibilities

- Contractor – to ensure effective management of the works in line with their Employer's, legal and any other requirements/agreements regarding invasive species. Also to ensure any requirements are communicated on to sub-contractors.
- Site agents – to provide information on programme and timing of works, and issue to the Environmental advisor.
- Environmental Manager – responsible for liaising with all parties and ensuring that they are aware of the requirements of this control plan. The environmental manager shall report the results and progress to the project management team and employer's site representative.
- Subcontractors – to undertake works in accordance with the control plan.
- Operatives – to follow any instruction from the project management team and conduct works in accordance with method statements.

**Table 1-5 Responsibilities details**

| Name | Position/Responsibility | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | SHE Manager | |
| | Principle Contractor Environmental Manager | |
| | Ecological Clerk of Works | |
| | Site Manager | |

## 1.4 Consent Requirements

1.4.1 All works affecting invasive species shall be completed in accordance with the Environment Agency's Treatment and disposal of invasive non-native plants: regulatory position statement (RPS) 178 and Waste Regulation (England and Wales 2011).

# 2 General Control Measures

2.1.1 Details of invasive species shall be included within the project induction and toolbox talks given to operatives working in areas where the species are or have known to grow. Any early regrowth shall be reported and dealt with as detailed above. If the cells have been completed when new growth is discovered this shall be excavated and taken for offsite disposal at licenced facilities.

2.1.2 There shall be a vehicle cleaning area adjacent to the burial zone and all vehicles used shall be cleaned prior to leaving this area. This area shall not be greater than 7m from the burial zone, material left in the clean down zone shall be collected and deposited into the burial cell.

2.1.3 The excavation shall and transfer of invasive species contaminated material and haulage to the holding area shall be supervised.

2.1.4 Areas where invasive contaminated material is buried shall be accurately recorded and details of this included within the Handover Environmental Management Plan (HEMP).

2.1.5 Excavation is to begin from the furthest point of the works and move backwards to avoid traffic on excavated, potentially contaminated ground.

2.1.6 Vehicles collecting and removing material should be positioned over part of the geotextile prior to loading. Any material that may be dropped by the hopper will be caught by the geotextile.

2.1.7 Once the works have been completed, the excavator is to be thoroughly cleaned and all arisings placed into the final load of contaminated material.

2.1.8 In the event of material requiring storage prior to burial this shall be stored in a designated location on an impermeable membrane to prevent spread of the plants. This area will also have a clean down zone.

2.1.9 If any material is to be removed for offsite disposal this will only be performed once a disposal location has been identified and this location has confirmed that will accept the waste. This will require ground investigation data and may need up to 10 days to obtain this information.

# 3 Specific Identification and Control Measures

## 3.1 Montbretia Crocosmia x crocosmiiflora

3.1.1 Identification:

- Smooth upright bright green leaves less than 3cm wide are present from spring to autumn, these form dense stands which can cover large areas. The plant grows to 60cm tall.
- During the winter leaves die and are brownish in colour, with dead flowering stems and seed heads.
- Flowers are orange in colour forming nodding clusters.
- Corms are present underground at the base of the plant, and can be used to identify the species from other similar looking plants.

3.1.2 Physical removal:

- Plants can be dug out but it is essential that all the plant material and corms are removed. If corms are broken up or accidentally left they can produce new plants potentially making the problem worse.
- Excavated material should be removed from site to licensed landfill as controlled waste, or dealt with on site in waste management areas or buried.

3.1.3 Chemical removal:

- Infestations can be effectively treated with herbicide whilst the plants are actively growing.

## 3.2 Rhododendron

3.2.1 Identification:

- Evergreen shrub or small tree up to 8m tall.
- Long oval shaped leaves, 10 – 20cm long, dark green above, paler and hairless beneath with a leaf stem 1 – -3cm long.
- At the end of the branchlets with up to 15 flowers on a stalk opening in late spring.
- It has flowers which appear around May – June. Calyx very small, with 5 blunt teeth c.25 mm long; corolla bell-shaped, c. 5cm wide, 3.5 – 5cm long, lilac, often with a pinkish or purplish tinge, and with green-yellow spots in throat; individual flower stalks c. 2 – 4cm long, hairless or slightly glandular-hairy; 10 stamens, filaments hairy at base, ovary and style hairless.

3.2.2 Prior to any works commencing a bespoke management plan should be constructed to ensure that the correct works are undertaken.

3.2.3 Physical removal:

- This involves physically clearing all the plants from the designated plants by hand or with machinery. The strategy is often dependent on the topography, with the plants being often found on craggy areas inaccessible to heavy machinery an element of intense labour is often required.
- All plants should be cleared down to ground level, stumps appropriately treated, debris chipped or burnt and small growth chemically treated.
- Typically methods of clearance are via chainsaws and forestry mulchers although larger forestry machinery can be used in certain situations should the tree density allow it.
- Stumps can often be winched out of the ground to remove the most viable sections of the plants root system however this can present issues to man and animals. An on-going monitoring and chemical treatment regime or hand pulling should then be implemented for a number of years until both the seed bank and root system are depleted.

3.2.4 Chemical removal:

- It is feasible on some sites to implement a chemical control programme to achieve eradication of this species. Herbicides are applied to all plants below 1.3m in height via knapsack sprayers, all plants above this are injected with herbicide at specific points. When undertaking injection works some element of hand clearance will obviously be necessary to create access to the relevant sections of the plants.
- The treatment programme should be regularly reviewed to ensure that the herbicides are been applied at the correct growth stage and in the correct manner. Any amendments can then be easily made to suit the sites specific needs.
- Eradication can take a number of years to be achieved depending on the size of the seed bank and root system.

## 3.3 Japanese knotweed

3.3.1 Identification:

- Fleshy red tinged roots when first breaking ground
- Large oval green heart shaped leaves
- Silver tinge to underside of leaves

- Hollow stem - bamboo like
- Begins to grow in early Spring
- Grows at a rate of 3cm per day
- Reaches height of 1.5/2m by May
- 3m by June
- Leathery leaves
- Dense clumps
- Clusters of creamy white flowers
- Dies back between September and November leaving dead brown stems
- Grows in any type of soil – no matter how poor.

3.3.2 Physical removal:

- Demarcate the area of excavation, up to 7m from the edge of plant growth. It is assumed that excavations will not extend greater than 3m. Actual excavation depth shall be dependent on the depth of rhizome penetration. Accurate Rhizome identification will help minimise the amount of excavation.
- Rhizome is to be removed with care; usually the crowns are located within the top 500mm. Therefore 0-500mm should be removed in one scrape to minimise the potential for breaking crowns and lessen potential risk of spread. This material should be stored separately from the rest of the excavation material.
- Excavation down to 3m (or as appropriate when identifying rhizome) and use this excavation material as the base or top layer in the burial pit. The middle layer should be that containing the material excavated in the top 0-500mm.
- A haulage route from the excavation to the storage area will be agreed and if necessary demarcated.
- Excavation material shall be taken directly to the position of burial.
- All vehicles used to transport Japanese knotweed material are to contain a system to cover the hopper during transport to minimise the potential for spread.
- Japanese knotweed is to be buried and covered with a membrane. The upper level of the cell must be at least 2m below ground level to minimise risk of damage. Material to be treated with glysophate solution prior to covering.

3.3.3 Chemical removal:

- It usually takes at least three to four seasons to eradicate Japanese knotweed using weedkiller. Professional contractors, however, will have access to more powerful weedkiller that may reduce this period by half.
- When using weedkiller, always follow the instructions on the pack to make effective and economic use of the product while minimising risks to people and the environment.
- glyphosate-based herbicide application can effectively control infestation.
- Glyphosate-treated knotweed will often produce small-leaved, bushy regrowth 50-90cm (20in-3ft) in height the following spring. This is very different in appearance to the normal plant and it is essential that this regrowth is treated.

## 3.4 Japanese rose

3.4.1 Identification:

- Japanese rose is a woody perennial shrub, it suckers readily producing new shoots from the roots.
- Upright stems are covered in numerous straight thorns
- Flowers are large, usually solitary and vivid purplish pink (but can vary from white to red) in colour, measuring 6-9cm across.
- Fruits (hips) are present from late autumn, they are 2-3cm in diameter and are rounder than our native species of rose
- The leaves are 8-15cm long and have a distinctive corrugated appearance

3.4.2 Physical removal:

- Cutting Japanese rose several times a year over a number of years can reduce infestations.
- Plants and root system can be excavated however it is important that all the root system is removed. Excavated material must be disposed of at licensed landfill

3.4.3 Chemical removal:

- Herbicide application can effectively control infestations.

## 3.5 Cotoneaster

3.5.1 Identification:

- A large group of shrubs and small trees, some deciduous and some evergreen
- Wall Cotoneaster is the most widespread of the species in the UK and has distinctive flattened branches which spread horizontally in a 'herringbone' shape.
- Himalayan cotoneaster is an erect deciduous shrub which grows to 3-4 metres in height, the leaves of this species are 1.5-2.5 cm long
- Small-leaved cotoneaster is an evergreen species with very small leaves 0.5-0.8cm long
- All Cotoneaster species are thorn-less, leaves are shiny and hairless on the upper surface and slightly hairy on the underneath of the leaf
- The plants produce small white of pink flowers in spring and summer followed by red/orange berries in cluster.

3.5.2 Physical removal:

- Young seedlings can be effectively pulled however larger plants will develop multiple stems from the large root mass making it difficult to remove the whole plant
- Root mass can be excavated to remove entire plant and prevent regrowth
- Material should be chipped or burnt on site or removed to licensed landfill as controlled waste

3.5.3 Chemical removal:

- It is possible to spray smaller plants with herbicide however chemical uptake in larger plants is reduced
- Addition of wetting agents improve uptake of herbicide

- Larger plants should be stump treated after cutting to prevent regrowth

## 3.6 Three-cornered Garlic

3.6.1 Identification:

- A perennial herb, with white bulbs. The leaves are green, hairless and narrow with 2-5 leaves per bulb. Leaves die back once the plant has flowered around May - June.
- Flower stems measure 10 – 45cm in height with white flowers, with a strong green stripe, similar in shape to bluebells. Stems have a triangular cross section giving rise to its common name.
- The plant prefers shadier areas but will grow in numerous habitats.

3.6.2 Physical removal:

- Infestations can be removed mechanically by digging, this is easiest done in spring when surface vegetation is present, ensuring that all plant material and bulbs are removed. This may need to be followed by mechanical cutting over a number of years to exhaust the seed bank.
- Waste materials containing the Three cornered garlic are considered 'controlled' waste and must be disposed of appropriately.

3.6.3 Chemical removal:

- Herbicide application can by successful at reducing the spread of the plant. Applications of herbicide should be made in spring before flowering.
- Multiple applications may be required due to the persistence of bulbs and of the soil seed bank
- When treating large areas, a suitable grass and forb mix should be sown to prevent bare ground and colonisation of other unwanted species.

## 3.7 Variegated Archangel

3.7.1 Identification:

- An erect hairy perennial. The green variegated leaves have characteristic and distinctive silvery patches, they are hairy with toothed edges, growing in opposing pairs to a length of 4-7cm. In cooler conditions, the centre of the leaves can appear purplish in colour.
- Flower are yellow in colour, and like other deadnettle species, the flowers are lipped and hooded. The plant flowers from April to June. The flowers are self-fertilised or cross pollinated by insects.
- The plant prefers shadier areas but will grow in numerous habitats including gardens, woodland and woodland edges and hedgerows.

3.7.2 Physical removal:

- The plant is shallow rooting and can be mechanically removed although care should be taken to remove all of the plant material as the runners easily break up when disturbed and have the potential to propagate new colonies.
- Waste materials containing the Variegated yellow archangel are considered 'controlled' waste and must be disposed of appropriately.

3.7.3 Chemical removal:

- Herbicide application can successfully control the plant. Applications of herbicide should be made while the plant is actively growing to ensure maximum effectiveness.

## 3.8 New Zealand pigmyweed

3.8.1 Identification:

- A perennial with yellowish-green opposite and/or succulent leaves, less than 20 millimetres long and solitary white or pale pink flowers on pedicels, more than 2 millimetres in the leaf axils.
- Grows in ponds, lakes, reservoirs, canals, and ditches, as well as on damp mud on the margins of ponds and reservoirs. It tolerates a wide range of conditions, from basic to acidic and oligotrophic to eutrophic.
- Spread is vegetative, by stem fragments; a new plant can generate from a fragment as small as 5 millimetres. These can be spread by flowing water, in mud, attachment to animals and equipment, and as a contaminant of compost when purchasing or moving other water plants.
- Can be submerged, emergent, and terrestrial:
  - Submerged plants grow with elongated stems with sparse flat leaves, which are able to form extensive mats on the bed of the water body.
  - Emergent plants grow with densely packed leaves in water (less than 0.6 metres deep), intermediate between terrestrial and submerged form.
  - Terrestrial plants grow away from the water's edge or are left stranded as the water level falls, with creeping stems and aerial, fleshy leaves.

3.8.2 The best time to carry out pond maintenance to minimise the impact on wildlife is during late autumn. Removal of New Zealand pigmweed is more successful if carried out during the early stages of establishment. Repeated control may be required.

3.8.3 Physical removal:

- New Zealand pigmyweed is shallow rooted so hand pulling or dredging marginal and emergent material can be effective.
- Cutting is not recommended as this has the potential to spread stem fragments.
- Shading terrestrial or emergent forms with an opaque material such as thick black polythene or carpet for at least three months may be effective for small areas. Be careful that this does not deplete the water of oxygen by only partially shading the pond. Always ensure that nutrient levels are controlled to prevent excessive growth.

3.8.4 Chemical removal:

- Avoid the use of herbicides as they also target native species.
- If necessary, only use products approved for use on or near water and always follow the product label.
- Agreement must be obtained from the Environment Agency before herbicides are applied in, on or near controlled waters.

## 3.9 Monitoring and Measurement

3.9.1 Weekly Safety Health and Environmental (SHE) walks and monthly SHE inspections shall be conducted where the general management techniques shall be reviewed.

3.9.2 Material movement shall be monitored through the Material Management Plan.

## 3.10 In the event of an Emergency

3.10.1 If during site works previously unidentified stands of an invasive species is suspected, then works in that area must stop and the Environmental Manager or Environmental Clerk of Works must be contacted reporting the location of discovery and works being undertaken.

# Annex E: Outline Ecological Management Plan

# 1 Introduction

## 1.1 Purpose

1.1.1 The purpose of the outline Ecological Management Plan is to set out appropriate measures to protect the ecology of the site with special attention to specified ecological resources, as identified in the Environmental Statement. The Outline Ecological Management Plan will:

- Specify measures that will be implemented during construction to ensure that impacts on sensitive ecological features are reduced;
- Outline principles for the monitoring and maintenance of the above features.

1.1.2 If significant new ecological information comes to light, then the plan should be revised accordingly by the scheme ecologist. Upon obtaining the DCO, this outline plan will be superseded by a final Ecological Management Plan which will elaborate on the information presented herein.

## 1.2 Structure and Scope of the Outline Ecological Management Plan

1.2.1 Management measures for potential ecological impacts are addressed in other sections of the Outline CEMP and are not repeated here. These include measures relating to:

- Invasive species control and management (see Annex D);
- Pollution prevention and control management (see Annex H).

1.2.2 A detailed Construction Environmental Management Plan (CEMP) will be produced during the detailed design stage of the scheme and agreed with Statutory Environmental Bodies prior to construction.

1.2.3 The following important receptors will be considered and protected through the implementation of the detailed CEMP:

- Statutory designated sites including SSSIs, SACs and non-statutory designated sites including County Wildlife Sites (CWS);
- protected and notable species (e.g. including bats, badger, otters, invertebrates, amphibians and fish;); and
- other habitats and features of ecological importance (tree and hedgerow root protection is considered within Annex I).

1.2.4 Where reasonably practicable, environmental mitigation will be provided via the design and implemented by the contractor within the works. This will require preparatory work to be undertaken ahead of the start of construction to permit timely progress of the programme.

1.2.5 Detailed measures to deal with ecological constraints will be prepared including the following, as appropriate:

- summary of features of interest for all known areas of nature conservation interest which may be affected due to construction;

- provision of guidance on ecological best practice methods to be followed to mitigate potential ecological effects during construction;
- procedures to be adopted in the event of unanticipated discovery or disturbance of protected species;
- reference to the relevant procedures, including any special measures, to be implemented in the event of a pollution incident, where this occurs on or adjacent to an area where protected and/or notable species are known to be present; and
- individual species or habitat management plans to include the information above (where appropriate) for:
  - terrestrial habitats;
  - European Protected Species (otter and bats);
  - badger;
  - breeding birds;
  - invertebrates
  - freshwater fish, including migratory species; and
  - common reptiles;
  - other protected and/or notable species, e.g. amphibians.

1.2.6 Species or habitat management plans will be prepared by the Contractor.

1.2.7 The contractor will, where reasonably practicable, reduce any habitat loss within the land provided for the scheme by keeping the working area to the minimum required for construction of the Scheme.

## 1.3 Responsibilities

- Contractor – to ensure effective management of the works in line with their Employer's, legal and any other requirements/agreements regarding invasive species. Also to ensure any requirements are communicated on to sub-contractors.
- Site agents – to provide information on programme and timing of works, and issue to the Environmental advisor.
- Environmental Manager – responsible for liaising with all parties and ensuring that they are aware of the requirements of this control plan. The environmental manager shall report the results and progress to the project management team and employer's site representative.
- Subcontractors – to undertake works in accordance with the control plan.
- Operatives – to follow any instruction from the project management team and conduct works in accordance with method statements.

**Table 1-6 Responsibilities details**

| Name | Position/Responsibility | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Principle Contractor Environmental Manager | |
| | Ecological Clerk of Works | |
| | Site Manager | |

# 2 Measures to reduce potential impacts on ecological resources

## 2.1 Birds

2.1.1 During construction, mitigation for the temporary loss of habitat will include the provision of new nesting habitat including bird boxes in trees and buildings to be retained.

2.1.2 Procedures for vegetation clearance to minimise the impact on birds are described below.

## 2.2 Barn Owl

2.2.1 During construction, night working would be avoided where possible. If it cannot be avoided, it should be restricted in the vicinity of known commuting routes and valuable areas of foraging habitat (i.e. commuting hedgerows should not be illuminated nor have generators placed next to them.

## 2.3 Badger

2.3.1 A scheme-wide badger licence from Natural England will be obtained which will detail mitigation for any impacts including disturbance to any badger sett. This will be drawn up in consultation with Natural England.

2.3.2 Licensable activities include:

- Artificial setts will be provided to replace any main setts which will be lost to the scheme or which will need to be temporarily closed to accommodate the scheme.
- Any sett closures can only be carried out during the licensable period - July to December, with 21 clear days from badger activity before construction can commence.

2.3.3 Any holes/excavations created during construction period which badgers or other mammals could fall into must be covered and a ramp provided.

## 2.4 Otter

2.4.1 Where otters are known to be present, work by the Contractor would be done under a precautionary method of working as direct by a suitably qualified ecologist/ Ecological Clerk of Works.

2.4.2 In addition no steep-sided, deep and/or water-filled excavations would be left unguarded overnight as otters could fall in and become trapped. Any major excavations that need to be left uncovered overnight would have their slopes battered. If it is necessary to leave small deep, steep-sided or water-filled excavations open overnight they would be protected with suitable fencing.

2.4.3 Night working should be avoided where possible. If it cannot be avoided, it should be restricted in the vicinity of known commuting routes and valuable areas of foraging habitat.

2.4.4 The following measures should be considered within the construction stage lighting design:

- No known commuting routes, or important foraging should be directly illuminated;
- Lighting levels should be as low as current standards and guidelines allow;
- Lighting should only be provided only in essential areas;
- Lighting should be directed to where it is needed and light spill avoided;
- LED lighting produces no ultraviolet component and therefore is ideally suited as it greatly reduces the attraction of insects;
- The height of lighting columns in general should be as low as possible. However, there are cases where taller columns will enable light to be directed downwards at a more acute angle and therefore reduce horizontal spill light.

## 2.5 Bat

2.5.1 European protected species (EPS) mitigation licences from Natural England will be obtained to cover any loss or disturbance of bat roosts as a result of the scheme. These will be drawn up in consultation with Natural England. The details in the method statements of the licences must be adhered to. Mitigation measures will include the replacement of roosts which are to be lost to the scheme including Building 35 at NFH, and the provision of new roosting habitat including bat boxes in trees and buildings to be retained.

2.5.2 The eight important hotspot areas for bat activity comprising linear features identified during field surveys including the hedgerows at Tresawsen, the tree-lined lane either side of Tolgroggan bridge and the hedgerow at Journey's End will be retained in order to maintain connectivity for bats for as long as possible during the construction phase.

2.5.3 Following the severance of these features to accommodate the works, dead hedges will be installed during the remainder of construction stage to maintain the flight paths. These must be in place from dusk until dawn during the bat activity season.

2.5.4 A Toolbox Talk regarding bats and foraging and commuting routes should be given by the ECoW prior to any works commencing.

2.5.5 Where potential presence of roosting bats in any building or tree cannot be ruled out after the full suite of field surveys and pre-construction surveys (undertaken in accordance with best practice guidance), these must be precautionary measures must be carried out including the soft-felling of trees and the soft-stripping of buildings or other built structures.

2.5.6 Where possible planting for the scheme will take in to account general habitat requirements for bats and seek to create habitat and to replace severed linkages/ commuting corridors such as hedgerows through translocations and/ or new planting through habitat creation.

2.5.7 As a general precaution, tree felling would only be undertaken in autumn, between late August and October/early November. This is because bats do not have dependent young at this time and are not hibernating and should therefore be active enough to escape harm if proper precautions are taken.

2.5.8 Night working should be avoided where possible. If it cannot be avoided, it should be restricted in the vicinity of known bat commuting routes and valuable areas of foraging habitat (i.e. commuting routes should not be illuminated nor have generators placed next to them).

2.5.9 Production of a construction stage lighting strategy to limit the use of construction lighting and ensure all essential lighting is specified and designed to reduce light spill. This is to include locations of lighting and lighting levels details. The following measures should be considered within the construction stage lighting strategy:

- No bat roosts, or important foraging and commuting habitat should be directly illuminated;
- Lighting levels should be as low as current standards and guidelines allow;
- Lighting should only be provided only in essential areas;
- Lighting should be directed to where it is needed and light spill avoided;
- LED lighting produces no ultraviolet component and therefore is ideally suited as it greatly reduces the attraction of insects;
- The height of lighting columns in general should be as low as possible. However, there are cases where taller columns will enable light to be directed downwards at a more acute angle and therefore reduce horizontal spill light.

