

Design and Access Statement

Truro Northern Access Road

CORMAC Solutions Ltd

June 2020

Quality information

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List of Abbreviations

Table 1: List of abbreviations

| Abbreviation | Meaning |
|---------------|---|
| the Applicant | Cornwall Council |
| AQMA | Air Quality Management Area |
| CCAF | Cornwall County Access Forum |
| CDA | Critical Drainage Area |
| CLP | the Cornwall Local Plan (2010-2030) |
| DAS | Design and Access Statement |
| DMRB | Design Manual for Roads and Bridges |
| Kph | Kilometres per hour |
| HIF | Housing Infrastructure Fund |
| HWIC | Health and Wellbeing Innovation Centre |
| LCA | Landscape Character Area |
| NAR | Northern Access Road |
| NMU | Non-Motorised User |
| NPPF | National Planning Policy Framework |
| M | Metres |
| Mph | Miles per hour |
| PROW | Public Right of Way |
| SCI | Statement of Community Involvement |
| the Site | Land required to develop the NAR including the main alignment, distributor roads and associated landscaping |
| SuDS | Sustainable Drainage System |
| TKNP | the Truro and Kenwyn Neighbourhood Plan (2016) |
| WHS | World Heritage Site |

1. Introduction