## 2.6 Fish

2.6.1 Where instream work is required, fish relocation should take place in watercourses where fish where recorded in order to move fish from impacted reaches to suitable habitat elsewhere. This would only be done under licence from the Environment Agency.

2.6.2 Pollution could negatively impact species, such as pollution intolerant salmonid fish. This will be mitigated by the implementation of best practice construction techniques for pollution prevention and control, as detailed within the Outline CEMP Annex H.

## 2.7 Section 41 Species

2.7.1 Method statements will be drawn up at the detailed design stage comprising a series of mitigation measures including timing of works, to prevent adverse impacts on Section 41 species which have been identified as potentially being present throughout the scheme including:

- hedgehog,
- harvest mouse,
- brown hare,
- polecat,
- pine martin, and
- common toad

# 3 Pre-construction Surveys

3.1.1 Prior to the construction phase of the Scheme pre-construction surveys will be undertaken in accordance with best practice guidelines. These surveys will include surveys of:

- Bat surveys of buildings and trees up to 50m from any construction activities to determine if roosts are present.
- Otter surveys on waterbodies and associated habitat within the construction area and up to 1km (500m either side of the scheme) to determine any breeding or resting sites.
- Barn owl surveys up to 50m from any construction activities.
  Badger surveys up to 50m from any construction activities.

3.1.2 The results of the pre-construction surveys will be reviewed to determine if any protected species licences (or changes to the Draft licences as provided for the application) are required and shared with the Statutory Environmental Bodies.

# 4 Procedures for Vegetation Clearance

## 4.1 General Site Clearance

4.1.1 Any site clearance activities must be in accordance with any mitigation licences from Natural England including European Protected Species mitigation licences (for bats or otter), and licences to disturb a badger sett.

## 4.2 Birds

4.2.1 Where possible vegetation clearance will be undertaken outside of the breeding bird season (March to August inclusive). If this is not possible, an Ecological Clerk of Works (ECoW) should be appointed to carry out a nesting bird check on any vegetation to be cleared, or vegetation directly adjacent to major works, no more than 48 hours prior to works commencing. If an active nest is identified, an appropriate exclusion zone will be decided by the ECoW based on the construction activity taking place. This exclusion zone will be marked out and protected from any clearance activity until the young are fully fledged and have left the nest.

## 4.3 Bats

**Soft felling of trees**

4.3.1 If during the pre-construction surveys, any new confirmed tree roosts are identified within or in close proximity to the construction footprint, not already covered by the draft EPS licences, these must also be subject to mitigation licensing.

4.3.2 For any tree roosts where the potential presence of bats remains as low, moderate or high following all levels of presence /likely absence survey, i.e. where the possibility of roosting bats cannot be ruled out, these will require soft felling.

4.3.3 Soft felling must be undertaken in suitable weather conditions (above 10 degrees Celsius) and during the bat activity season (April to October inclusive). It involves removing the top branches first and working down the tree removing it in sections. Cutting through cavities/other potential roost features is avoided. Any sections of the tree identified as having bat roost potential will be lowered carefully using ropes to ground level. These sections will be laid on the ground with holes and cracks facing upward for as long as possible (at least 24 hours

under suitable weather conditions is advisable). This gives bats/any other wildlife a chance to vacate the feature.

**Dead Hedging**

4.3.4 Dead hedges can be used to allow bats to continue using a favoured flight line during construction after tree lines/hedgerows/other structures are removed to accommodate the development.

4.3.5 Dead hedges may comprise a line of herras fencing panels or similar with hessian or netlon fencing stretched across them to provide a solid feature along which bats can commute during the construction phase. Such structures are only really suitable to maintain connectivity for bats across short distances and are only required during the bat activity season. If they need to be moved during the day due to construction activities, they must be put back before dusk so that the mitigation is effective between dusk and dawn every night.

## 4.4 Amphibians and Reptiles

4.4.1 Amphibians, reptiles or Section 41 mammal encountered will be carefully moved out of the construction areas to suitable receptor areas outside of the construction footprint.

4.4.2 Within grassland and heathland areas the following methods will be considered:

- The height of the vegetation sward will be reduced in stages (Phased habitat manipulation) within works footprint to encourage reptiles to move out of these areas - strimming to 300mm above ground level. The use of this method may vary depending on the time of year and ambient temperatures.
- installation of exclusion fencing and placement of artificial refugia (roofing felt, corrugated tin) installed at a density of at least 100 per hectare.
- Capture and translocation of reptiles to receptor area.
- Any drift fencing can be removed prior to construction but exclusion fencing to remain in place throughout construction.
- Inspection of reptile fencing, if required, throughout construction period and maintenance where necessary.

4.4.3 Habitat manipulation methods should be used first, but if reptile translocation programme is required due to numbers, at least 60 visits, with 5 clear days at the end will be required.

4.4.4 Reptile enhancement features such as stone and/or log pile hibernacula's will be provided in the habitat adjacent to that being removed. If required one-way exclusion fencing will be used to prohibit amphibians and reptiles returning to the construction area.

# 5 Procedure for instream works (if required)

5.1.1 Where instream works are required in waterbodies where fish were identified, they will be drained down under the supervision of an Ecological Clerk of Works. As water levels decrease the speed of dewatering will be slowed to allow any fish or amphibians to be removed to suitable receptor locations. Where possible aquatic vegetation from drained waterbodies will be placed on the banks of

retained waterbodies for a minimum of 24 hours to allow invertebrates to move out of the vegetation.

5.1.2 Care will be taken during the draining of waterbodies to adhere to the requirements of the invasive species management plan as outlined in Annex D in relation to invasive aquatic plant species.

5.1.3 One pond may be dewatered during construction of the cutting for Pennycomequick side road (amend above). No fish were found during surveys in this pond.

# Annex F: Outline Written Scheme of Investigation

# 1 Introduction

1.1.1 The Development Consent Order includes a requirement that secures the implementation of this Outline Written Scheme of Investigation (WSI).

## 1.1 Purpose

1.1.1 This WSI provides the framework through which archaeological mitigation would be managed and monitored.

1.1.2 Appropriate measures will be adopted to protect or record heritage assets affected by the scheme, as identified within the ES.

## 1.2 Structure and Scope of the Outline Written Scheme of Investigation

1.2.1 This document comprises an Outline Written Scheme of Investigation (WSI) and is based on the information available at the preliminary design stage. As the detailed design progresses, the plan would be reviewed and updated accordingly.

1.2.2 The detailed WSI will out the methods and procedures for the identification and treatment of any significant archaeological remains that may be discovered during construction. Including any mitigation of effects on archaeological remains through archaeological excavation.

1.2.3 The WSI would be implemented through the construction of the scheme and all construction staff would be required to follow its provisions.

1.2.4 The Written Scheme of Investigation must be read in conjunction with the detailed Construction Environmental Management Plan.

1.2.5 The contractor will manage the impact of construction works on cultural heritage assets. Non-designated buried archaeological remains will be considered and protected through the implementation of the detailed Construction Environmental Management Plan (CEMP).

## 1.3 Responsibilities

1.3.1 A full detailed CEMP will be produced during the detailed design stage of the scheme and agreed with Historic England and the Senior Development Officer (Historic Environment) at Cornwall Council prior to construction.

1.3.2 It is the Contractor's responsibility to ensure that the details of this Written Scheme of Investigation and any agreed amendments are known and understood by all site personnel. Copies of the agreed documents will be available on site and the site manager will brief all personnel who could have an impact on cultural heritage assets and unknown buried archaeology. This will be a part of the site induction procedures and written into appropriate site management documents.

### Contacts

1.3.3 The key contacts, with responsibility for archaeological mitigation on this scheme are provided below.

**Table 1-7 Responsibilities details**

| Name | Position/Responsibilities | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Principle Contractor Environmental Manager | |
| | Site Manager | |
| | Local Authority Archaeologist Contractor | |
| | Archaeologist Consultant | |

# 2 Cultural heritage general provisions

## 2.1 Pre-construction surveys

2.1.1 All archaeological works shall be governed by a Written Scheme of Investigation (WSI). This will be produced and agreed with Historic England and the Senior Development Officer (Historic Environment) at Cornwall Council to manage the pre-construction archaeological investigations required as mitigation for the direct impacts of the scheme. This will include:

- A generic Written Scheme of Investigation (WSI) which will describe common standards and approaches to the recording of archaeological deposits that will be applied on the project;
- Site-specific WSIs for areas of detailed archaeological excavation and 'Strip-Map- Sample', which will include detailed research objectives for the works;
- Clear commitments for post excavation analysis, archiving, reporting, and where appropriate, publication

## 2.2 Archaeological Watching Brief

2.2.1 During construction, an archaeological watching brief will be undertaken within areas identified in the detailed WSI that should be monitored. A watching brief is proposed in all areas where there is a potential for as-yet undiscovered significant archaeological remains to be identified

2.2.2 Any archaeological remains not previously identified which are revealed during construction must be retained in situ and reported to the County Archaeologist as soon as reasonably practicable; and subject to appropriate mitigation.

## 2.3 Monitoring, Review and Reporting

2.3.1 A programme of archaeological reporting, post excavation and publication will be required.

2.3.2 The Archaeologist consultant would be responsible for all liaisons with the Local Authority's Archaeologist. They would notify when field work is due to commence and prepare monitoring reports.

# Annex G: Outline Ground and Surface Water Management Plan

# 1 Introduction

## 1.1 Purpose

1.1.1 The purpose of this Outline Ground and Surface Water Management Plan is to set out the construction measures to prevent the risk of pollution and contamination to ground and surface water. The contractor will manage risk in accordance with best practicable means which include general site management procedures, and control and measures to mitigate any effects of potential adverse effects caused by the construction works.

## 1.2 Structure and Scope of the Outline Ground and Surface Water Management Plan

1.2.1 This document is an Outline Ground and Surface Water Management Plan and is based on the information available at the outline design stage. As the detailed design progresses, the plan would be reviewed and updated accordingly. The Outline Ground and Surface Water Management Plan would be developed in consultation with Natural England (NE) and would be agreed prior to the start of construction.

1.2.2 The final Ground and Surface Water Management Plan (GSWMP) will consider all drainage required during the construction phase and will reference all industry and regulatory pollution prevention guidelines. It shall describe the design of each element of surface water management system required to manage surface water runoff during construction and potential risks to surface waters. This shall include consideration of temporary storage and settlement requirements to manage sediment load of waters. The GSWMP shall define the water quality criteria to ensure any discharge to receiving watercourses meets regulatory requirements.

1.2.3 With regard to groundwater, the GSWMP shall consider all activities to be undertaken during the construction phase that may require groundwater control through pumping. The GSWMP will reference all relevant industry and regulatory pollution prevention guidelines. The GSWMP shall consider excavations within borrow pits, structures required for managing groundwater in areas of cut and excavations required for subsurface structures/utilities that may encounter shallow groundwater. The GSWMP shall define the nature and approach for groundwater management following its abstraction, including monitoring to determine the acceptability of chemical and physical quality with respect to discharge to the surface water system.

## 1.3 Responsibilities

1.3.1 Competent managers and key team members will be appointed to work on this plan and support it along the project duration. Additional roles and responsibilities will be developed as the detailed design progresses.

**Table 1-8 Responsibilities details**

| Name | Position/Responsibilities | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Principle Contractor Environmental Manager | |
| | Site Manager | |
| | SHE Manager | |

**Consents**

1.3.2 The treatment of waters arising from construction activities, including point source discharges resulting from the treatment of materials regulated by mobile plant licence will require regulation by the EA. An application for an environmental permit (Discharge Consent) will be submitted prior to works commencing. The permit will regulate the discharge of treated contaminated waters to ground, via re-injection (or possibly soakaway). A separate environmental permit will be required for each location.

1.3.3 An abstraction licence will be in place for de-watering operations on site. A separate licence may be required for each location or activity. An impoundment of water in any watercourse or abstraction exceeding 20 cubic metres a day will be controlled by means of an EA consent (Abstraction Licence).

1.3.4 Construction works carried out over, under or near a main river, or in a flood plain or flood defence (including a sea defence) will require a Flood Risk Activity Permit. A permit will be required for each location.

1.3.5 An Ordinary Watercourse Consent is required for all works carried out over, under or near an ordinary watercourse. Ordinary watercourses include non-main rivers and all ditches, drains, cuts, culverts, dikes, sewers (other than public sewers) and passages through which water flows. The consenting authority for this scheme will be Cornwall Council.

# 2 Mitigation Measures

## 2.1 General Measures

2.1.1 Temporary surface water management systems will be installed early in the construction sequencing and carefully managed to prevent localized flooding or pollution of surface and groundwater from silt and other contaminants.

2.1.2 In areas where potentially contaminated land has been identified, specific mitigation measures will be designed to manage and contain potential contamination. Detailed method statements will be prepared for works in these areas.

**Induction of site personnel**

2.1.3 All personnel will attend a site induction before commencing work on site. The briefing will emphasise the sensitivity of the watercourses, surrounding habitat and methods and working practices employed to protect the water environment.

### Emergency Response Planning

2.1.4 An emergency response plan will be developed in accordance with EA Guidance PPG21- Pollution Incidence Response Planning. The plan will be communicated to all personnel. Emergency spill control equipment such as spill kits, oil booms and absorbent materials, will be held at appropriate locations on site and within site compounds.

### Climate Change Resilience Planning

2.1.5 The contractor should consider the potential impacts of extreme weather events during construction. To ensure resilience of the scheme to such extreme weather events, the contractor should use a short to medium-range weather forecasting service from the Met Office or other approved weather forecast provider to manage climate-related risks and inform programme management and impact mitigation measures. The contractor should register with the Environment Agency's Floodline Warnings Direct service.

2.1.6 The contractor's Environmental Management System (EMS) should consider all measures deemed necessary and appropriate to manage extreme weather events and should specifically cover training of personnel and prevention and monitoring arrangements.

### General mitigation measures

2.1.7 An outline of the main work activities to be carried out throughout the scheme as well as relevant water management proposals currently being considered are described in Table 2-1 below.

## Table 2-1 Main work activities and mitigation proposals

| Construction Risks | Mitigation |
|---|---|
| **Concrete wash water reaching controlled waters** | • Work involving concrete and cement will be carried out in accordance with EA Guidance PPG 5 'Works in, near or liable to affect a watercourse'. Controls will be implemented to ensure that wet cement does not come into contact with controlled waters.<br>• Waters that have come into contact with wet concrete/cement will be captured and treated accordingly (e.g. using Siltbusters, pH control and coagulants) before being returned to the surface water management system. Any waste material recovered during this process should be re-used onsite where possible or otherwise it should be removed from site by a licensed waste carrier for disposal to an appropriately licensed facility.<br>• An adequately sized and lined washout area to be developed and maintained.<br>  • Investigate concrete supplier's use of concrete socks. |
| **Excavation activities** | • No materials or topsoil will be stockpiled within the floodplain or near any watercourse.<br>• Silt fencing, capture ditches and bunds will be constructed around the site and along the edges of all watercourses and other watercourses to prevent the ingress of silt contaminated water. |
| **Site Compound Facilities (including Car Parks)** | • Site compounds will be located away from all surface water features and watercourses and outside of the flood plain.<br>• A site drainage plan will be prepared in advance of construction works to identify the location of all watercourses and drains/drainage paths.<br>• All drainage on site will be identified and colour coding will be used to distinguish between surface water, foul sewer and combined drainage. This will ensure that all those working on site are aware of the type of drain in the event of a pollution incident. Pollution control measures such as the use of oil interceptors, the placement of bunds or silt traps will be used to prevent silt run-off entering drains. |
| **Vehicle/Plant Movements** | • Haul routes will be regularly inspected and maintained to minimise silty run-off.<br>• Areas of hard standing will be provided at site access and egress points, where practicable. The areas will be regularly inspected and cleaned and road sweepers/cleaners will be employed on existing highways near the construction area.<br>• During the earthworks mass haul operation, damping down of the haul roads to minimise dust being generated by plant movements would be required. This would minimise dust pollution causing nuisance to neighbouring properties and businesses along the route of the scheme.<br>• All vehicles, plant and equipment will be regularly inspected and maintained in accordance with manufacturers' recommendations. Records of inspections will be maintained on site. |

| Construction Risks | Mitigation |
|---|---|
| **Wheel wash facilities** | • Site wheel washing facilities will be established at designated locations, away from watercourses and the floodplain. Cleaning will be carried out in a bunded area and wastewater will either be recycled or discharged to foul sewer (with consent from the sewerage undertaker).<br>• Any contaminated waste will be removed from site by a licensed waste carrier for disposal to an appropriately licensed facility.<br>• Guidance from PPG13 will be used to put in place good practice for vehicle washing and cleaning. |
| **Aquatic Protection** | • Advice will be sought from all specialists involved in the project and will be entered into control documents and issued through to the workforce and management ahead of works affecting watercourses.<br>• The use of construction materials on site will be free from contaminated material so as to avoid potential contamination of the watercourse. |
| **Storage of fuels, oils and other chemicals** | • Spill kits to be available near all points of work and personnel trained in their use.<br>• COSHH store to be bunded and locked when not in use.<br>• In areas of limited footprint, settlement tanks and oil separators will be used to treat contaminated water from the work areas.<br>• Physical barriers to stop material overspill.<br>• No fuels, oils or other chemicals will be stored in high- risk locations such as:<br>o within 50 metres of a spring, well or borehole;<br>o within 10 metres of a watercourse;<br>o places where spills could enter open drains or soak into groundwater; or<br>o on a floodplain.<br>• Storage tanks will be sited on an impermeable base, surrounded by an impermeable bund, and inspected regularly for leaks. Any valve, filter, sight gauge, vent pipe or ether ancillary equipment must be kept within the bund when not in use.<br>• Associated pipework should be situated above ground and protected from accidental damage<br>• All bulk fuels storage must be contained within a double skinned bowser/container or have a bund. Double skinned tanks or bowsers must also be bunded unless the outer skin would provide secondary containment. The bund must have sufficient volume to contain 110% of the contents of the largest fuel/pipe container or 25% of the total storage capacity of all the containers, whichever is the greater.<br>• All fuel containers, including those containing waste fuels, must be stored on a drip tray/bunded area away from vehicle traffic within a designated storage area, where possible, to avoid damage. |

| Construction Risks | Mitigation |
|---|---|
| | • Guidance from the PPG3 will be followed for the use and design of oil separators for the surface water drainage systems and guidance from PPG2 will be used regarding to ground storage oil.<br>• Plant will be regularly inspected, serviced and maintained to minimise the risk of leaks/spills. At the end of each working day, driveable plant will be removed from any areas of floodplain. |
| **Surface water run-off/Silt from earthworks and bridge abutment works.** | • Where possible permanent drainage will be incorporated into the works at the earliest opportunity in preference to temporary drainage systems.<br>• Oil interceptors, bunds or silt traps will be used to prevent polluted run-off entering drains, additional guidance from PPGs will also be followed.<br>• Areas of exposed sediment deemed at risk of erosion during heavy rainfall or flood inundation should be protected using either temporary measures (e.g. sheeting) or semi-permanent measures (for example coir matting) until vegetation is able to establish on these surfaces.<br>• Use of cut-off drains or ditches to channel water around the site and/or prevent silty water entering excavations and watercourses. These should be constructed along the downstream site boundary to prevent silted water leaving site. These should discharge to settling ponds/tanks.<br>• Silty water will be treated to allow suspended solids to settle out before disposal.<br>• Settling ponds or tanks should be constructed to promote the removal of silt from site runoff. Ponds should be designed for the maximum predicted site runoff using a 1 in 100 year event and should be large enough to ensure sufficient residence time for particulates to settle out, prior to discharge of the water.<br>• Wherever practicable, grey water systems will be used at site compounds to reduce run-off from site, improve water efficiency and reduce the potential for polluting discharges to surface watercourses.<br>• All water pumped from excavations would be pumped via a pipe and gravel sump in order to prevent silt being agitated from the base of the excavation and to provide rudimentary filtration to the water prior to abstraction.<br>For low volume pumping, water would either be pumped into a vegetated area remote from surface water drainage or into a small attenuation lagoon prior to being directed into the drainage system. For high volume pumping (100mm or above) water would be passed through an attenuation tank with a capacity of not less than 8m$^3$. The outlet from the tank could be placed directly into site drainage, provided the water is free from silt contamination. |
| **In-channel working** | Temporary works to divert watercourses during culvert construction, either by gravity flumes or over pumping will include suitable provisions to pass high flows. |

| Construction Risks | Mitigation |
|---|---|
| **Topsoil Stripping and Storage** | • Wherever possible, topsoil will be left in place to minimise the amount of unprotected ground exposed to runoff. Where topsoil removal is required it would take place as late as possible prior to other works in the area. Topsoil will be stored outside of the floodplain.<br>• In advance of vegetation clearance and soil stripping operations commencing within 10m of a watercourse, appropriate control measures would be implemented to prevent contamination.<br>• Topsoil stockpiles would be created and managed in accordance with best practice guidance. The sides of stockpiles would be graded to prevent ponding and to help shed rainwater. Exposed stockpiles that are to remain for long periods would be seeded with a standard Rye Grass seed mix immediately upon completion and in suitable weather conditions. This would minimise soil erosion during the soil storage period and to help reduce colonisation of nuisance weeds.<br>Silt fencing would be installed around the margins of topsoil mounds to minimise the risk of sediment-laden runoff reaching watercourses. |

# Annex H: Outline Pollution Prevention and Control Management Plan

# 1 Introduction

## 1.1 Purpose

1.1.1 Measures for minimising pollution risks to prevent pollution incidents occurring as a result of the proposed construction activities are required. This pollution control and prevention plan has been developed to manage these risks.

1.1.2 The purpose of the plan is to identify the main risks of pollution occurring on the site, to identify and implement appropriate pollution prevention measures, and to reduce the effects of any pollution incidents that may occur. The plan should be read in conjunction with the Outline Ground and Surface Water Management Plan and the Outline CEMP.

## 1.2 Structure and Scope of the Outline Pollution Prevention and Control Management Plan

1.2.1 The document comprises an Outline Pollution Control and Prevention Plan and is based on the information available at the outline design stage. As the detailed design progresses, the Plan would be reviewed and updated accordingly. The final Pollution Control and Prevention Plan would be agreed with Natural England (NE) prior to the start of construction.

1.2.2 The plan would be implemented throughout the construction process of the scheme and all construction staff would be required to follow its provisions.

## 1.3 Responsibilities

1.3.1 The project manager would have overall responsibility for the construction of the new Scheme. A full-time Environmental Co-ordinator (ECO) would be appointed before construction commenced. Their main responsibility would be managing the environmental issues through construction. The specific tasks of the Environmental Co-coordinator are set out in CEMP.

1.3.2 For the purpose of the Outline Pollution Control and Prevention Plan, the key roles are set out in Table 1-2 below. Additional roles and responsibilities will be developed as the detailed design progresses.

**Table 1-2 Responsibilities details**

| Name | Position/Responsibilities | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Principle Contractor Environmental Manager | |
| | Site Manager | |

# 2 Pollution Risk Assessment

## 2.1 Preliminary pollution risk assessment

2.1.1 A preliminary pollution risk assessment has been undertaken to identify the main risks from the construction process. During the detailed design stage, the risk assessment would be updated as required.

2.1.2 The risk assessment will consider:

- The materials stored or transported and the condition of storage containers.
- Effects of accidents, flooding, vandalism and failure of containment.
- Location and proximity to local water courses, sensitive groundwater location and sites of special scientific interest.
- Surface water drains that flow off the site.
- Areas of unsurfaced ground.
- Operations and layout of the site.

2.1.3 Table 2-1 below sets out the materials that would be handled on site and activities that may be a hazard.

**Table 2-1 Possible materials hazards on site**

| Materials | Activities |
|---|---|
| Fuels/chemicals | Spillage during refilling (overfilling or poor handling)<br>Damaged or leaking storage containers<br>Equipment and containment failure |
| Sediment | Failure of pre-earthworks drainage<br>Failure of lateral bunds<br>Working too close to watercourse |
| Cementitious Dust | Inappropriate storage containers |

## 2.2 Site Design

### Location and Layout of Construction Compounds

2.2.1 Site compounds and car-parks will be located away from all surface water features and watercourses and outside of the floodplain.

2.2.2 Water pollution, storage of fuels, oils, wheel wash facilities, drainage and surface water run-off are detailed in the Outline Ground and Water Management Plan.

## 2.3 Pollution Incident Response Plan

### Response Plan

2.3.1 A pollution incident response plan will be designed for every construction compound. The plan will set out the actions to be taken in the event of a pollution incident and identify the pollution control equipment and the control devices and where they should be located.

2.3.2 The Response Plan would contain the following key information:

- external and internal list containing contacts 24 hour contact details for organizations that may need to be involved during or after an incident, for example, the emergency services, NE, or Cornwall Council.
- Chemical and waste inventory: an up-to-date record of all substances stored on site would be maintained together with an estimate of the likely quantities stored and product data sheets. The location of drums, containers or bulk storage vessels used for storing potentially polluting chemicals would be identified on the site plan. The inventory would be made accessible to emergency responders.
- Pollution prevention equipment inventory. This would include equipment and materials on site to deal with pollution incidents (for example spill kits, drain mats/covers, pipe blockers, absorbents) and contact details of staff trained in the use of specialist equipment (where relevant).
- Site plan showing access routes and meeting points for emergency services; areas or facilities used to store raw materials, products and wastes; watercourses located within or near the site; and site drainage.

2.3.3 Key actions for the response plan would include:

- stop the works immediately;
- contain the spillage to avoid escalation of the problem (refer to Pollution Control Hierarchy);
- notify the Environmental Coordinator immediately and any other key staff;
- evacuate staff if necessary;
- call for emergency services if necessary;
- implement pollution control equipment;
- document the cause of the incident and the action take;
- replace pollution control equipment where required.

**Practice**

2.3.4 Staff will be trained in the procedures which to follow if there is a pollution incident, in particular:

- where the personnel protective equipment and pollution control equipment is stored;
- how to use the equipment; and
- the location of pollution incident response plan.

2.3.5 In the development of the pollution incident response plan, drafts will be sent to NE, and/or Cornwall Council, as relevant, for comment, including advice on when to notify the regulators of a spill

## 2.4 Fire Plan

2.4.1 Action to be taken in the event of fire:

- Raise the alarm
- Call the fire Brigade
- On hearing the alarm, the area must be evacuated immediately and staff to assemble at the Muster point.
- Visitors, clients and contractors to be escorted to the same assembly point.

- Turn off generators, compressors and other powered equipment.
- Turn off heat producing equipment and shut cylinder valve.
- Attack fire with the equipment if it is safe to do so.
- Obey instructions from the Office Fire Marshall or supervisory staff.
- Do not re-enter the working area until told it is safe to do so. If necessary inform others who may be affected by effects of the fire (smoke near hospitals, schools etc.)

2.4.2 The capacity of the construction surface water management system will be sufficient to contain within the site boundaries the water rejected by a fire truck, avoiding direct spillage of potentially contaminated material into the natural watercourses within the SSSI.

## 2.5 Pollution Control Options

### Pollution Hierarchy

2.5.1 This section identifies the options that may be used to manage a pollution incident. The options are presented in the order of the preferred response.

2.5.2 Preferred response in order of priority:

1. Contain at Source
2. Contain close to the Source
3. Contain on the Surface
4. Contain in the Drainage
5. Contain on or in the watercourse

2.5.3 System Least Preferred response

### Spill Response Plans

2.5.4 The preliminary pollution risk assessment has identified that the most likely causes of a pollution incident would involve:

- spillage of oils or chemicals;
- a discharge of sediment-laden water or other pollutant into a watercourse; or
- firewater runoff.

2.5.5 Pollution control equipment would be appropriate for the location of the site and the chemical/substance targeted. For example, absorbent materials such as sand, spill granules, absorbent pads and booms will be kept at each site compound, on plant working near water courses and particularly at refuelling areas and where fuel or oil is stored.

2.5.6 Following a pollution incident, used pollution control equipment (for example, spill kits) would be disposed of appropriately and new/replacement equipment would be provided.

2.5.7 Some of the key actions that would be included in the action plans are as follows:

- Priority action plan to be implemented when possible:
  - Stop at source or as close as possible from the source (especially prior to the drainage system).
  - Stop pollutant spreading by using oil booms, terram wrapped barriers, hay bales as applicable.

  - Trace impacts further downstream to establish extent of pollution.
  - Review the activity that caused the pollution prior to restarting work.
- Least action plan to be implemented when it is impossible to contain the spill at source and it has entered a watercourse:
  - Stop the flow at point of discharge
  - Stop the flow spreading
  - Dam the flow with earth/sand/polythene/absorbent material;
  - Divert the flow from drains/watercourses where possible;
  - Black off drains with drain covers or sandbags
  - Check the site drainage plan- where will spill end up?

**Discovery of Contaminated Land**

- The following will need to be adhered to in relation to encountering previously unidentified chemical contamination and asbestos during construction works.
- Ensure personnel involved in the earthworks are briefed on the likely nature and type of soils that could indicate the presence of contamination (e.g. asbestos, discolouration, oils, odours, ash and clinker materials).
- If such material is encountered, the Environmental Co-ordinator would be immediately contacted to inspect the material.
- Testing of the material will be undertaken and the material will not be reused or removed until the results of the tests have been reviewed.

2.5.8 Contaminated materials will be handled and managed in line with the Remediation Strategy Report.

## 2.6 Training

2.6.1 This procedure will be discussed in the Site induction. It will be displayed on noticeboards along with contact details of relevant individuals.

- All personnel must attend a site induction before commencing work on the site. The induction will discuss the Pollution Control and Prevention Plan and also include key environmental issues on the project including the sensitivity of the watercourses, contamination, and air quality management. The briefing will emphasise the methods and working practices employed for protection, including emergency procedures for reporting and dealing with environmental incidents.
- All staff will receive relevant training on environmental issues throughout the construction of the project.
- All method statements will include an environmental section and any specific pollution control and prevention information.
- Drills of this emergency response plans will be carried out regularly to ensure understanding.

## 2.7 Monitoring, Review and Reporting

2.7.1 In accordance with the Environment Agency's Pollution Prevention Guidelines (PPGs) (although revoked they still maintain relevant as best practice guidance until updates are made available), and relevant construction industry guidance including CIRIA, best practice measures to prevent pollution will be implemented during the construction of the Scheme.

2.7.2 Should a situation arise where our proposed mitigation is not adequate, this plan will be reviewed. It will also be reviewed quarterly by the Environmental Co-ordinator to ensure it is up to date and accurate.

2.7.3 Specific monitoring requirements will be detailed. Nominated staff will carry out regular site inspections to control measures are in place and adhered to during the works.

2.7.4 Any instances of pollution or spill will be reported immediately to the Environmental Co-ordinator who will investigate and communicate investigation's conclusions to the project team to aid continuous improvement and to prevent reoccurrence of the event.

2.7.5 Records will be produced to show compliance with our Pollution Control and Prevention Plan, including inspections records, site plans and progress reports

2.7.6 Surface water monitoring will be undertaken to demonstrate no adverse effects on water quality during construction works. An appropriate monitoring schedule and programme will be agreed with NE.

# Annex I: Outline Arboricultural Method Statement and Tree Protection Plan

# 1 Introduction

## 1.1 Purpose

1.1.1 The Arboricultural Method Statement must ensure the safe and healthy retention of all trees and hedges to be retained on this scheme.

1.1.2 The arboricultural method statement will describe how trees and hedges will be protected and managed during construction. It will be based on the information available at the DCO application stage and will need to be updated. The purpose of the arboricultural method statement will be to explain:

- how and when the protection measures should be installed; and
- how they will be maintained for the duration of construction.

1.1.3 Integral to achieving this goal is the implementation of the special construction details and protection methods detailed within this report.

## 1.2 Structure and Scope of the Outline Arboricultural Method Statement and Tree Protection Plan

1.2.1 This document comprises an Outline Arboricultural Method Statement and is based on the information available at the preliminary design stage. As the detailed design progresses, the plan would be reviewed and updated accordingly.

1.2.2 The plan would be implemented through the construction of the scheme and all construction staff would be required to follow its provisions.

1.2.3 The arboricultural method statement must be read in conjunction with the tree protection plan.

1.2.4 A Tree Protection Order (TPO) is present at chainage 3737 to 3850. This is illustrated on the “Tree Protection Plan – Sheet 3” of Volume 6, Document Ref 6.4 Appendix 7.6 Arboricultural Impact Assessment. It is proposed that the drainage ditch be designed such that only scrub and small trees are removed and all large trees are retained.

1.2.5 Due to the presence of the TPO, no works can commence until Cornwall Council has granted its approval to a site specific Arboricultural Method Statement (AMS) for temporary works located at chainage 3737 to 3850.

## 1.3 Responsibilities

1.3.1 It is the Contractor’s responsibility to ensure that the details of this arboricultural method statement and any agreed amendments are known and understood by all site personnel. Copies of the agreed documents will be available on site and the site manager will brief all personnel who could have an impact on trees on the specific tree protection requirements. This will be a part of the site induction procedures and written into appropriate site management documents.

1.3.2 Following detailed design of the drainage ditch at Chainage 3737 to 3850, a detailed Arboricultural Method Statement (AMS) and Tree Protection Plan will be

produced in accordance with BS 5837:2005 'Trees in relation to Construction – Recommendations'. Input will be provided by an arboricultural consultant. During construction a watching brief will also be required.

1.3.3 The Arboricultural Method Statement will ensure the safe and healthy retention of all trees to be retained on this scheme. Integral to achieving this goal is the implementation of the special construction details and protection methods to be detailed within the Arboricultural Method Statement (AMS) and Tree Protection Plan.

1.3.4 The key responsibilities for tree related issues on this site are provided below.

**Table 1-2 Responsibilities details**

| Name | Position/Responsibilities | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Site Manager | |
| | Principle Contractor Environmental Manager | |
| | Local Authority Arboricultural Officer | |
| | Ecological Consultant | |
| | Arboricultural Consultant | |
| | Landscape Architect | |

1.3.5 The Method Statement must be made available to all contractors and operatives on the site during the construction process so that they fully understand the importance of the measures set out for tree protection.

1.3.6 The controlling authority is Cornwall Council.

# 2 Outline Arboricultural Method Statement

2.1.1 The detailed Arboricultural Method Statement will provide an instruction manual and work schedule for the site manager to inform tree and hedge root protection measures prior to and during construction. The method statement will include information regarding the following:

- A schedule of remedial tree surgery and tree removal works to be completed prior to the commencement of all other operations on site
- The final location, specifications and installation details of the construction exclusion zones to include both tree protection fencing and ground protection measures
- The final details and specifications for the special engineering measures where works are proposed to take place within the RPAs of trees to be retained
- Arrangements for works at the tree protection orders in order to undertake special engineering measures.
- The location of site compounds, site offices and facilities, including parking arrangements, and areas for the storage of materials. Access routes for heavy plant and machinery, delivery vehicles and issues related to lifting plans for

proposed crane use or access to site where aerial tree crown parts may affect intended operations.

- Positions of responsibility on site, communication channels and details of intended contractors to be employed to undertake all arboricultural-related operations
- A programme setting out the sequence and timing for all works related to the trees on the site
- The system to be employed for monitoring the completion of each stage of the works and the protection measures specified
- The appointment of an Arboricultural Clerk of Works. This will be an appropriately qualified and experienced person charged with the supervision and monitoring of the works related to trees and the reporting of satisfactory completion of operations to the client and the Local Planning Authority.

# Annex J: Methodology for the Milestone Protection Management Plan

# 1 Introduction

## 1.1 Purpose

1.1.1 This purpose of this methodology is to protect the historic carved milestones which will be affected by the A30 Chiverton to Carland Cross Scheme. The locations of the individual stones are shown on the map below

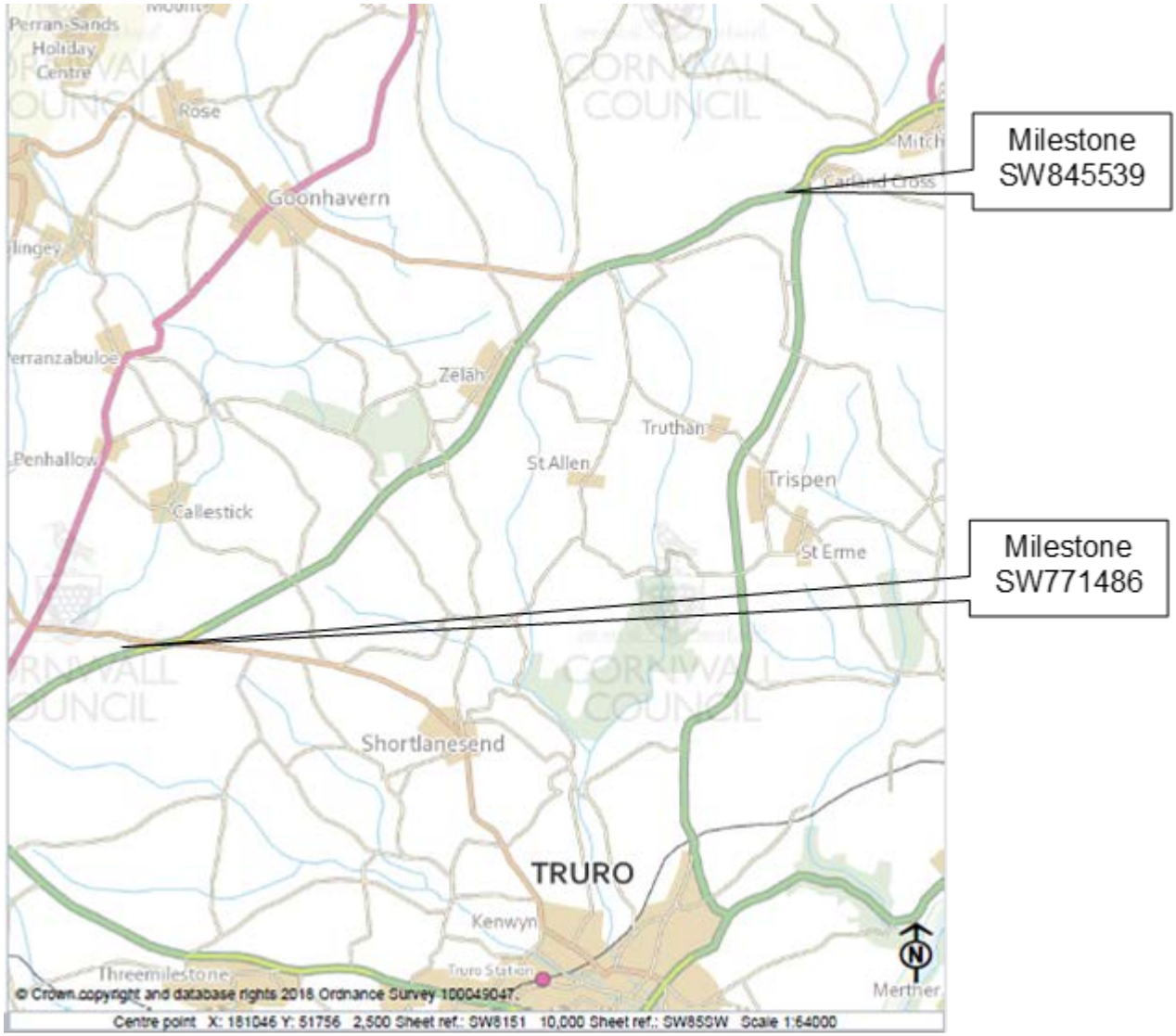



**Figure 1-1 Milestone Location**

## 1.2 Structure and Scope of the Outline Milestone Protection Management Plan

1.2.1 This method statement has been compiled to ensure the safe removal, storage and replacement of the two milestones affected by the construction works for the scheme.

**Milestone at SW771486 (adjacent to Chybucca Junction)**

1.2.2 This milestone will remain alongside the 'old A30' in its current position. This aligns with the suggestion from Ian Thompson of the Milestone Society, maintaining the integrity of the group of milestones.

**Milestone at SW845539, approx. 253m south-west of Carland Cross (adjacent to Carland Cross)**

1.2.3 The expectation is that the remaining section of the existing A30 to the old Carland Cross roundabout would be retained for use by walkers, cyclists and horse-riders (non-vehicular users). There will be a change to the surface of the old A30 which will complement the setting of the milestone. Furthermore, this will make it accessible for those wanting to follow the milestones.

1.2.4 During construction, the contractor may choose to temporarily remove the milestones to avoid them being damaged in any way.

## 1.3 Responsibilities

**Table 1-3 Responsibilities details**

| Name | Position/Responsibilities | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Site Manager | |
| | Principle Contractor Environmental Manager | |
| | Local Authority Cultural Heritage Officer | |
| | Archaeologist Consultant | |
| | Milestone Society | honsec@milestonesociety.co.uk |
| | Historic England | southwestcasework@historicengland.co.uk |

# 2 Methodology for protection and movement of milestones

## 2.1 General

2.1.1 Two Grade II listed milestones (NHLE Nos. 1140923 and 1394843) will require protection from damage during construction. The scheme is a Nationally Significant Infrastructure Project which means Listed Building Consent from Cornwall Council planning authority is not needed. Instead, the scheme is subject to a Development Consent Order, which will provide all the necessary permissions for the scheme to be constructed including any works or impacts on listed features.

2.1.2 The contractor must take care when moving any stone, to ensure that it is not damaged in any way. The stone should be lifted using webbing strops, should be

carried rather than dragged along the ground, and should be laid down on pieces of timber, rather than directly onto the ground.

## 2.2 The Sites

### Milestone at SW771486

https://www.britishlistedbuildings.co.uk/101140923-milestone-at-sw-771486-ne-perranzabuloe#.Ww19A0gvxaQ

2.2.1 This is an 18th Century non-turnpike milestone.

- Tall slender painted dressed granite monolith square-on-plan with pyramidal head.
- Shallow recessed panel to 3 sides with inscription facing road (south) intact with Arabic numerals 34 over the letter L all in relief.
- West and east panels defaced and with recut inscriptions. West face has BODMIN over 23M in simple incised lettering. Below this is vestige of relief letter R for Redruth. East side has horizontal inscription in simple incised lettering of PENZANCE 24.

### Milestone at SW845539

2.2.2 This Grade II listed milestone is approximately 1m in height and comprises square on plan with a pyramidal head, made from granite stone and painted white.

## 2.3 Methodology for movement of milestones

### Recording before stones are moved

2.3.1 For stones that are to be removed, recording and labelling is important, to make sure that the stones can be repositioned as accurately as possible. The following approach should be taken:

- Using a hand-held GPS, record the grid reference. Do not assume that the grid reference given in this document is accurate (mistakes can be made!).
- Record the orientation of the main inscribed faces using a compass.
- Take photos of the stone from several angles, to record the setting and show how deeply buried it is, its condition prior to removal, and its setting in relation to any features that may help in repositioning it accurately (as far as possible, given the major changes to setting that are about to happen).
- Measure the height of the stone above ground level so that it can be restored to the correct height
- Ensure that this data is stored securely for the duration of the duelling project

2.3.2 This recording should be done by a suitable qualified archaeologist employed by the contractor.

### Lifting Individual Stones

2.3.3 The contractor will:

- Dig carefully around the stone to loosen before lifting.
- Lift the stone with webbing strops, not a chain or rope.

- Lift using a machine (tractor or digger) with fore-loader.
- Place the stone carefully in a trailer on 3x3 inch timber posts or similar to protect it from damage or abrasion during transport to store **or** place the stone in a trailer on a pallet so the once in store, the pallet can be lifted from the trailer using a fork lift.
- Label the stone with its site number, to ensure that the right stone is put back in the right place. This can be done using chalk; or with a label tied securely around the stone.

2.3.4 A suitable qualified archaeologist will be present throughout to ensure there is no damage to the stone.

**Storing Stones**

2.3.5 Stones should not be laid directly on the ground but should be laid on pallets or 3x3 inch timber posts, and covered with tarpaulin to protect from damage.

**Replacing stones**

General

2.3.6 The two stones should be replaced in their exact original positions or as close to this as possible. This should be determined with the advice of the employer's archaeologist and using GPS.

2.3.7 Before they are repositioned, the archaeologist should consult the initial recording to make sure that the stone is put back in the correct orientation and at the right depth. All inscriptions should be visible and the depth will be indicated by the finish of the worked masonry.

2.3.8 If for any reason a stone cannot be put back in the same place, it should be repositioned as close as possible to the original location –

- On the same *side* of the road as previously.
- To the same orientation as previously.
- Where the stone will be visible.
- Where there will be safe access for maintenance.
- Where the stone will be as safe as possible from traffic collision.

Methodology for re-erection

2.3.9 The contractor will:

- Dig a hole of appropriate size. This will be advised by the suitably qualified archaeologist and will be as close as possible to the stone's measurements across at ground level, and to a depth which reflects the level to which it should be buried.
- Lift the stone with webbing strops.
- Lift the stone from the trailer using a tractor or digger with fore-loader.
- Lower the stone gently into the hole.
- Check that it is upright, trigging with wooden wedges, small stones or pieces of slate if necessary.
- Backfill hole, tamping well to ensure the stone is stable and secure. Do not use cement to fix it.
- Brush the stone lightly to remove any soil and debris.

Note: the stones should not be set in cement.

Gravel Margins

2.3.10 The contractor, in discussion with the suitably qualified archaeologist, will consider whether to install a gravel margin, to prevent vegetation from growing back too quickly and to maintain the visibility of the stones in the future, especially if future maintenance is likely to be a difficulty. This may depend on the final positioning of the stones in relation to the new road.

2.3.11 The following specification for forming a gravel margins around a stone is from English Heritage Guidance on the Conservation of Milestones (Parry 2006, 12).

*"In areas of vegetation the purpose of the margin is to reduce the rate at which new vegetation colonises the ground around the stone. Therefore the margin needs to be as wide as possible, 900 mm from the face of the stone on all sides would be a good starting point if space is available. In paved areas, the margin is intended as a 'breather zone' and 300 mm will be sufficient. The margin should be excavated to a depth of 100 mm, exposing the natural substrate, lightly compacted. A treated timber edge board should be fixed on timber stakes to define the perimeter of the margin. The excavated area should be treated with weed killer and overlaid with a geotextile membrane. The margin should then be backfilled with clean pea gravel to the full depth of the excavation."*

Final Recording

2.3.12 To be undertaken by the employer's archaeologist.

- Using a hand-held GPS, record the new grid reference (where it is known to have changed).
- Take a photo of the stone to record its final restoration. This will be archived and sent to Historic England and the Milestone Society with the location.

## 2.4 References

Websites

http://www.heritagegateway.org.uk/gateway/ English Heritage's online database of Sites and Monuments Records, and Listed Buildings

http://www.milestonesociety.co.uk/conservation.html

# Annex K: Outline Noise and Vibration Management Plan

# 1 Introduction

## 1.1 Purpose

1.1.1 The purpose of this Outline Noise and Vibration Management Plan is to set out measures for the Contractor to control and manage noise and vibration from machinery and construction.

1.1.2 The effects of noise and vibration from construction sites will be controlled by introducing management and monitoring processes to ensure that best practicable means (BPM) are planned and employed during construction.

## 1.2 Structure and Scope of the Outline Noise and Vibration Management Plan

1.2.1 As part of the contractors' detailed CEMP, a noise and vibration management plan will be prepared and will set out these processes. The plan will include management and monitoring processes to ensure as a minimum:

- Integration of noise control into the preparation of method statements;
- Ensuring proactive links between noise management activities and community relations activities;
- Preparing details of site hoardings, screens or bunds that will be put in place to provide acoustic screening during construction, together with an inspection and maintenance schedule for such features;
- Developing procedures for the installation of noise insulation or provision of temporary re-housing and to ensure such measures are, where required, in place as early as reasonably practicable;
- Preparing risk assessments to inform structural surveys of buildings and structures which may be affected by vibration from construction;
- Developing a noise and vibration monitoring protocol including a schedule of noise and vibration monitoring locations and stages during construction of the scheme when monitoring will be undertaken;
- Preparing and submitting Section 61 consent applications;
- Undertaking and publishing all monitoring required to ensure compliance with all acoustic commitments and consents; and
- Implementing management processes to ensure ongoing compliance, improvement and rapid corrective actions to avoid any potential non-compliance.

## 1.3 Responsibilities

**Table 1-4 Responsibilities details**

| Name | Position/Responsibilities | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Site Manager | |
| | Principle Contractor Environmental Manager | |

## 1.4 Measures to reduce potential noise and vibration impacts

**Best practicable means**

1.4.1 The contractor will assess, consider and implement BPM at all times in order to control noise and vibration from the works.

1.4.2 BPM is defined in Section 72 of the *Control of Pollution Act 1974* and Section 79 of the *Environmental Protection Act 1990* as those measures which are 'reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications'.

1.4.3 The contractor will consider mitigation in the following order:

- BPM, including:
  - Noise and vibration control at source - for example the selection of quiet and low vibration equipment, review of construction programme and methodology to consider quieter methods (including non-vibratory compaction plant, where required), location of equipment on site, control of working hours, the provision of acoustic enclosures and the use of less intrusive alarms, such as broadband vehicle reversing warnings; and
  - Screening - for example local screening of equipment, perimeter hoarding or the use of temporary stockpiles.
- Then, if situations arise where despite the implementation of BPM, the noise exposure exceeds the criteria defined in this Noise and Vibration Management Plan (NVMP), the contractor may offer:
  - Noise insulation; or ultimately
  - Temporary re-housing.

1.4.4 The recommendations of BS 5228-1:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites – Noise[4], and BS 5228-2:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites – Vibration[5], will be implemented, together with the specific requirements of this NVMP.

# 2 Noise and vibration management

## 2.1 Section 61 consents

2.1.1 The contractor will seek to obtain consents from the relevant local authority under Section 61 of the *Control of Pollution Act 1974* for the proposed construction works, excluding non-intrusive surveys. Applications will be made to the relevant local authority for a Section 61 consent at least 28 days before the relevant work is due to start or earlier if reasonably practicable.

2.1.2 Details of construction activities, prediction methods, location of sensitive receivers and noise and vibration levels will be discussed with the relevant local authority, or authorities, both prior to construction work and throughout the construction period. Prediction, evaluation and assessment of noise and vibration

[4] Hereafter referred to as BS5228-1
[5] Hereafter referred to as BS5228-2

as well as discussion between the employer's representative and its contractor and the relevant local authority will continue throughout the construction period.

2.1.3 Unless otherwise agreed with the relevant local authority, noise levels will be predicted in accordance with the methods set out in BS 5228 – 1.

2.1.4 All construction noise levels will be predicted or measured at a distance of 1m from any affected eligible facade, which must have windows to bedrooms or living rooms.

2.1.5 Annex A of BS 5228-1 provides a flow diagram demonstrating the process of a Section 61 application.

2.1.6 The employer's representative and/or the contractor will seek to agree with local authorities a common format and model consent conditions for Section 61 applications or any dispensations and variations to an existing consent. An example application form is included in Section 1.7 at the end of this Annex.

2.1.7 The application for a Section 61 consent will require noise (and where appropriate vibration) assessments to be undertaken and BPM measures set out to manage noise associated with construction of the scheme. The contractor will submit the assessment initially to the employer's representative for review, prior to submission to the relevant local authority.

2.1.8 The contractor will carry out noise (and vibration where appropriate) predictions for Section 61 applications.

2.1.9 In the event that works for which Section 61 consent has been applied for have to be rescheduled or modified (e.g., method or working hours) for reasons not envisaged at the time of submitting the Section 61 consent application, the contractor will apply for a dispensation or variation from the appropriate local authority, before commencing those works, at the time specified within the *Control of Pollution Act 1974.*

2.1.10 The dispensation will be sought by means of an application to vary the agreed matters, setting out the revised construction programme or method and the relevant noise calculations.

## 2.2 Noise insulation and temporary re-housing policy

2.2.1 Highways England/employer's representative will implement a noise insulation and temporary rehousing policy. The policy is intended to provide additional protection to residents in the event that it is not practicable to mitigate airborne noise, or reduce their exposure to it, to levels that are tolerable during certain intensive construction phases.

2.2.2 The contractor will submit a noise insulation/temporary rehousing appraisal at least six[6] months prior to starting that phase of work on site or such time appropriate to the scale and nature of the works. It is essential that the assessment is carried out early enough so that noise insulation can be installed before the start of the works predicted to exceed noise insulation or temporary re-housing criteria.

[6] Where noise insulation is potentially required at a listed building the appraisal shall be submitted at least nine months prior to starting of the phase of w ork on site.

2.2.3 Typically, a noise insulation package will include secondary glazing, an alternative method of ventilation and, on certain aspects, venetian blinds.

2.2.4 The contractor will use BPM to minimise the extent to which noise insulation work or temporary re-housing of occupiers of dwellings adjacent to the works needs to be considered.

2.2.5 Notwithstanding the measures set out in this NVMP and any Section 61 consents, noise insulation or temporary re-housing will be offered to qualifying parties when:

- noise levels are predicted or measured by the contractor to exceed the relevant trigger level defined in Table 2-1 at that property for at least ten days out of any period of fifteen consecutive days or alternatively 40 days in any six month period;
- the property complies with all other requirements of the *Noise Insulation (Amendment) Regulations 1988*;
- the property is lawfully occupied as a permanent dwelling; and
- in respect of insulation, noise insulation does not already exist that is of an equivalent standard to that which would be allowed for under the *Noise Insulation (Amendment) Regulations 1988*.

**Table 2-1 Noise thresholds for noise insulation/temporary re-housing**

| Day | Time (hrs) | Average period T | Noise insulation trigger level $L_{pAeq,T}$(dB)*/** | Temporary re-housing trigger level $L_{pAeq,T}$(dB)*/** |
|---|---|---|---|---|
| Monday-Friday | 07:00-08:00 | 1 hr | 70 | 80 |
| | 08:00-18:00 | 10 hrs | 75 | 85 |
| | 18:00-19:00 | 1 hr | 70 | 80 |
| | 19:00-22:00 | 1 hr | 65 | 75 |
| Saturday | 07:00-08:00 | 1 hr | 70 | 80 |
| | 08:00-13:00 | 5 hrs | 75 | 85 |
| | 13:00-14:00 | 1 hr | 70 | 80 |
| | 14:00-22:00 | 1 hr | 65 | 75 |
| Sunday and public holidays | 07:00-22:00 | 1 hr | 65 | 75 |
| Any day | 22:00-07:00 | 1 hr | 55 | 65 |

*Proposed Scheme construction sound only. Trigger levels are defined as 1m in front of the closest facade of a habitable room.

**Where the current ambient noise level is greater than the noise insulation trigger level:

a) the ambient noise level shall be used as the noise insulation trigger level, and

b) the ambient noise level +10dB shall be used as the temporary rehousing trigger level.

2.2.6

2.2.7 Highways England/employer's representative will develop and seek to agree with local authorities a noise insulation and temporary rehousing policy that will set out all roles, responsibilities and actions required in respect of these measures.

2.2.8 Highways England/employer's representative will consider at its discretion applications supported by evidence for noise insulation or temporary rehousing from occupiers who may have special circumstances. Special circumstances could include night workers, those working in home occupations, local businesses or buildings that provide community facilities requiring a particularly quiet environment and those with a medical condition which will be seriously

aggravated by construction noise, and provide noise insulation or temporary rehousing where it is demonstrated that this is necessary.

## 2.3 Vibration thresholds and actions

2.3.1 Criteria and/or procedures for vibration control are specified for three purposes and assessed using three different sets of parameters:

- To protect the occupants and users of buildings from disturbance, for which vibration dose values are assessed (vibration dose values (VDVs) are defined and their application to occupants of buildings is discussed in *BS 6472- 1 Guide to evaluation of human exposure to vibration in buildings – vibration sources other than blasting, 2008*);
- To protect buildings from risk of physical damage, for which peak component particle velocities are assessed in accordance with *BS 7385-2 Evaluation and measurement for vibration in buildings. Guide to damage levels from groundborne vibration, 1993*; and
- To protect particularly vibration-sensitive equipment and processes from damage or disruption, for which peak component acceleration, velocity or displacement are assessed as appropriate to each process or item of equipment.

2.3.2 In some buildings, two or three of the above parameters may apply, and in those cases Highways England will require its contractor to evaluate the criteria separately. In establishing criteria, controls and working methods, the contractor will take account of guidance in *BS 6472-1 Guide to evaluation of human exposure to vibration in buildings – Part 1: Vibration sources other than blasting 2008*: BS 5228 – 1 and BS 5228 – 2, *ISO 4866: Mechanical vibration and shock, vibration of fixed structures. Guidelines for the measurement of vibrations and evaluation of their effects on structures* and *BS 7385- 2 Evaluation and measurement for vibration in buildings – Part 2: Guide to damage levels from groundborne vibration 1993.*

2.3.3 In the following sections vibration thresholds are set out. The thresholds are trigger levels at which a set of actions will be carried out by the contractor. Except where stated otherwise, they are not designed to be maximum permitted levels.

### Protection of building occupants from disturbance

2.3.4 To protect the occupants and users of buildings from disturbance, BPM will be used by the contractor to control vibration levels so that the vibration dose values in Table 2-2, as measured in accordance with *BS6472-1 Guide to evaluation of human exposure to vibration in buildings – Part 1: Vibration sources other than blasting* (2008) are not routinely exceeded (considered to be ten days in any 15 consecutive days) as a result of the works.

**Table 2-2 Vibration trigger levels for protection of occupants of buildings from disturbance**[7]

| Building type | Time (hrs) | VDV ($ms^{-1.75}$) |
|---|---|---|
| | 07:00-23:00 | 0.4 |

[7] Based upon the professional judgement of suitably qualified and experienced specialists, as listed in Appendix 11 Competent expert evidence.

| | | |
|---|---|---|
| Eligible dwellings[8] | 23:00-07:00 | 0.2 |
| Education buildings, offices and similar[9] | Over normal period of use (daytime) | 0.8 |
| Commercial[10] | Over normal period of use (daytime) | 1.6 |

2.3.5 The vibration thresholds in Table 2-3 will be weighted in accordance with BS6472-1 Guide to evaluation of human exposure to vibration in buildings – Part 1: Vibration sources other than blasting, 2008.

2.3.6 For application of threshold levels, it will be assumed that people are standing or sitting during daytime, and lying down during night-time hours as defined in the table.

2.3.7 The orientation of the person is important as it determines the vibration weighting factor to be applied.

2.3.8 When considering human response to vibration BS 5228 – 2 provides other guidance levels in terms of peak particle velocity (PPV), which are presented in Table 2-3. Where information is not available to complete an assessment against the trigger levels in Table 2-2, an assessment shall be undertaken using the guidance in BS5228-2.

### Table 2-3 Guidance on effects of vibration levels[11]

| Vibration level[12] [13] [14] | Effect |
|---|---|
| 0.14 mm/s | Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration. |
| 0.3 mm/s | Vibration might be just perceptible in residential environments. |
| 1.0 mm/s | It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents. |
| 10 mm/s | Vibration is likely to be intolerable for any more than a very brief exposure to this level in most building environments. |

[8] Measured on a normally-loaded floor of any bedroom or living room. For this purpose, eligible dwellings include dwelling houses, residential institutions, hotels, and residential hostels.
[9] Measured on a normally-loaded floor of areas where people normally work. This category of receiver will include all areas where clerical work meetings and consultations are regularly carried out (e.g. Doctors' surgeries, day-care centres but not shop floors of industrial premises).
[10] Measured on a normally-loaded floor of areas where people normally work. Commercial premises include retail and wholesale shops.
[11] Based upon the professional judgement of suitably qualified and experienced specialists, as listed in Volume 6 Document Ref 6.4 Appendix 11 Compentent expert evidence.
[12] The magnitudes of the values presented apply to a measurement position that is representative of the point of entry into the recipient.
[13] A transfer function (which relates an external level to an internal level) needs to be applied if only external measurements are available.
[14] Single or infrequent occurrences of these levels do not necessarily correspond to the stated effect in every case. The values are provided to give an initial indication of potential effects, and where these values are routinely measured or expected then an assessment in accordance with BS 6472-1 or -2, and/or other available guidance, might be appropriate to determine whether the time varying exposure is likely to give rise to any degree of adverse comment.

2.3.9 Temporary respite will be provided by the contractor if the following levels are triggered (using the same temporal scope as the noise insulation and temporary rehousing policy):

- The predicted or measured vibration exceeds the following trigger values set at the centre of any floor inside the property (highest vibration):
  - Daytime (7am to 11pm): a vibration dose value ($VDV_b$) of $0.8ms^{-1.75}$; and
  - Night-time (11pm to 7am): a vibration dose value ($VDV_b$) of $0.4ms^{-1.75}$.
- The predicted or measured groundborne noise exceeds as 45 dB $L_{ASmax}$ measured near, but not at, the centre of any room in a property.
- The predicted or measured groundborne noise or vibration exceeds the relevant trigger value for a period exceeding one day.

2.3.10 Details of the temporary respite process will be included within the noise insulation and temporary rehousing policy.

**Protection of buildings from damage**

2.3.11 To protect buildings from damage, Highways England/employer's representative will require its contractor to use BPM to control vibration levels so that the peak particle velocity (PPV) in Table 2-4, as measured in accordance with *BS6472-1 Guide to evaluation of human exposure to vibration in buildings – Part 1: Vibration sources other than blasting 2008*, are not exceeded as a result of the works at the building foundation unless agreement is sought from the local authority.

**Table 2-4 Vibration trigger levels for building damage**[15]

| Category of building | Impact criteria: (PPV at building foundation) | |
|---|---|---|
| | Transient vibration | Continuous vibration |
| Structurally sound buildings | ≥12 mm/s | ≥6 mm/s |
| Potentially vulnerable buildings | ≥6 mm/s | ≥3 mm/s |

2.3.12 To determine whether a detailed assessment needs to be undertaken or whether the levels in Table 2-4 are likely to be exceeded, or whether there is a potential for building damage, the contractor will carry out a scoping vibration assessment. Activities requiring an assessment could include vibratory compaction, impact or vibratory piling and other driven processes.

2.3.13 If predicted vibration levels exceed 1mm/s component PPV at occupied residential buildings or 3mm/s PPV at occupied commercial buildings more detailed assessment should be carried out in accordance with *BS 7385-2 Evaluation and measurement for vibration in buildings – Part 2: Guide to damage levels from groundborne vibration 1993*. If this identifies that people occupying buildings may experience levels in excess of the threshold values in Table 2-4 those potentially affected will be notified as soon as practicably possible in advance of the works. The notification will describe the nature and duration of the works and any associated proposals for vibration monitoring.

[15] Based upon the professional judgement of suitably qualified and experienced specialists, as listed in Volume 6 Document Ref 6.4 Appendix 11 Compentent expert evidence. .

2.3.14 Highways England/employer's representative will require its contractor to be cognisant of the advice given in BS ISO 4866 Mechanical vibration and shock, vibration of fixed structures. Guidelines for the measurement of vibrations and evaluation of their effects on structures and BS 7385-2 Evaluation and measurement for vibration in buildings – Part 2: Guide to damage levels from groundborne vibration 1993.

2.3.15 Highways England/employer's representative will require its contractor to notify and consult it and the relevant local authority regarding any works predicted to generate a PPV above 10mm/s. Where it is agreed that there is no reasonable or practicable means to reduce predicted or measured vibration then the contractor will:

- Agree with Highways England/employer's representative and seek to agree with the local authority under the relevant Section 61 consent(s), monitoring for vibration and strain induced in the building during the works;
- Seek to agree with occupiers of properties;
- The surveys to be carried out and any consequent actions;
- Any additional reasonable and practicable mitigation to be provided for occupants;
- Carry out a condition survey before and after the relevant works; and
- Advise the local authority through the relevant Section 61 consent application.

2.3.16 In addition, any old buildings, or buildings that may be unusually vulnerable to vibration, that are located within 50m of any activities that may give rise to significant vibration shall be identified.

2.3.17 Where the predicted vibration at the foundations of such buildings exceeds 5mm/s PPV then Highways England/employer's representative will require its contractor to undertake an initial structural survey of the building. Based on the survey, the level of vibration above which condition surveys and continuous vibration monitoring are required will be confirmed and agreed with the building owner. The local authority will be notified through the relevant Section 61 consent application.

2.3.18 Where the condition and vibration monitoring surveys demonstrate that vibration from the works has given rise to building damage then Highways England/employer's representative will require its contractor to make good that damage.

**Protection of particularly vibration-sensitive equipment/processes**

2.3.19 The contractor will endeavour to avoid any impact on sensitive equipment. Any actions to control or mitigate impacts will be agreed between its contractors and the operator of the equipment. The local authority will be notified through the relevant Section 61 consent application.

## 2.4 Monitoring

2.4.1 Monitoring will include physical measurements and observational checks/audits.

2.4.2 The contractor will undertake and report noise and vibration monitoring, including real time noise and vibration monitoring, as is necessary to ensure and

demonstrate compliance with all noise and vibration commitments, the requirements of this Outline CEMP and any Section 61 consent(s).

2.4.3 Regular on site observation monitoring and checks/audits will be undertaken to ensure that BPM is being employed at all times. The site reviews will be logged and any remedial actions recorded. Such checks will include:

- hours of working;
- presence of mitigation measures, equipment (engines doors closed, airlines not leaking, etc.) and screening (location and condition of local screening, etc.);
- number and type of plant;
- construction method; and
- where applicable, any specific Section 61 consent conditions.

2.4.4 The monitoring and compliance assurance process will be set out in the contractors' noise and vibration management plan, as part of their CEMP.

2.4.5 The Section 61 applications will include a detailed description of the monitoring and monitoring locations proposed for the particular works covered by the consent application.

## 2.5 Example application form for Section 61

CONTROL OF POLLUTION ACT 1974

EXAMPLE APPLICATION FORM FOR SCTION 61 CONSENT

To be developed further (with explanatory notes) in consultation with the relevant local authorities

| | |
|---|---|
| Submission No: | |
| Local Authority Reference | |

To the[1]

I/WE HEREBY MAKE APPLICATION for prior consent in respect of works to be carried out on the [construction] site(s) specified below, under section 61 of the Control of Pollution Act 1974.

Signed[2] ……

Date ……

Name and address of applicant[2]

(in block letters please)

……
……

Telephone No: ……..

email: ……

[1] Insert name of Local Authority

[2] Where application made by a Company the signature of a Director or the Company Secretary and the address should be the Company's registered office.

(Note: Supplementary sheets should be used for fuller descriptions and additional information as required)

| | |
|---|---|
| Address or location of proposed works | |
| Name and address of main contractor<br><br>Telephone No. | |
| Particulars of works to be carried out | |
| Methods to be used in each stage of development | |
| Hours of Work | |
| Number, type and make of plant and machinery (including heavy vehicles) stating Sound Power Levels | |

| | |
|---|---|
| Proposed steps to manage noise and vibration | |
| Predicted noise levels | |
| Approximate duration of works | |
| Site plan (attached, yes/no) | |
| Other Information | |
| List of Plans and documents attached | |

# Annex L: Outline Air Quality Management Plan

# 1 Introduction

## 1.1 Purpose

1.1.1 The purpose of the Outline Air Quality Management Plan (AQMP) is to set out the management of dust, air pollution, odour and exhaust emissions during the construction works. The contractor will manage dust, air pollution, odour and exhaust emissions in accordance with best practicable means (BPM), which include the following:

- reference to the general site management and good housekeeping procedures (relevant to limiting dust and air pollution);
- controls and measures to control or mitigate the effect of potential adverse effects caused by the construction works; and
- dust and air pollution monitoring measures to be employed during construction of the project.

## 1.2 Structure and Scope of the Outline Air Quality Management Plan

1.2.1 This is an outline AQMP which will be developed by the Contractor as the detailed design progresses.

1.2.2 The scope of the plan will comprise:

- Best practical means for site management;
- Measures to limit emissions from construction plant and vehicles
- Measures to limit pollution from transportation, storage and handling of materials;
- Measures to manage dust from Haul roads;
- Measures to limit dust pollution from demolition activities
- Measures to limit dust pollution from excavations and earthworks activities
- Measures to limit dust pollution from drilling activities; and
- Measures to limit dust pollution from processing, crushing, cutting and grinding activities.

## 1.3 Responsibilities

**Table 1-5 Responsibilities details**

| Name | Position/Responsibilities | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Site Manager | |
| | Principle Contractor Environmental Manager | |

# 2 Air Quality Management

## 2.1 Legislation and guidance

2.1.1 The contractor will reference, as appropriate, national/industry standards and codes of best practice and guidance when developing the AQMP including the following:

- Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites - Institute of Air Quality Management (IAQM, 2012);
- Guidance on the assessment of dust from demolition and construction - Institute of Air Quality Management (IAQM, 2014); and
- Statutory Process Guidance Notes PG3/01(12), PG3/08(12) and PG3/16(12).

## 2.2 Site management

2.2.1 Obligations for the contractors in relation to using best practicable means to prevent or counteract the effects of any nuisance are set out below.

2.2.2 The contractor will plan the site layout to locate machinery and dust-causing activities away from sensitive receptors, where reasonably practicable. The contractor will also use appropriate methods, such as the erection of hoardings or other barriers along the site boundary, where appropriate, to mitigate the spread of dust to any sensitive buildings or other environmental receptors.

## 2.3 Construction plant and vehicles

2.3.1 Measures will be implemented by the contractor to limit emissions from construction plant and vehicles, including the following, as appropriate:

- The contractor will operate construction plant in accordance with the manufacturer's written recommendations;
- All vehicles and plant will be switched off when not in use;
- Vehicle and construction plant exhausts should be directed away from the ground and be positioned at a height to facilitate appropriate dispersal of exhaust emissions;
- On plant likely to generate excessive quantities of dust beyond the site boundaries, enclosing, shielding or provision of filters will be employed. Items such as dust extractors, filters and collectors on drilling rigs and silos will be used;
- The movement of construction traffic around the site will be kept to the minimum reasonable for the effective and efficient operation of the site and construction of the scheme;
- Construction plant will be located away from site boundaries which are close to sensitive receptors where reasonable and practicable;
- Site access points will be designed to avoid queuing traffic;
- The use of diesel or petrol powered generators will be reduced by using mains electricity or battery powered equipment where reasonable and practicable;
- All non-road mobile machinery will use ultra-low sulphur tax exempt diesel where available and machinery with power outputs of over 37kW will be fitted with appropriate exhaust after-treatment from approved Energy Saving Trust list (achieving filtration efficiency of over 85%);

- Cutting and grinding operations will be conducted using equipment and techniques which incorporate appropriate dust suppression measures; and
- Vehicle, plant and equipment maintenance records will be kept on site and these will be made available to the employer's representative upon request.

## 2.4 Transportation, storage and handling of materials

2.4.1 Measures will be implemented by the contractor to limit pollution due to the transportation and storage of materials, including the following, as appropriate:

- Materials deliveries or loads entering and leaving the construction site will be covered by a fixed cover or sheeting appropriately fixed and suitable for the purposes of preventing materials and dust spillage. This will apply to the transport of materials by road, rail or waterway;
- Vehicles transporting materials within or outside the construction site will not be overloaded;
- Stockpiles and mounds will be kept away from sensitive receptors, watercourses and surface drains and sited to take into account the predominant wind direction;
- Stockpiles and mounds will be at a suitable angle of repose and avoid sharp changes in shape to prevent material slippage;
- Materials stockpiles will be enclosed or securely sheeted or kept watered by the contractor;
- Surfaces of long-term stockpiles, which give rise to a risk of dust or air pollution, will be stabilised or be covered with appropriate sheeting;
- Fine dry material will be stored inside buildings or enclosures;
- Mixing of large quantities of concrete or bentonite slurries will be undertaken in enclosed or shielded areas;
- The number of handling operations for materials will be kept to the minimum practicable;
- Materials handling areas will be maintained to constrain dust emissions and appropriate measures such as watering undertaken to reduce or prevent escape of dust from the site boundaries; and
- Mixing of grout or cement-based materials will be undertaken using a process suitable for the prevention of dust emissions.

## 2.5 Haul routes

2.5.1 Haul routes will be provided on site by the contractor for use by construction vehicles to access works areas. The construction and maintenance of haul routes will include the following measures, as appropriate:

- The maintenance of haul routes to control dust emissions as far as reasonably practicable, taking into account the contractors intended level of traffic movements;
- Inspection of haul routes regularly and their prompt repair if required;
- Reuse of haul route materials where the locations of haul routes change during the course of construction;
- Provision of areas of hard-standing at site access and egress points to be used by any waiting vehicles;
- Methods to clean and suppress dust on haul routes (including watering) and in designated vehicle waiting areas. The frequency of cleaning will be suitable for the purposes of suppressing dust emissions from the site boundaries; and

- Enforcement of speed limits on haul routes for safety reasons and for the purposes of suppressing dust emissions.

## 2.6 Demolition activities

2.6.1 Measures to limit dust pollution from demolition activities will be implemented by the contractor through the use of the following measures, as appropriate:

- The contractor will spray any buildings or structures to be demolished with water prior to and during demolition;
- Appropriate screening of buildings or structures to be demolished will be used;
- Waste chutes will be shielded and skips covered and secured; and
- Where reasonable, the contractor will avoid prolonged storage of waste materials on site.

## 2.7 Excavations and earthworks activities

2.7.1 Measures by the contractor to limit dust pollution from excavations and earthworks activities will include the following, as appropriate:

- Topsoil will be stripped as close as reasonably practicable to the period of excavation or other earthworks activities to avoid risks associated with run-off or dust generation;
- Drop heights from excavators to vehicles involved in the transport of excavated material will be kept to the minimum practicable to control dust generation associated with the fall of materials;
- Suppressing dust emissions by spraying with water or using other appropriate measures;
- Compacting deposited materials, with the exception of topsoil, as soon as possible after deposition; and
- Soiling, seeding, planting or sealing of completed earthworks will be undertaken by the contractor as soon as reasonably practicable following completion of the earthworks.

## 2.8 Drilling activities

2.8.1 Measures by the contractor to limit dust pollution associated with drilling activities will include the following, as appropriate:

- On plant likely to generate excessive quantities of dust beyond the site boundaries measures such as enclosing, shielding or provision of filters will be employed. Items such as dust extractors, filters and collectors on drilling rigs and silos will be used, as appropriate;
- Where appropriate dust will be extracted at source to prevent exposure of workers to excessive dust inhalation;
- Where drilling is used for the purposes of excavating within rock, the exposed surfaces will be watered to limit dust emissions as necessary;
- Materials used such as cements or pulverised fuel ash, will be stored in accordance with the requirements of for materials storage to prevent them becoming an airborne hazard; and
- Mixing of grout or cement based materials will be undertaken using a process suitable for the prevention, as far as reasonably practicable, of dust emissions.

## 2.9 Processing, crushing, cutting and grinding activities

2.9.1 Appropriate measures will be used by the contractor for any processing, crushing, cutting and grinding activities as required to limit dust pollution. Permits will be sought for concrete crushing and batching plant operations as required.

## 2.10 Monitoring

2.10.1 The contractor will implement inspection and monitoring procedures to assess the effectiveness of measures to prevent dust and air pollutant emissions. Relevant local authorities will be consulted regarding the monitoring procedures to be implemented which will include the following measures, as appropriate:

- Site inspections covering the establishment of operation of the construction site.
- Inspection procedures for areas adjacent to the construction site to visually assess any dust and air pollution which may be generated.
- Reference to inspection and maintenance schedules for construction vehicles, plant and machinery.
- Inspection procedures relating to the level of trafficking, use and condition of haul routes.

# Annex M: Public Rights of Way Management Plan

# 1 Introduction

## 1.1 Purpose

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

## 1.2 Structure and Scope of the Outline Public Rights of Way Management Plan

1.2.1 The Public Rights of Way Management Plan includes:

- A description of the method of identifying the PRoWs, local routes and associated surveys that were carried out on them alongside relevant stakeholder engagement exercises (Section 2); and
- A list of the PRoWs and a description of the management plan for PRoWs affected. It then lists the local routes and described the management plan for the local routes affected (Section 3).

## 1.3 Responsibilities

**Table 1-6 Responsibilities details**

| Name | Position/Responsibilities | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Site Manager | |
| | Principle Contractor Environmental Manager | |
| | Local Authority PRoW Officer | |

## 1.4 Public Rights of Way

1.4.1 For the purpose of this document, a Public Right of Way (PRoW) is defined as one of the following[16]:

- a footpath, being a Highway over which the public have a right of way on foot only and which is not a footway[17];
- a bridleway, being a Highway over which the public have a right of way on foot and on horseback or leading a horse (horse is taken to include pony, ass or mule), and by pedal cycle[18];
- a cycle track, being a way over which the public has the right of way by pedal cycle (with or without a right of way on foot);

[16] Definitions follow those created in Section 329 of the Highways Act 1980 except for a byway open to all traffic
[17] A footway is a way over which the public have a right of way on foot only alongside a carriageway over which the public have a right of way for the passage of vehicles
[18] The Countryside Act 1968 permits this but does not impose an obligation for the highway authority to facilitate its use by pedal cycles (for example by providing a suitable surface

- a byway open to all traffic (BOAT), being a way over which the public have the right of way on foot, horseback etc., pedal cycle or motor vehicle but over which the Highway Authority has no obligation to provide a surface suitable for the passage of vehicles[19]; and
- a restricted byway, being a way over which the public have the right of way on foot, horseback etc. and pedal cycle.[20]

1.4.2 In the area covered by the proposed development the majority of PRoWs are bridleways, with a small number of footpaths and byways. The type of PRoW is identified in the first column of Table 2-7.

## 1.5 Local Routes

1.5.1 For the purposes of this document, a local route is a footpath, cycle track or bridleway that is not a designated route with a public right of way over it, but is one that has been identified as being of local value to walkers, cyclists and horse-riders.

1.5.2 These include routes signed as 'quiet lanes'21 and/or routes identified through stakeholder engagement as having a local value as a recreational resource.

## 1.6 Assumptions made in this document

1.6.1 PRoWs would only be stopped up without a substitute provided where unavoidable and/or where they are considered to have limited or low value to access and/or recreation when taking into account their remaining length, destination or usage.

1.6.2 For PRoWs, where they are to be stopped up for construction and subsequently reinstated, a condition survey would help ensure that any reinstated route would be of similar or better quality. For new or diverted routes, it is assumed that the condition would be the same or better than that stopped up.

1.6.3 For local routes, they have been identified and considered as part of a Walking, Cycling and Horse-riding Assessment and Review, undertaken in accordance with the Design Manual for Roads and Bridges (DMRB). Those documents have helped inform the design development but do not form part of the DCO application. Within this document, local routes are considered given their local value as part of the wider access and recreational network. It is assumed that local routes are permissive by nature, with no legal or public right of way. Therefore, should a landowner decide to restrict access across their land to walkers, cyclists and horse-riders, the use or nature of the identified local routes may change.

1.6.4 This document includes reference to local routes where they currently interact with the A30 in order to identify how they will be managed or diverted during construction and operation of the proposed scheme.

[19] As defined in the Countryside and Rights of Way Act 2000
[20] As defined in the Countryside and Rights of Way Act 2000
[21] Defined in Cornwall's Traffic Engineering Manual (Cornwall Council April 2008) as "Minor rural roads which have been treated appropriately to enable shared use by cyclists, walkers, horse riders and motorised users".

## 1.7 This Document

1.7.1 In relation to PRoWs, the works summarised above require:

- Permanent extinguishment/stopping-up of PRoW (or sections of); and/or
- Diversion/re-provision of PRoW to enable continued access; and/or
- Temporary stopping-up and/or diversions during the construction stage to provide access to the works and safeguard PRoW users.

1.7.2 Given the nature of the proposed highway scheme, the majority of PRoWs that interact with the route and its works will be permanently extinguished with a new PRoW provided (e.g. via a new overbridge/underbridge). There are small sections of the existing PRoW network which will be extinguished without re-provision.

1.7.3 In addition, the proposals include some new sections of PRoW, which make use of new side roads or private means of access in an attempt to better connect the existing PRoW network.

1.7.4 This PRoW Management Plan has been prepared to support the Development Consent Order (DCO) application by demonstrating a planned approach to the management of PRoWs during the construction and operation of the proposed development, helping to ensure public safety while minimising disruption to users.

1.7.5 The DCO for the proposed development grants all necessary powers to extinguish/stop up, alter or divert PRoWs affected by the proposed development as specified in the relevant Schedule of the DCO.

# 2 Method

## 2.1 Identification of PRoW/Local Routes

2.1.1 PRoW mapping data[22] was provided by Cornwall Council (Cornwall Council) and has been taken to represent the definitive record of PRoW in the study area. PRoW potentially affected by the proposed development were identified through examination of this data and site walkover work undertaken by the consultant team.

2.1.2 In addition to the definitive PRoW network a number of local routes have been identified through both site work (e.g. picking up signed cycle routes), review of the National Cycle Network (NCN) map and through workshops and consultation events that have highlighted a number of routes used and valued by local people and groups (e.g. walking and cycling groups).

## 2.2 Surveys and Assessments

2.2.1 As part of the Walking, Cycling and Horse-Riding Assessment Report, surveys were undertaken at 13 locations along the A30 corridor at crossing points such as overbridges or at key junctions. These surveys were carried out over three days, Friday-Sunday, 25-27 August 2017 between 7am and 7pm and recorded walking, cycling and horse-riding movements.

[22] https://www.cornwall.gov.uk/environment-and-planning/countryside/public-rights-of-way/public-rights-of-way-interactive-mapping/ and https://www.cornwall.gov.uk/environment-and-planning/countryside/public-rights-of-way/definitive-map-and-statement/viewing-cornwalls-definitive-map-online/

2.2.2 In addition, and as part of their grading system for Gold, Silver and Bronze PRoWs, Cornwall Council has undertaken their own surveys of PRoW in the study area. This includes information and criteria about the use, accessibility, connections to promoted national or regional trails, links to settlements and links to tourism attractions and public transport.

2.2.3 The results of the site surveys and Cornwall Council data and advice has helped inform an appraisal of the value of PRoW and local routes. In turn, this has helped inform the proposed approach to management of those routes during construction and operation in relation to the proposed A30 scheme.

2.2.4 Part of the context for the appraisal of PRoW and local routes also includes transport data. In particular, accident and traffic data has been collected, which shows:

- On average, more than 44,000 vehicles use the A30 between Chiverton and Carland Cross every day, with insignificant variation between the AM, PM and Inter Peak period – suggesting traffic volumes are relatively similar across the day.
- Average daily traffic flows over a year show peak months in July and August, which coincides with an increase in tourists visiting Cornwall in the summer.
- The latest accident data we have for 1 January 2012 to 31 December 2016 shows there were 111 accidents between Chiverton and Carland Cross, of these there was one fatality, 17 serious collisions and 93 slight collisions.
- Police records attribute two of those accidents involving cyclists and one involving a pedestrian only.
- With the scheme in place, the existing A30 would be much more attractive to walking, cycling and horse-riding. The upper bound percentage forecast reduction in traffic in any direction along any section of the A30 Chiverton to Carland Cross is 97%[23]. (i.e. up to 97% of traffic would transfer onto the new route, making the existing A30 significantly less trafficked).
- The average forecast peak period traffic flows on local roads near the A30 as a result of the scheme, show a reduction. The upper bound percentage forecast reduction in traffic in any direction along any local roads in the vicinity of the A30 is 40%[24]. (i.e. traffic on local roads would reduce by up to 40%, making the local roads less trafficked).
- By 2038 with forecast traffic growth, there would be up to an average 9 minute journey time saving between Chiverton and Carland Cross as a result of the scheme[25].

## 2.3 Stakeholder Engagement

2.3.1 Prior to the current project and its associated DCO application (and associated work), public engagement exercises took place in March 2015 to raise awareness of the need for the project. It aimed to help manage expectation on when detailed proposals would be available for public comment as well as highlighting the

[23] Maximum forecast reduction occurs westbound along the existing A30 between Chybucca and Marazanvose between 2023 do minimum and 2023 do something model results

[24] Forecast traffic flows on some local roads could see reductions by up to 38% by 2023, and 40% by 2038. The maximum reduction applies to the A390 between Chiverton and Threemilestone westbound in the PM peak: with 488 less vehicles in 2023 and 520 less vehicles in 2038. NB: Whilst the majority of local roads would benefit from the scheme, traffic flows on some local roads will increase (e.g. on the B3284 through Shortlanesend where traffic could increase by 51% in the peaks in 2023.

[25] Forecast journey times show that there could be up 5m46s savings in average journey time in 2023 (WB, AM peak), rising to up to 8m50s saving in average journey time savings by 2038 (EB, PM peak) between Chiverton and Carland Cross

timescales required in the delivery of the Scheme. Some of the findings of the associated public engagement exhibitions included a lack of provision for non-motorised users due to the A30 severing inter-urban cycle trips. Furthermore, 58.8% of attendees suggested they would be interested in an improved cycle network in the study area. A full report on the engagement exercise provides the early engagement findings[26].

2.3.2 Following an optioneering stage, a significant amount of consultation has been undertaken to help develop the preferred route and its opportunities in relation to walkers, cyclists and horse-riders (previously referred to as Non-Motorised Users (NMUs)). This has included:

- A workshop on 10 November 2015 focussed on cycling;
- A Non-Motorised User workshop held on 12 April 2016;
- A cycling stakeholder meeting held on 10 November 2016;
- A public consultation in from 15 October to 2 December 2016;
- A cycling workshop held on 17 December 2017;
- A walking and horse-riding workshop held on 17 December 2017;
- A statutory consultation on the proposed scheme between 29 January and 12 March 2018; and
- A focused meeting with Cornwall Council Countryside Access officers held on 11 May 2018;
- A further focused cycling workshop held on 24 May 2018.

2.3.3 Those who have been engaged in the project as part of the above activities, include representatives from:

- Cornwall Countryside Access Team;
- Cornwall Countryside Access Forum;
- Cornwall Ramblers;
- Cornwall Council Transport and Infrastructure;
- Highways England and its Walking, Cycling & Horse-Riding Assessors;
- Cycling UK;
- Truro Cycle Campaign;
- Aggie Cycles;
- Truro Cycling Club;
- Sustrans; and
- The British Horse Society.

2.3.4 The walking, cycling and horse riding meetings and workshops held, although not specific to the PRoW network, have raised a number of issues and opportunities, including in summary:

- Concerns were raised that the proposed scheme could make the existing severance experienced along the A30 worse.
- The expressway standard and prohibition orders would restrict access for cyclists on the proposed scheme. Some considered this would be an inconvenience for cyclists on long distance routes along the A30.
- The de-trunking of the existing A30, which would be reclassified with the proposed scheme, would result in a significant reduction in traffic compared to

[26] http://assets.highways.gov.uk/roads/road-projects/A30+Carland+Cross/file+transfer+from+Cornwall+Coucil/01-edg0769-public-engagement-report-final-23-07-15.pdf

existing levels. Those conditions would be attractive to cyclists who could continue to use the existing A30 route and would benefit from the reduction in vehicles using the route.

- Some concerns were raised that vehicles leaving the new A30 and joining the old A30 could maintain high speeds with less traffic using it, potentially posing a safety risk for other users. It was however noted that the existing cycling movements typically involve north-south crossings of the A30 corridor, rather than east-west movements along the A30 corridor.
- Chiverton Cross junction is perceived to be an important commuter route between St Agnes and Truro although counts at Chiverton Cross have previously suggested that this is not heavily used.
- A crossing at Chiverton Cross could link into the cycle improvements on the A390 on the western approach to Truro.
- There is no significant desire line at Church Lane, Zelah although a facility is proposed there as part of the scheme options. Cycling is often faster on that route when compared to driving.
- Facilities for pedestrians and horse-riders could be provided at Chybucca junction.
- Any stopping up of routes at Nancarrow could result in a long diversion. Commuters use those routes to cycle to Truro via Shortlanesend. The absence of any north-south link at Nancarrow could cause an objection.
- North of Chybucca junction there is a section of path that is regularly used although not formally designated as a PRoW where it could be advantageous to link two sections of existing bridleway to create a circular route.
- The bridleway south of Tresawen could link through to the underbridge or be removed entirely or linked to another route. It was suggested that stopping up bridleways could lead to objections, and that the British Horse Society would likely support an additional link.
- A short section of footpath could be stopped up just south of the Trevalso underbridge and it was agreed that this makes sense, as it is not possible to use the footpath whilst a Trevalso underbridge provides an alternative connection.
- Where the junction between the A30 and quiet lanes (east of Penny-come-Quick) could be stopped up, a new section could be added between the two quiet lanes to provide continuation of the through-route.

2.3.5 As part of the scheme development, Highways England held a public consultation in from 15 October to 2 December 2016 to raise awareness and understanding of the need and rationale for the proposed improvements, obtain objective feedback to enable the scheme design to be refined and developed, and identify any opportunities to improve the proposal[27]. A consultation exercise outlined Highways England's strategic ambition to improve provision for walkers, cyclists and other users. An aim is to deliver an accessible and integrated network, which encourages the use of non-motorised modes of transport for commuting and social enjoyment. As such, the statutory consultation asked participants about their use and ambitions for those modes as part of the proposed A30 scheme.

2.3.6 Questionnaire responses have been reported in full[28], whilst a summary is provided below in relation to NMU travel.

[27] https://highwaysengland.citizenspace.com/he/a30-chiverton-cross-to-carland-cross-statutory-con/
[28] https://highwaysengland.citizenspace.com/he/a30-chiverton-to-carland-cross-improvement-scheme/results/ropc-report-only.pdf

2.3.7 There were 523 responses to its Question 4 'Have you previously travelled along or across this section of A30 by any of the following, and if so how often?'. Its associated Figure 3-10 clearly shows the limited number of non-motorised users travelling along or across this section of the A30. Cycling is the most popular mode of NMU travel with nearly 30 travelling along the A30 a week and 45 indicating they use the A30 on a bicycle once a year.

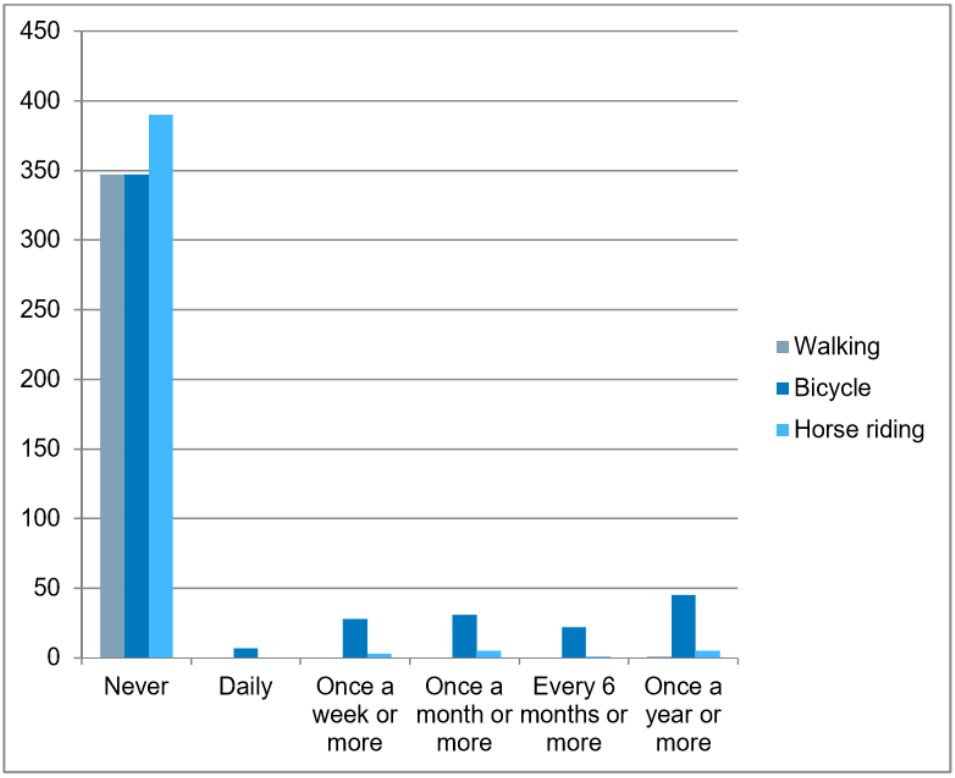



Figure 3-10: Question 4 - frequency of non-motorised travel.

2.3.8 The feedback also clarified that, of those who do cycle along or across this section of the A30, the majority live within 1 km of the scheme, demonstrating that local cycle routes are of some importance to the local area.

2.3.9 Of the 586 responded that answered Question 8 'Are there any improvements to these proposals that you would like to see for non-motorised users?', 70% felt that there were no improvements to the proposals for non-motorised users. Significantly more respondents living further from the scheme, elsewhere in Cornwall, felt that the proposals did not require NMU improvements, or did not answer the question. As shown in its Figure 3-12, this correlates with current NMU figures from Question 4, as described above.

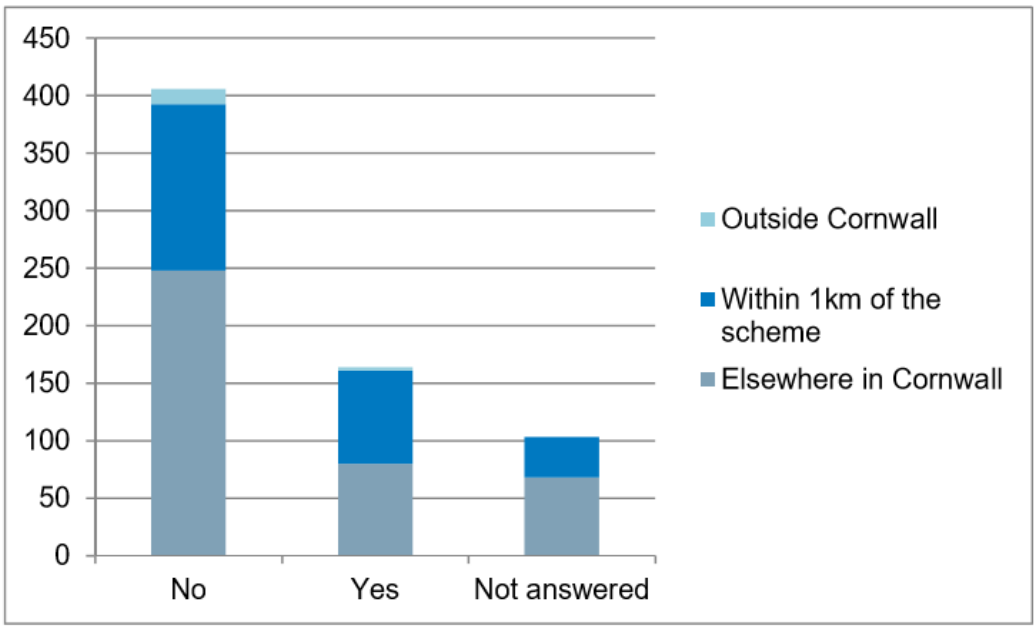



Figure 3-12: Compound bar chart for Question 8 showing whether people wanted to see improvements for non-motorised users.

2.3.10 However, the feedback does indicate that although there is little NMU use of the A30 at present, people do feel strongly about the prospect of being able to use the route more safely in the future when it is no longer a main trunk road. The emphasis on crossing the existing A30 indicated that there are other routes in the area that people are already using, or are in a mind to use, and feel that improvements can be made to make these other routes safer and more attractive.

2.3.11 The statutory consultation on the proposed scheme held between 29 January and 12 March 2018 did not seek feedback on walking, cycling and horse-riding in particular, but some comments did relate to those issues. For example, respondents submitted that:

- A lack of direct access across the A30 for motorists and NMUs will result in the severance of communities such as Blackwater, St Agnes, Silverwell and Chacewater.
- The construction of the A30 will act as a barrier to north/south travel within in Cornwall, severing community links and NMU connectivity.
- Additional underbridges should be constructed under new A30 to improve north/south connections, preserving community connectivity and the local road network.
- Public wellbeing, both physical and mental, would be improved by an increased provision of walking, cycling and horse riding infrastructure due to increased participation in physical activity.

2.3.12 Many of those issues and opportunities have been captured within the Walking, Cycling and Horse-Riding Assessment Report and Review Report[29], which have

[29] ES Appendix 12.X

been undertaken as part of design development work in accordance with the relevant sections of the Design Manual for Roads and Bridges[30].

2.3.13 Specifically, in relation to the PRoW network and the DCO application, more focused consultation has since been undertaken with Cornwall Council's Open Space and Countryside and Access Teams. A meeting on 11 May 2018 was held in relation to proposals to consider the existing situation, potential impacts and how best to manage the PRoW network and local routes during both construction and operation of the proposed scheme.

2.3.14 Specifically, the meeting and associated discussions have considered an early draft of this PRoW Management Plan and the proposals have been refined and finalised as a result of that collaborative approach. There were no disagreements with the methodology or proposed management measures. Agreement is documented within the Statement of Common Ground (SoCG) with Cornwall Council[31].

## 2.4 Locations and Value

2.4.1 PRoW that intersect with the proposed scheme and are therefore affected by works are shown on the Figures in Annex M of this document and summarised in Table 2-1.

2.4.2 In total, the scheme has the potential to effect 17 PRoW as follows:

- 6 Byway Open to All Traffic (BOAT);
- 6 Bridleways; and
- 5 Footpaths

2.4.3 Cornwall Council has designated their PRoW in three categories (Gold, Silver or Bronze) according to their status and priority for attention[32]. They form the appropriate local maintenance priorities.[33]

2.4.4 Taking those categories and priorities into account, each PRoW has been assigned a sensitivity value accordingly. It should be noted that the Design Manual for Roads and Bridges categories (Very High, High, Medium, Low or Negligible) have been applied in the Environmental Impact Assessment. Taking both into account, professional judgement and engagement with Cornwall Council has informed decision making on appropriate sensitivities.

[30] See http://www.standardsforhighways.co.uk/ha/standards/dmrb/. Whilst the named DMRB Reports have helped inform this PRoW Management Plan that forms part of the DCO application, their scope extends beyond the PRoW and any local routes to which works require consents to be secured as part of the DCO.
[31] Submitted separately and as part of the DCO application
[32] https://www.cornwall.gov.uk/media/5830903/Cornwall-Council-Gold-Silver-and-Bronze-Criteria.pdf
[33] http://www.cornwall.gov.uk/environment-and-planning/countryside/public-rights-of-way/local-maintenance-partnership-lmp/

## Table 2-7 Existing PRoW that interact with the scheme

| PRoW | Location | Cornwall Designation | Assumed sensitivity for assessment |
|---|---|---|---|
| BOAT 309/25/2 | West of Chiverton Cross, running east-west between BOAT 309/25/3 and BOAT 309/25/4 | Gold | Medium |
| BOAT 309/25/3 | West of Chiverton Cross roundabout and BOAT 309/25/2 | Gold | Medium |
| BOAT 309/25/4 | West of Chiverton Cross roundabout running north – south | Gold | Medium |
| BOAT 309/25/5 | West of Chiverton Cross roundabout running between BOAT 309/25/4 and BOAT 309/25/3 | Gold | Medium |
| BOAT 309/25/6 | West of Chiverton Cross roundabout running north – south from BOAT 309/25/4 | Gold | Medium |
| BOAT 309/25/7 | West of Chiverton Cross roundabout running north – south from BOAT 309/25/6 | Gold | Medium |
| Bridleway 314/64/1 | North – south from B3284 to Callestick Vean where it connects to Footpath 314/64/2 | Silver | Low |
| Bridleway 314/65/1 | North – South from existing A30 on track leading to Creegmeor Farm | Silver | Low |
| Bridleway 309/3/1 | North – South from existing A30 to the B2384 | Silver | Low |
| Footpath 314/67/1 | East west between the existing A30 and Lower Ventongimps | Silver | Low |
| Footpath 319/16/1 | South west from the A30 at Marazanvose and east at NFH | Gold | Medium |
| Bridleway 319/9/1 | North – south to Hill House prior to running parallel with the existing A30 before joining with Footpath 319/1/2 and Bridleway 319/1/1 south of the existing A30 | Gold | Medium |
| Bridleway 319/1/1 | East – west across the existing A30 via an overbridge between Zelah Lane Farm and Footpath 319/1/2 | Gold | Medium |
| Footpath 319/1/2 | Meets the A30 and Bridleways 319/1/1 and 319/9/1 opposite Zelah Lane Farm. | Gold | Medium |
| Footpath 319/12/1 | East of the A30 adjacent to Trevalso Cottage | Bronze | Negligible |
| Footpath 319/11/1 | East – west south of the existing A30 at Pennycomequick and north of Honeycombe Farm | Bronze | Negligible |
| Bridleway 321/14/2 | North – south adjacent to the A39 south of the Carland Cross roundabout | Gold | Medium |

2.4.5 Table 2-8 below includes other routes known to be used by walkers, cyclists and horse-riders, including Quiet Lanes and NCN routes.

2.4.6 In terms of sensitivity, it has been assumed that local routes are of low value given their informal/permissive nature. However, for routes of regional importance e.g. the National Cycle Network, it has been assumed that there will be a medium sensitivity. High sensitives are associated with National Trails or similar, of which there are not any in the study area.

**Table 2-8 Local Routes that intersect with the scheme**

| Local Route | Location | Assumed sensitivity for assessment |
|---|---|---|
| Quiet Lane | Route crosses current A30 at Chybucca | Negligible |
| Quiet Lane | Route crosses current A30 west of NFH | Negligible |
| National Cycle Network – Route 32 (the Cornish Way) | Route crosses the existing A30 at Chyverton Lodge. | Medium |
| Unnamed path (not designated on Definitive Map) | Crosses the existing A30 from the southern end of Church Lane in Zelah | Negligible |
| Quiet Lane | South of Trevalso Farm | Negligible |
| Link to National Cycle Network – Route 32 (the Cornish Way) | Route crosses the existing A30 at Pennycomequick | Negligible |

# 3 Management Plan

## 3.1 General Provisions

3.1.1 The DCO grants the necessary powers to stop up PRoW affected by the proposed development and put in place alternative/substitute routes as listed in the relevant Schedule of the DCO.

3.1.2 Highways England is committed to the highest levels of safety for the proposed construction and operation of the scheme, and also to minimise disruption to the public. Where a potential conflict between these two objectives has been identified, a pragmatic approach to safety has been taken, balancing the risks to the public and users of PRoW against the disruption that removing the risk will cause (e.g. through stopping up a PRoW). Where possible, Highways England have worked to retain access for the public through phasing/timing of works but where this has not been possible necessary closures have been identified in the subsequent sections of this Plan.

## 3.2 Signage and Information

3.2.1 At all points where PRoWs intersect or cross the proposed development, appropriate signage will be erected to advise of planned works and dates of any planned closures. Signage will also, where applicable, provide information on any alternative routes/diversions and new routes. The location and details of these signs will be discussed and agreed with Cornwall Council PRoW Officers.

3.2.2 Information signs detailing works and giving the project Community Relations team contact number details will be maintained across the construction site.

3.2.3 A high-level programme of PRoW closures and alternative/new routes will be produced and the Cornwall Council PRoW Officers, affected Parish Councils and if required, Land Agents and/or Persons with Interest in Land (PILs) will be notified at least seven days in advance of any closure. A separate notification will be issued when the closure has ceased or an alternative/new route has been provided. Advance notice will include planned dates of any closures and the programmed dates for reopening/re-providing PRoW.

## 3.3 Forms of Managed Closure

3.3.1 Exact details of the forms of closure will be developed by Highways England and its contractor and will be subject to further discussions and agreements with Cornwall Council.

3.3.2 Highways England will make every effort to minimise disruption along the PRoW network and will follow the following decision-making process which sets out a hierarchy of actions, starting with those that create the minimum impact:

- Use of signage where PRoW can remain open but users need to be warned of the presence of construction vehicles (local management);
- Implementation of short, temporary closures where local works might affect safety of users (local closures);
- Closure of/extinguishment of a PRoW following the early implementation of an alternative/new route (e.g. via a new overbridge/underbridge) (early re-provision);
- Closure of/extinguishment of a PRoW without re-provision (e.g. where works sequencing will not provide a new crossing in advance on the carriageway works) and/or permanent extinguishment of a PRoW (full closure).
- Provision of new crossings/routes as part of the scheme (new routes).

3.3.3 All such interventions will be developed in liaison with Cornwall Council PRoW Officers and will be confirmed upon the appointment of a contractor.

3.3.4 The following paragraphs provide more detailed examples of key forms of intervention that are likely to be required.

**Local Management**

3.3.5 Where it is considered safe to do so, PRoW in close proximity to construction works or that adjoin roads that may be affected by works will remain open with appropriate signage to warn of the presence of construction vehicles, and to warn drivers of the presence of walkers, cyclists and horse riders. It is considered that it would be disproportionally disruptive to close PRoW in this instance, particularly when works may only be taking place for short periods of time and risk to the public is likely to be low.

3.3.6 In certain instances, a banks person could be used to hold users of the PRoW network for short periods to allow for safe passage of construction traffic (e.g. where a PRoW is to be used for construction access).

### Local Closures

3.3.7 Where works are predicted to affect the safety of PRoW users to an extent that cannot be controlled by local management, local closures would be sought. Such closures would be temporary and short-term in order to facilitate periods of construction works that are discrete in nature and can be completed in a matter of days/weeks, rather than months.

3.3.8 Where it is not considered safe to keep PRoW open with appropriate signage during construction works, the need for a diversion, signage and other relevant details will be discussed and agreed with Cornwall Council.

### Early Re-provision

3.3.9 Where possible, Highways England have utilised design development to consider where early works may allow them to retain safe access for PRoW users during the construction period. In such cases, it may be necessary for Highways England to seek extinguishment of a PRoW or section of, alongside the provision of an alternative route (in general via an underbridge or overbridge which is to be constructed in advance of the mainline works).

3.3.10 This early re-provision would therefore overcome potential construction effects as well as seeking to provide a new PRoW more permanently into the operational phase of the development.

### Full Closure

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

### New Routes

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

## 3.4 Proposed PRoW Management

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

### Construction

3.4.2 The construction phase of the scheme is anticipated to lead to a variety of effects on the PRoW network, ranging from increased construction traffic on or in close proximity to PRoW, through to a need to extinguish a PRoW in order to enable construction works.

3.4.3 In summary, the following PRoW management is anticipated during construction and further detail is provided in Table 3-9 through to Table 3-10:

- Local management/closures along five BOATs, one bridleway and one footpath to enable construction access and to warn both users of the PRoW network and construction workers of the interaction with these PRoW.

- Permanent closure of one BOAT, one Bridleway and two Footpaths to enable the construction of the proposed scheme.
- Permanent closure of one Footpath and two Bridleways with alternative/diversion routes provided.

3.4.4 On appointment of a contractor, diversion routes for traffic as part of a Traffic Management Plan would be prepared and agreed with Cornwall Council. For the purposes of this Mitigation Plan (prior to the appointment of a contractor) it is assumed that where any PRoW forming part of or interacting with a traffic management route, appropriate local management and signage would be provided as agreed.

**Operation**

3.4.5 Where it is necessary to stop-up PRoW for construction activities, the provision of alternatives routes/diversions will ensure that access across the new A30 is maintained at key points during operation.

3.4.6 Seven new routes are proposed, utilising private means of access and seeking to improve connectivity between existing and proposed PRoW. These seek to provide enhancement/improved linkages (see Table 3-12).

3.4.7 Appropriate design parameters and materials will be provided for substituted and new PRoW, taking into account the proposed type and nature of the proposed PRoW.

3.4.8 Classifications of substituted and new PRoW have been discussed with Cornwall Council, who will update their Definitive Maps as necessary, following notification of completion of works by Highways England and its contractor.

3.4.9 Surfaces would be restored/be as per existing post construction. Suitable surfaces for different types and classification of routes will be provided, taking into account relevant guidance, for example from the British Horse Society34. For multipurpose routes (e.g. routes providing private means of access and a bridleway) details of surfaces and access restrictions features (e.g. demountable bollards) will be agreed with the landowner and/or third party responsible for maintenance and/or use of that surface and/or route.

3.4.10 Highways England and its contractor will provide appropriate signage for re-provided and new PRoW in agreement with Cornwall Council.

3.4.11 Details and specifications for substituted and new PRoW, including scale, surface materials, access features and signage will be set out in Chapter 2 of the Environmental Statement.

3.4.12 Relevant ownership and maintenance agreements will be detailed in the relevant section of the Statement of Common Ground with Cornwall Council35, following associated discussions.

[34] http://www.bhs.org.uk/~/media/bhs/files/pdf-documents/access-leaflets/surfaces.ashx?la=en
[35] Submitted separately and as part of the DCO application

## Table 3-9 PRoW subject to local management/closures

| PRoW Type/Ref | Location | Timing | Type of Management and/or Closure | Reason for Management and/or Closure | Details of diversion/re-provision |
|---|---|---|---|---|---|
| BOATs 309/25/3, 309/25/4, 309/25/5, 309/25/6 and 309/25/7 | West of Chiverton Cross roundabout | During construction | Local management/short-term closures | Local management/short-term closures are likely to be required in order to facilitate construction of attenuation ponds in this area. | It is currently anticipated that access along these routes could be retained through local management. |
| BR 314/64/1 | Off the B3284 adjacent to Callestick Vean | During construction | Local Management | Local management may be required when construction works are occurring to create the new side road which connects to this section of the B3284. | It is currently anticipated that access from the bridleway to the B3284 could be retained through local management. |
| FP 319/1/2 | South of existing A30 at Zelah Lane Farm | During Construction | Local Management | Local management may be required during works to provide the new overbridge and new private means of access to Hill House. | It is currently anticipated that access along the footpath could be retained through local management. A temporary diversion using the NCN32 route during short-term construction works would be made if required, subject to discussions and agreement with Cornwall Council as appropriate. |

## Table 3-10 PRoW to be stopped up for which a substitute is to be provided

| PRoW Type/Ref | Location | Timing | Type of Management and/or Closure | Reason for Management and/or Closure | Details of diversion/re-provision |
|---|---|---|---|---|---|
| FP 319/16/1 | Nancarrow Farm/Marazanvose | Prior to construction of the new A30 | Early re-provision | A short section of FP 319/16/1 is to be permanently extinguished where the new A30 crosses its currently alignment. | Re-provision/new footpath with steps which routes alongside the south of the new A30 before crossing via a new 'green bridge' as a bridleway onto the existing road to Higher Ventongimps Farm. |
| BR 319/9/1 | Near to Hill House | Prior to construction of the new A30 | Early re-provision | Eastern section of BR319/9/1 from Hill House to intersection with BR 319/1/1 to be permanently extinguished. | BR 319/9/1 to be diverted onto new private means of access to Hill House to allow continued access. |
| BR 319/1/1 | Zelah Lane Farm | Prior to construction of the new A30 | Early re-provision | Southern section of BR 319/1/1 to be permanently extinguished where it currently routes onto the existing overbridge. | Section of BR 319/1/1 to be extinguished to be diverted/re-provided on new overbridge which will form a private means of access to Zelah Lane Farm. |

## Table 3-11 PRoW to be stopped up for which no substitute is to be provided

| PRoW Type/Ref | Location | Timing | Type of Management and/or Closure | Reason for Management and/or Closure | Details of future access |
|---|---|---|---|---|---|
| BOAT 309/25/2 | West of Chiverton Cross, running east-west between BOAT 309/25/6 and BOAT 309/25/3 | Prior to construction | Full closure/extinguishment along entire length | Construction of attenuation ponds to serve the new A30 – access will no longer be possible. | Users will retain access along BOAT 309/25/3, 309/25/5 and 309/25/4 |
| BR 309/3/1 | East of Chybucca junction running North – South from existing A30 to the B2384 | Prior to construction of the new A30 | Full closure/extinguishment of a section of the BR | The proposed route of the new A30 bisects the current bridleway. | The bridleway will continue along its current route from the B2384 and stop prior to meeting the new A30. It is understood that the existing bridleway does not have access onto the current A30 at this location. |
| FP 319/12/1 | East of the A30 adjacent to Trevalso Cottage | Prior to construction of the new A30 | Full closure/extinguishment along entire length | This short section of footpath is almost entirely removed given the proposed alignment of the new A30. | N/A |
| FP 319/11/1 | East – west south of the existing A30 at Pennycomequick and north of Honeycombe Farm | Prior to construction of the new A30 | Full closure/extinguishment along entire length | This short section of footpath is almost entirely removed given the proposed alignment of the new A30. | N/A |

## Table 3-12 New PRoW to be provided

| PRoW Type | Location | Timing | Type of Management and/or Closure | Reason for Management and/or Closure | Details of new PRoW |
|---|---|---|---|---|---|
| New Restricted Byway | Via a new underbridge allowing movements across the Carland Cross Junction | To be implemented prior to main construction | New Route | Users will be able to utilise new shared footway/cycleway adjacent to the carriageway connecting a new underbridge provided to facilitate north – south movements across the new junction at Carland Cross and between current road network north to St Newlyn and south on the A39 to Truro. | A new underbridge with appropriate lighting and access restrictions to prevent use by vehicles as necessary, with unsealed surface unless otherwise agreed by Highways England and Cornwall Council |
| New Restricted Byway | Between arms of the new Carland Cross grade separated junction | To be implemented prior to main construction | New Route | Users will be able to navigate the new junction through utilising new footway/cycleway links, removing the need for users to cross numerous arms of the new roundabout. This would help enable safe movements around the new roundabout junction, in combination with the new underbridge to the west. | New restricted byways to north and south of new Carland Cross junction, providing east-west movements around the roundabout, with access restrictions to prevent use by vehicles as necessary, with unsealed surface unless otherwise agreed by Highways England and Cornwall Council |
| New Bridleway | Between existing BR 314/64/1 and BR 314/65/1 utilising new private means of access | Alongside construction of the new private means of access | New Route | Opportunity to connect two existing bridleways, providing improved recreational routes within the area. | New bridleway connection between two existing bridleways on private means of access with unsealed surface unless otherwise agreed by Highways England and Cornwall Council |
| New Footpath | South of Creegmeor Farm and BR 314/65/1 | Alongside construction of the new junction/side road | New Route (Steps) | Proposed steps to provide a connection up to the new side road and onto the new junction connecting into the existing local route (quiet lane) at Chybucca | Steps to provide access to the side road, likely to be unsuitable for horse-riders due to physical constraints and gradient |

| PRoW Type | Location | Timing | Type of Management and/or Closure | Reason for Management and/or Closure | Details of new PRoW |
|---|---|---|---|---|---|
| New Bridleway | West of Nancarrow Farm, south of the A30 | Alongside construction of the new private means of access | New Route | To provide new connection between FP319/16/1, Quiet Lane and new side road at Tresawsen | New bridleway joining and along new private means of access and over new green bridge, with access restrictions to prevent use by vehicles as necessary, with unsealed surface unless otherwise agreed by Highways England and Cornwall Council |
| New Bridleway | Crosses the existing A30 from the southern end of Church Lane in Zelah | To be implemented prior to main construction | New underbridge to allow continued access across the A30 | Existing alternatives access severed by proposed scheme mainline and would provide north-south access across the A30 | New bridleway connection, with unsealed surface unless otherwise agreed by Highways England and Cornwall Council |
| New Bridleway | South of Carland Cross | Alongside construction of the new junction/side road | New Route | To provide safe crossing facilities via a new underbridge in a north-south direction | New restricted byway via a new underbridge onto the existing A30 to junction with A39, with unsealed surface unless otherwise agreed by Highways England and Cornwall Council |
| New Bridleway | South East of Carland Cross | Alongside construction of the new junction/side road | New Route | To provide new connection between existing side roads, footpaths and bridleways in surrounding area | New bridleway adjacent to the new private means of access, with access restrictions to prevent use by vehicles as necessary, with unsealed surface unless otherwise agreed by Highways England and Cornwall Council |

### Additional Closures

3.4.13 Table 3-9 sets out Highways England's expectations of the required closures and new provision in relation to the PRoW network as a result of the scheme. However, if additional temporary or permanent diversions are required of other PRoW not set out in this plan, these will be agreed with Cornwall Council and the landowners prior to implementation. Further, in such cases, the relevant Article of the DCO requires Highways England to obtain the consent of the relevant highway authority, which may attach reasonable conditions to such consent. As with the closures outlined in Table 3-26, signage would be used and similar principles to management of closures adopted for any additional requirements.

### Safety Measures

3.4.14 Where appropriate, suitable fencing will be erected by the contractor in order to form safe corridors for users of PRoW, especially where it is proposed to retain access in areas adjacent to construction works.

3.4.15 The type and size of fencing will be agreed with the individual landowners and Cornwall Council PRoW Officers prior to the start of construction. Regular inspections of the fencing would take place to ensure that all fencing and signage along the PRoW remain in place and that the condition of the PRoW is suitable for its intended use.

3.4.16 Where construction routes adjoin a PRoW or where a PRoW crosses a construction access, appropriate signage would be installed as necessary to ensure the safety of the public, road users and workforce. Appropriate traffic management measures for all works affecting highways are covered in the draft Traffic Management Plan (Volume 6 Document Ref 6.4 Appendix 2.1).

### Inspections

3.4.17 Inspections of any installed temporary diversions or alternative routes and any required action relating to non-conformance, will be undertaken at timescales to be determined/agreed with Cornwall Council PRoW Officers. Regular inspections of such routes will be undertaken and short-term damage repaired where necessary.

3.4.18 During construction, Highways England will also operate a Community Relations team and contact details will be provided on any signs located along the PRoW network. Concerns around condition can therefore be flagged through this facility and Highways England will explore any short-term reinstatement work where necessary. Any concerns raised will be shared with Cornwall Council PRoW Officers.

## 3.5 Proposed Local Route Management

3.5.1 This section details the planned management of local routes during both the construction and operational phases of the proposed scheme.

### Construction

3.5.2 The construction phase of the scheme is anticipated to lead to a variety of effects on the local walking, cycling and horse-riding network, as a result of the proposed scheme mainline or side roads severing existing routes.

3.5.3 In summary, the following local routes are anticipated to be severed and further detail about the proposed management is provided in Table 3-28:

- 4 no. sections of the 'Quiet Lanes' network;
- A short section of NCN32, The Cornish Way; and
- A short section of the Link to NCN32.

3.5.4 In all cases, realignment or diversion of these local routes is proposed, utilising new side roads, overbridges and junctions where possible to maintain access for users.

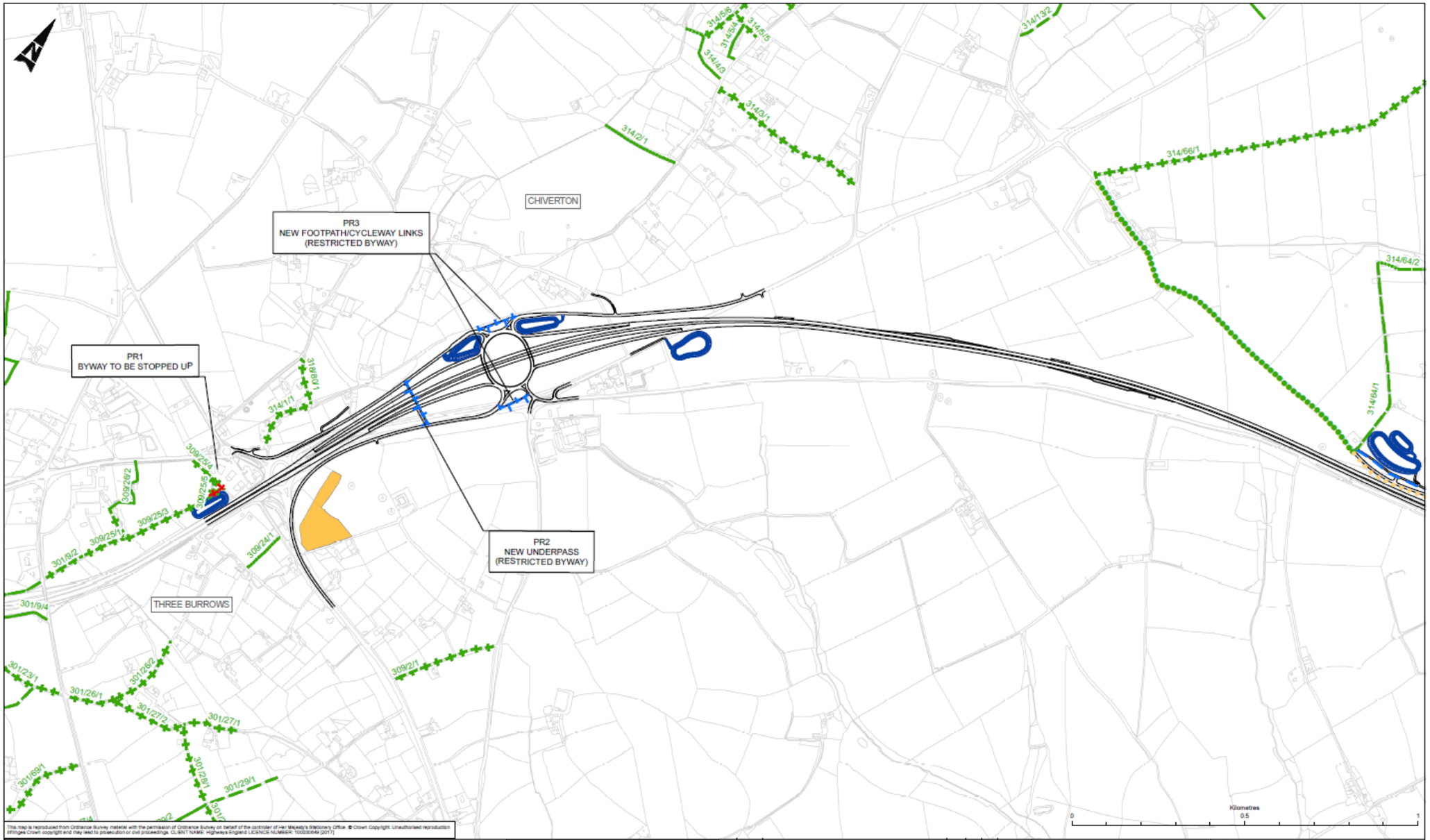
**Operation**

3.5.5 Where the proposed scheme severs local routes, the provision of alternative routes/diversions will ensure that access across the new A30 is maintained at key points during operation.

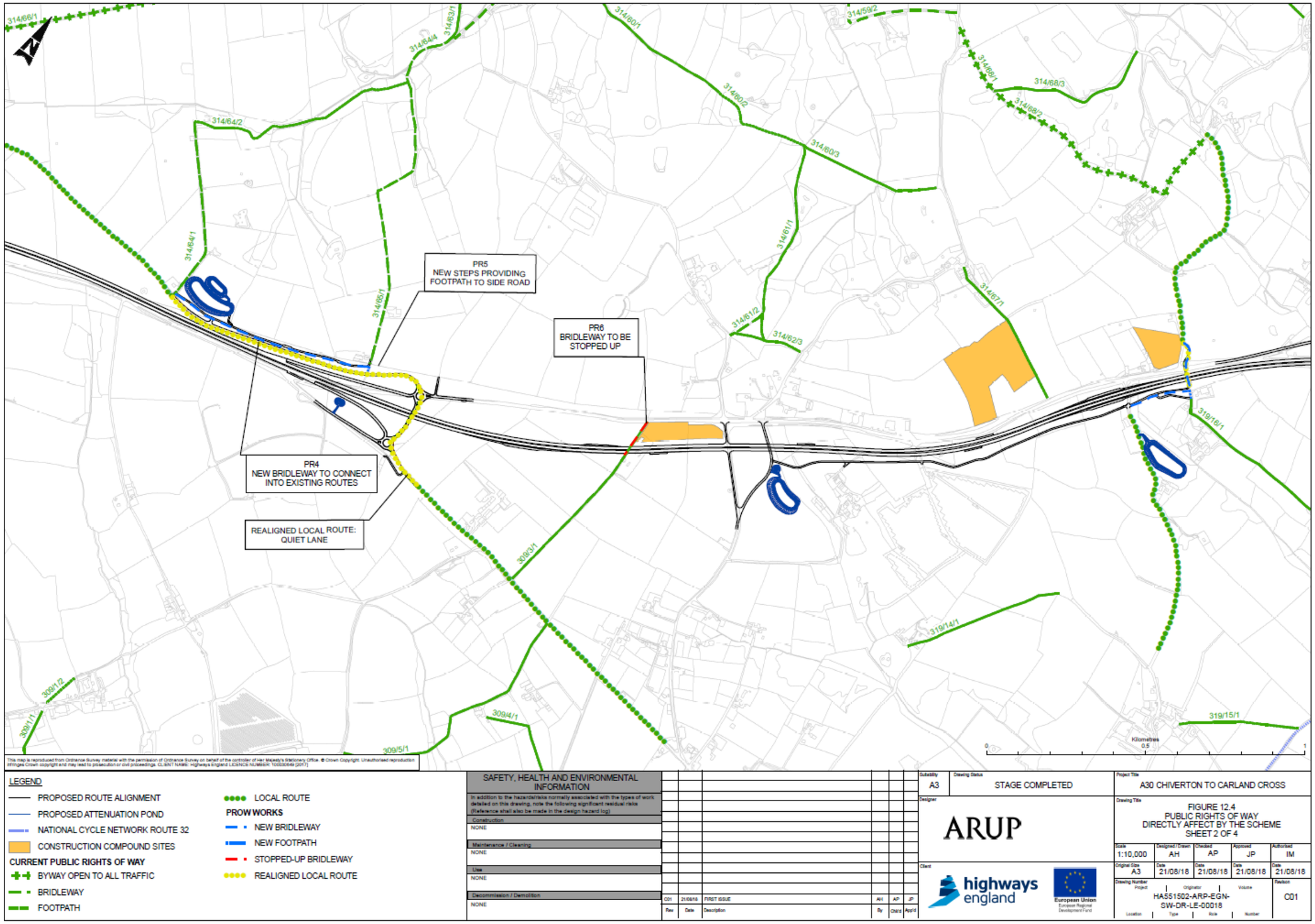
## Table 3-13 Local routes subject to local management/closures

| Route Type | Location | Timing | Type of Management and/or Closure | Reason for Management and/or Closure |
|---|---|---|---|---|
| Quiet Lane | Route crosses current A30 at Chybucca | Alongside construction of proposed Chybucca junction | Quiet Lane to be diverted through proposed Chybucca junction | Quiet Lane severed by proposed scheme mainline |
| Quiet Lane | Route crosses current A30 west of NFH | Alongside construction of proposed private means of access and green bridge around NFH | Quiet Lane to be diverted across new green bridge to the east, or along new private means of access to the west connecting into Tresawsen | Quiet Lane severed by proposed scheme mainline |
| National Cycle Network – Route 32 (the Cornish Way) | Route crosses the existing A30 at Chyverton Lodge. | Alongside construction of side road at Two Barrows | NCN to be realigned with staggered junction to cross the proposed scheme | NCN severed by proposed scheme side road |
| Quiet Lane | South of Trevalso Farm | Alongside construction of proposed overbridge | Quiet Lane to be diverted across new overbridge at Trevalso Farm | Quiet Lane severed by proposed scheme mainline |
| Link to National Cycle Network – Route 32 (the Cornish Way) | Route crosses the existing A30 at Pennycomequick | Alongside construction of proposed overbridge | Link to NCN to be diverted across new overbridge at Pennycomequick | Link to NCN severed by proposed scheme mainline |

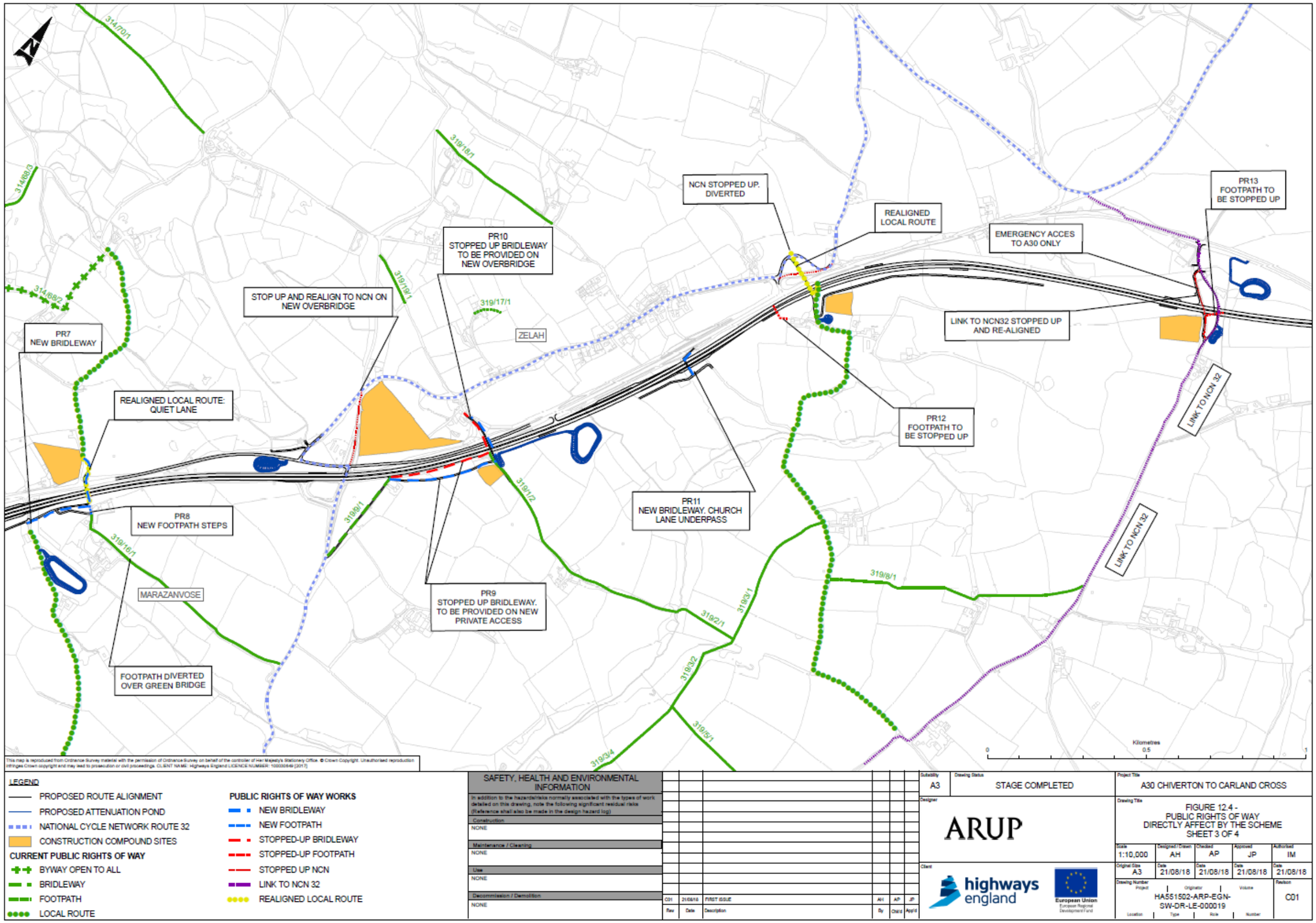
## Figure 3-1 Public Rights of Way Directly Affected By The Scheme Sheet 1 Of 4



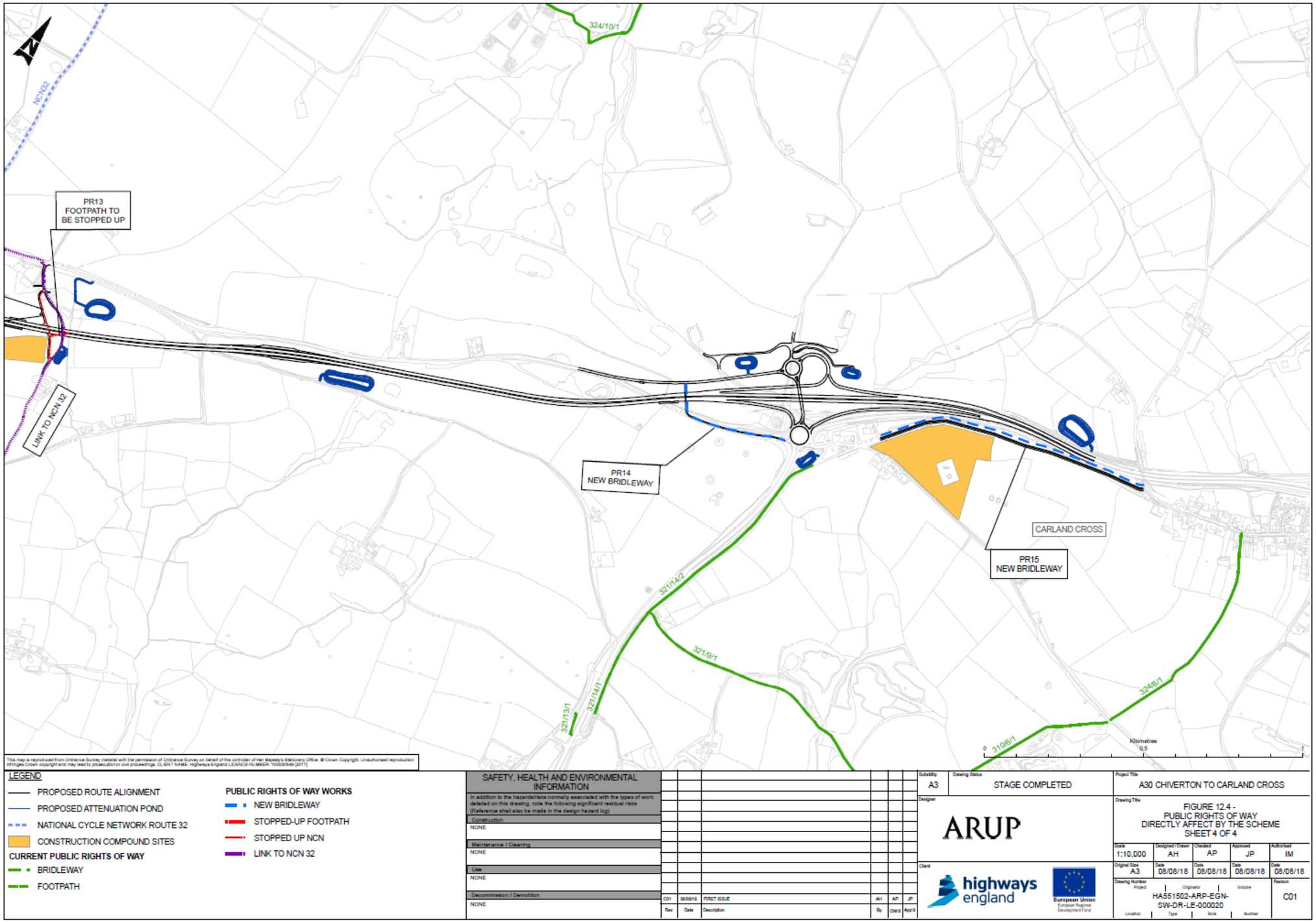
## Figure 3-2 Public Rights of Way Directly Affected By The Scheme Sheet 2 Of 4



## Figure 3-3 Public Rights of Way Directly Affected By The Scheme Sheet 3 Of 4



## Figure 3-4 Public Rights of Way Directly Affected By The Scheme Sheet 4 Of 4



# Annex N: Outline method statement for the translocation of heathland

# 1 Introduction

## 1.1 Purpose

1.1.1 The purpose of the translocation of healthland is to:

- mitigate the effects associated with the loss of the heathland HPI;
- mitigate the effects associated with the loss of habitat currently supporting an invertebrate population of national value; and
- to provide heathland habitat contiguous or close to the existing with Newlyn Downs which could be colonised by species associated with the SAC.

## 1.2 Structure and Scope of the Outline method statement for the translocation of heathland

1.2.1 The method statement sets out measures to mitigate the translocation of heathland. The method statement will be developed at detailed design and agreed with Natural England.

1.2.2 The heathland receptor will be within the scheme, and most likely adjacent to the eastern edge of Newlyn Downs SAC. Methods will be set out including:

- soil sampling
- site preparation for translocation
- translocation method; and
- aftercare.

## 1.3 Responsibilities

**Table 1-14 Responsibilities details**

| Name | Position/Responsibilities | Contact Details |
|---|---|---|
| | Highways England Project Manager | |
| | Site Manager | |
| | Principle Contractor Environmental Manager | |
| | Ecological Clerk of Works | |

## 1.4 Receptor Site

1.4.1 The proposed heathland translocation receptor site will be within the scheme, and most likely adjacent to the eastern edge of Newlyn Downs SAC, which will then form the heathland connection from the isolated heathland to the SAC, as detailed within the Environmental Masterplan (Figure 7.6 of Volume 6, Document Ref 6.3). Comparative soil sampling in both the existing heathland area to be translocated, and the proposed heathland translocation receptor site suggested that soil nutrient levels are currently at a suitable level in the receptor site.

Therefore, substantial pre-translocation soil treatment is not expected to be required to allow successful heathland translocation and growth.

## 1.5 Receptor and Donor Site Preparation

1.5.1 The methodology for these elements will be agreed with Natural England and the Contractor at detailed design.

## 1.6 Translocation Method

1.6.1 As above, the methodology will be agreed with Natural England and the Contractor at detailed design.

## 1.7 Aftercare and Monitoring

1.7.1 The aftercare and monitoring will be agreed with Highways England at detailed design.

# Annex O: Asbestos Management Plan

## Foreword

The purpose of this Scheme Asbestos Management Plan (SAMP) is to demonstrate how the Major Project Provider shall plan for delivery of Asbestos Action Plans (AAPs) for the A30 Carland Cross to Chiverton scheme. GD 5/16 *Asbestos Management in Trunk Road Assets* (Highways England, 2016) guides the content and format of this report.

# 1 Asset List – all assets affected by the scheme

1.1.1 The following tables list the existing assets that will be affected by the scheme within its limits:

- highway structures as they appear in the Structures Management Information System (SMIS);
- brief description and length of carriageway types including assets such as: drainage, signs, etc;
- brief description of buildings; and
- brief description of other assets.

1.1.2 Only two existing Highways England structures plus some culverts will be affected by the scheme because the new road is largely being built off-line. The existing A30 is being retained where off-line of the new scheme.

1.1.3 At this time, it is not known how much of the existing drainage network will be affected by the scheme, nor if any of the drainage assets have ACM. Until a survey confirms otherwise, we can assume any drainage assets may include ACM (e.g. asbestos cement pipes, pitch fibre pipes (often used in bridge substructure drainage systems etc).

### Table 1 1 Highway Structures

| Structure | Number | Special Features/Comments |
|---|---|---|
| Overbridges | 1 No. | To be demolished and replaced. |
| Underbridges | 1 No. | To be reused with minor modification (on-line). |
| Culverts | 4 No. | To be retained.<br>Ch: 0+150 450mm ø culvert on Mr Heller's Land<br>Ch: 8+900 900mm ø culvert south of Zelah<br>Ch: 9+250 900mm ø culvert south of Zelah<br>Ch: 13+600 900mm ø culvert at the Carland Cross |

1.1.4 The following table contains the Highways Agency Pavement Management System (HAPMS) link and section chainages within the A30 Chiverton to Carland Cross scheme. The HAPMS information on link and section references and their lengths were taken from the Area 1 Network Plans.

### Table 1-2 Highway Lengths (as held on HAPMS)

| Route | Carriageway Standard | Length (km) | Comments |
|---|---|---|---|
| A30 | D2AP | Ch 500-700 | Tie-in resurfacing |
| A30 | S2 | Ch 700-1000 | Carriageway to be broken out and replaced off-line |
| A30 | S2 | Ch 1000-1300 | Tie-in resurfacing |
| A30 | S2 | Ch 1300-1500 | Carriageway to be broken out and replaced off-line |
| A30 | S2 | Ch 1500-1600 | Tie-in resurfacing |

| | | | |
|---|---|---|---|
| A30 | S2 | Ch 3700-4800 | Carriageway to be broken out and replaced off-line |
| A30 | S2 | Ch 4800-5000 | Tie-in resurfacing |
| A30 | S2 | Ch 6300-6700 | Carriageway to be broken out and replaced off-line |
| A30 | S2 | Ch 7200-7500 | Carriageway to be partially broken out |
| A30 | S2 | Ch 7500-8700 | Carriageway to be broken out and widened on-line |
| A30 | S2 | Ch 8700-8900 | Tie-in resurfacing |
| A30 | S2 | Ch 12500-14000 | Carriageway to be broken out and replaced off-line |
| A30 | D2AP | Ch 14000-14300 | Tie-in resurfacing |

1.1.5 Various sections of highway for which Cornwall Council is the authority would be affected by the proposed A30 scheme, as tabled below.

**Table 1-3 Highway Lengths (Cornwall Council)**

| Route | Carriageway Standard | Length (km) | Comments |
|---|---|---|---|
| B3277 to St Agnes | S2 | 50m | Tie-in to new link road |
| A390 to Truro | S2 | 100m | Tie-in to new link road |
| Silverwell | | 130m | To be broken out and stopped-up and carriageway returned to pasture |
| A3075 Trevissome Park | S2 | 860m | To be broken out and realigned |
| A3075 to Newquay | S2 | 300m | Tie-in to new link road |
| B3284 to Perranporth | S2 | 150m | To be broken out and tie-in to new link road |
| B3284 to Truro | S2 | 50m + 160m | To be broken out and tie-in to new junction |
| Creegmeor Farm | S2 | 90m | To be broken out and stopped-up |
| Little Tresawsen | Bridleway | 70m | To be broken out and stopped-up |
| Allet | S2 | 50m + 50m | To be broken out and stopped-up and tie-in to new road |
| Nanteague Farm | S2 | 220m | To be broken out and realigned |
| Marazanvose | S2 | 60m | To be broken out and stopped-up |
| Nancarrow | S2 | 50m | To be stopped up (proposed culvert) |
| Chiverton Farm | S2 | 510m | To be realigned and stopped up |
| St Freda | S2 | 100m | To be broken out and stopped-up and tie-in to new link road |
| Hill House to Tolgroggan | S2 | 360m | To be broken out and stopped-up |
| Tolgroggan | S2 | 310m | To be broken out and realigned |
| Church Lane | S2 | 70m | To be broken out and stopped-up |
| Trevalso | S2 | 120m | To be broken out and stopped-up (proposed culvert) |
| Penny-come-quick | S2 | 350m | To be broken out and realigned |
| Ventonteague | S2 | 70m | To be broken out and stopped-up |
| Carland Cross Wind Farm | S2 | 310m | To be broken out and stopped-up and replaced with a new access track |

| | | | |
|---|---|---|---|
| Carland Cross to Mitchell | S2 | 800m | New access track in place of stopped up road |

### Table 1-15 Traffic Technology (as held on TPMS)

| Route | Technology Asset Type | Number of Similar Items | Comments |
|---|---|---|---|
| The current A30 between Chiverton and Carland Cross roundabouts. Inc roundabouts. | Cabinets and Boxes | 13 | To be removed – collision with the new A30 carriageway / side roads |
| | CCTV | 4 | At Chiverton Junction only. |
| | Message sign | 0 | N/A |
| | Outstations | 0 | N/A |
| | Traffic signals | 0 | N/A |
| | Structures - cantilevers | 0 | N/A |
| | Structures - portal gantries | 0 | N/A |
| | Structures - posts | 0 | N/A |
| | Telephone | 4 | Descriptive Location: 415/B, 418/A, 420/B, 421/A. |

### Table 1-16 Buildings, maintenance compounds, discrete 'off network assets'

| Name and Location | Purpose | Brief Description of Assets |
|---|---|---|
| Shed<br>New A30 Ch: 1+000 | Shed | To be demolished – in foot print of a new section of A3075 |
| Buildings<br>New A30 Ch: 5+550 | Gun club | To be demolished – in foot print of the new A30 carriageway |
| Telecommunication Mast<br>New A30 Ch: 6+500 | Telecoms | To be demolished – in foot print of the new A30 carriageway |
| Marazan Farm<br>New A30 Ch: 7+150 | Farmhouse and other farm buildings | To be demolished – in foot print of the new A30 carriageway |
| | | |
| Building<br>New A30 Ch: 7+300 | Barn at Nancarrow Farm | To be demolished – in foot print of the new A30 carriageway |

# 2 Works Programme

2.1.1 The scheme programme is summarised in the table below.

### Table 2-17 Scheme Programme Overview

| Brief Description | Asset/Lengths | Start Date | Finish Date |
|---|---|---|---|
| PCF Stage 3 | Scheme | 03-Jul-17 | 31-Aug-18 |
| PCF Stage 4 | Scheme | 03-Sep-18 | 17-Oct-19 |

| | | | |
|---|---|---|---|
| PCF Stage 5 | Scheme | 08-Nov-19 | 20-Feb-20 |
| Start on site | Scheme | 31-Mar-20 | |

Note: the above dates are based on the current programme, correct as at April 2018, which is subject to change prior to works commencement.

2.1.2 Assets/lengths that will be subject to major works during the delivery of the scheme are tabled below. The construction start date is that for the scheme as a whole, which will be updated once the construction programme is available.

**Table 2-18 Works Programme for Affected Assets**

| Brief Description | Asset/Lengths | Start Date | Comments |
|---|---|---|---|
| Underbridges | Twobarrows | 31-Mar-20 | Simply supported RC deck slab on cantilevered abutments. Potential strengthening works required to the longitudinal joint running through the deck. Existing parapets should be upgraded and it is likely that the bridge deck waterproofing system will be in need of replacement when the existing deck is exposed. |
| Overbridge | Tolgroggan Bridge | 31-Mar-20 | To be demolished and replaced. |
| Culverts | Culvert 1 | 31-Mar-20 | Ch: 0+150 450mm ø culvert on Mr Heller's Land - to be retained. |
| | Culvert 2 | 31-Mar-20 | Ch: 8+900 900mm ø culvert south of Zelah - to be retained. |
| | Culvert 3 | 31-Mar-20 | Ch: 9+250 900mm ø culvert south of Zelah - to be retained. |
| | Culvert 4 | 31-Mar-20 | Ch: 13+600 900mm ø culvert at the Carland Cross – to be retained. |
| Shed<br>New A30 Ch: 1+000 | Building | 31-Mar-20 | To be demolished |
| Buildings<br>New A30 Ch: 5+550 | Building | 31-Mar-20 | To be demolished |
| Telecommunication Mast<br>New A30 Ch: 6+500 | Mast | 31-Mar-20 | To be demolished |
| Marazan Farm<br>New A30 Ch: 6+500 | Building | 31-Mar-20 | To be demolished |
| Building<br>New A30 Ch: 7+300 | Building | 31-Mar-20 | To be demolished |

Note: the above dates are based on the current programme, correct as at April 2018, which is subject to change prior to works commencement.

# 3 AAP Programme

3.1.1 A current Area Asbestos Management Plan has not been provided. Further to this, the Pre-Construction Information (Revision 1, 23 June 2017) states that no action plans for existing structures were provided during PCF Stage 2.

3.1.2 Asbestos Action Plans (AAPs) have been received from Highways England for the highway assets (pavement, barriers, sign posts, lighting pylons and drains). These were carried out in 2012 by Enterprise Mouchel, Area 1 MAC at that time.

3.1.3 Any structure with asbestos highlighted as being present and that will be disturbed during construction will be required to have had a refurbishment or demolition survey, as appropriate, prior to commencement of work, in accordance with the programme summarised in section 2 above.

3.1.4 The following table summarises the asbestos survey works required for each asset that will be affected by the scheme. All surveys are to be completed prior to works commencement.

3.1.5 The programme for completing AAPs shall be agreed with the Scheme Project Manager. The AAPs must be in place prior to the start of any works.

3.1.6 All assets affected by the proposed scheme will need to be covered by an existing, or new AAP including drainage assets.

3.1.7 No works will be undertaken that may disturb a known or assumed ACM until the ACM has been removed (in accordance with) or protected in accordance with the approved AAP.

3.1.8 Provision will need to be made for monitoring / management surveys for known or assumed ACMs that will not be affected by the works, but are within the scheme extents

### Table 3-19 Surveys Programme

| Asset Type | Asset Description | Programme |
|---|---|---|
| Overbridge | Tolgroggan Accommodation Bridge | Requires an asbestos R&D* survey prior to any works. |
| Underbridge | UB4 Twobarrows | Requires an asbestos R&D survey prior to any works. |
| 3 No. culverts | 900mm ⌀ south of Zelah/church lane | Requires an asbestos R&D survey prior to any works. |
| Existing highway | Existing dual carriageway pavement, barriers, sign posts, street lights and drains. | AAPs completed by Enterprise Mouchel (MAC) in 2012.<br>No asbestos identified. |
| Shed<br>New A30 Ch: 1+000 | Shed | Requires an asbestos R&D* survey prior to any works. |
| Buildings<br>New A30 Ch: 5+550 | Gun club buildings | Requires an asbestos R&D survey prior to any works. |
| Telecommunication Mast<br>New A30 Ch: 6+500 | Mast | Requires an asbestos R&D survey prior to any works. |
| Marazan Farm<br>New A30 Ch: 7+150 | Farmhouse and other farm buildings | Requires an asbestos R&D survey prior to any works. |
| Building<br>New A30 Ch: 7+300 | Barn at Nancarrow Farm | Requires an asbestos R&D survey prior to any works. |
| Drainage assets | TBC | Requires an asbestos R&D survey prior to any works. |

*Refurbishment and demolition

# 4 Arrangements for Monitoring and Review

4.1.1 This SAMP is programmed for review as tabled below.

**Table 4-20 SAMP Reviews during PCF Stage 3**

| Brief Description | Asset/Lengths | Start Date | Finish Date |
|---|---|---|---|
| PCF Stage 3 | Scheme | 21-Mar-17 | 13-Sep-18 |
| Produce SAMP | Scheme | 19-Feb-18 | 23-Feb-18 |
| Receive Asbestos Register from HE | | 13-Feb-18 | |
| Client Review of SAMP | Scheme | 26-Feb-18 | 30-Apr-18 |
| Final SAMP Based on Received Responses | Scheme | 30-Apr-18 | 04-May-18 |
| Client Sign Off of SAMP | Scheme | 08-May-18 | 14-May-18 |
| Design Fix B | Scheme | | 11-Dec-17 |
| Design Fix C | Scheme | | 23-Apr-18 |
| Stage 3 Planned Completion | Scheme | | 10-Aug-18 |

Note: the above dates are based on the current programme, correct as January 2018, which is subject to change prior to works commencement.

4.1.2 Future reviews will be undertaken as part of the PCF deliverables at SGAR 6 and SGAR 7.

4.1.3 Updates to AAPs arising from additional survey work, or new AAPs required as a result of the scheme works, shall be produced with agreement from the MPD Scheme Project Manager and Highways England Service Delivery Team Leader.

4.1.4 Any mitigation measures required to prevent delays to works commencement as a result of delays to surveys are to be agreed with the MP Scheme Project Manager and Highways England Service Delivery Team Leader.

4.1.5 The Principal Designer is to be made aware of the changes to the SAMP and the production of any AAPs.

# 5 Procurement of Asbestos Services

5.1.1 All asbestos surveys shall be procured by Highways England in accordance with the requirements of GD 5/16, reproduced as follows.

| | |
|---|---|
| A6.6.1 | The HSE recommends, and Highways England requires, that asbestos surveying and laboratory testing organisations shall be accredited to ISO 17020 and 17025 respectively (UKAS or other). The Major Project Service Provider will let the appropriate contract with the Surveying and Testing Organisation. Furthermore, the AAPs may state a requirement to undertake Management Surveys and/or Refurbishment/Demolition Surveys. |
| A6.6.2 | Major Project Provider shall obtain approval from the MPD Scheme Project Manager prior to awarding any contract for the proposed specialist services. |
| A6.6.3 | All surveys shall comply with the requirements of HSG 264. |
| A6.6.4 | In planning for surveys the following issues shall be considered:<br>• Whether records indicate a strong likelihood of ACM or not. |

- The risk posed by working under traffic management compared to the likely risk of disturbing ACMs during planned maintenance work.
- Known consistency of materials/components based on contract limits during the original construction work and the repeated detailing on bridges and culverts. This will allow representative sampling and assessment work to take place. However, previous modifications to Asset need to be considered.
- Similarity in the appearance of construction details in buildings and other similar structures.
- Combining survey work for asbestos with other maintenance activities within planned traffic management measures.
- Whenever possible combine asbestos surveys with any planned inspections to take advantage of shared access arrangements.

A6.6.5 The survey specification shall comply with HSG 264 and requires the surveyor to recommend actions for each known or presumed ACM. Recommended actions must be produced by the surveyor in conjunction with the Service Provider to make sure decisions on actions are appropriate for the Asset in question. These actions form the 'action plan' column on the asbestos register required for inclusion in the AAP format.

A6.6.6 The following survey types will be appropriate in the following general circumstances in the table below.

| Asset Type | Element/Feature included in the Survey | Survey Type (As HSG 264) |
|---|---|---|
| Buildings, compounds, miscellaneous structures | All visible components or materials in roofs, ceilings, walls, floors etc where no intrusive maintenance work is planned to hidden components. | Management Survey. |
| | All components where intrusive work is planned during refurbishment, modification, demolition, reconstruction or extension of a building structure. | Refurbishment/Demolition Survey unless works deemed to be minor. |
| Highway Structures | All visible materials in structure – no intrusive work planned. | Management Survey. |
| | All materials/components in the structure which would be affected by intrusive work e.g. waterproofing or joint repairs. | Refurbishment/Demolition Survey. |
| | Any demolition or reconstruction. | Refurbishment/Demolition Survey. |
| Highways Generally | All visible surface features – no work planned which could affect ACMs in the ground, e.g. in ducts and surface water drains. | Management Survey. |
| | All elements which could be affected by major construction work – e.g. ducts, chambers, surface water drains, buried joints, utilities infrastructure. | Refurbishment/Demolition Survey. |
| | Any demolition or reconstruction – e.g. major widening, new slip roads or junctions. | Refurbishment/Demolition Survey. |

# Abbreviations List

| | |
|---|---|
| AAP | Asbestos Action Plan |
| CCTV | Closed circuit television |
| HAPMS | Highways Agency Pavement Management System |
| HSE | Health and Safety Executive |
| MPD | Major Projects Directorate |
| PCF | Project Control Framework |
| SAMP | Scheme Asbestos Management Plan |
| SGAR | Stage Gate Assurance Review |
| SMIS | Structures Management Information System |
| TTD | Traffic Technology Division |
| UKAS | United Kingdom Accreditation Service |

5.1.2 Appendix A to Annex O

# A.1 Management Asbestos Surveys of mainline carriageway pavement and verge.

**The reports below have been provided by Highways England Area 1 Team. No asbestos was identified.**

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/321.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/328.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/322.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/326.

Management Asbestos Survey Conducted on the 3rd December 2012. Of the following areas: 0800A38/680.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/324.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/330.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/331.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/333.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/336.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/339.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/337.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/338.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/340.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/341.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/343.

Management Asbestos Survey Conducted on the 6th December 2012. Of the following areas: 0800A30/344.

Management asbestos survey carried out on the 27th February 2012. Of the following areas: 0800A30/304 A30.

Management asbestos survey carried out on the 27th February 2012. Of the following areas: 0800A30/302 A30.

Management asbestos survey carried out on the 27th February 2012. Of the following areas: 0800A30/315 A30.

Management asbestos survey carried out on the 27th February 2012. Of the following areas: 0800A30/314 A30.

Management asbestos survey carried out on the 27th February 2012. Of the following areas: 0800A30/318 A30.

Management asbestos survey carried out on the 27th February 2012. Of the following areas: 0800A30/320 A30.

Management asbestos survey carried out on the 28th February 2012. Of the following areas: 0800A30/387 A30.

Management asbestos survey carried out on the 28th February 2012. Of the following areas: 0800A30/388 A30.

Management asbestos survey carried out on the 28th February 2012. Of the following areas: 0800A30/396 A30.

If you need help accessing this or any other Highways England information, please call **0300 123 5000** and we will help you.

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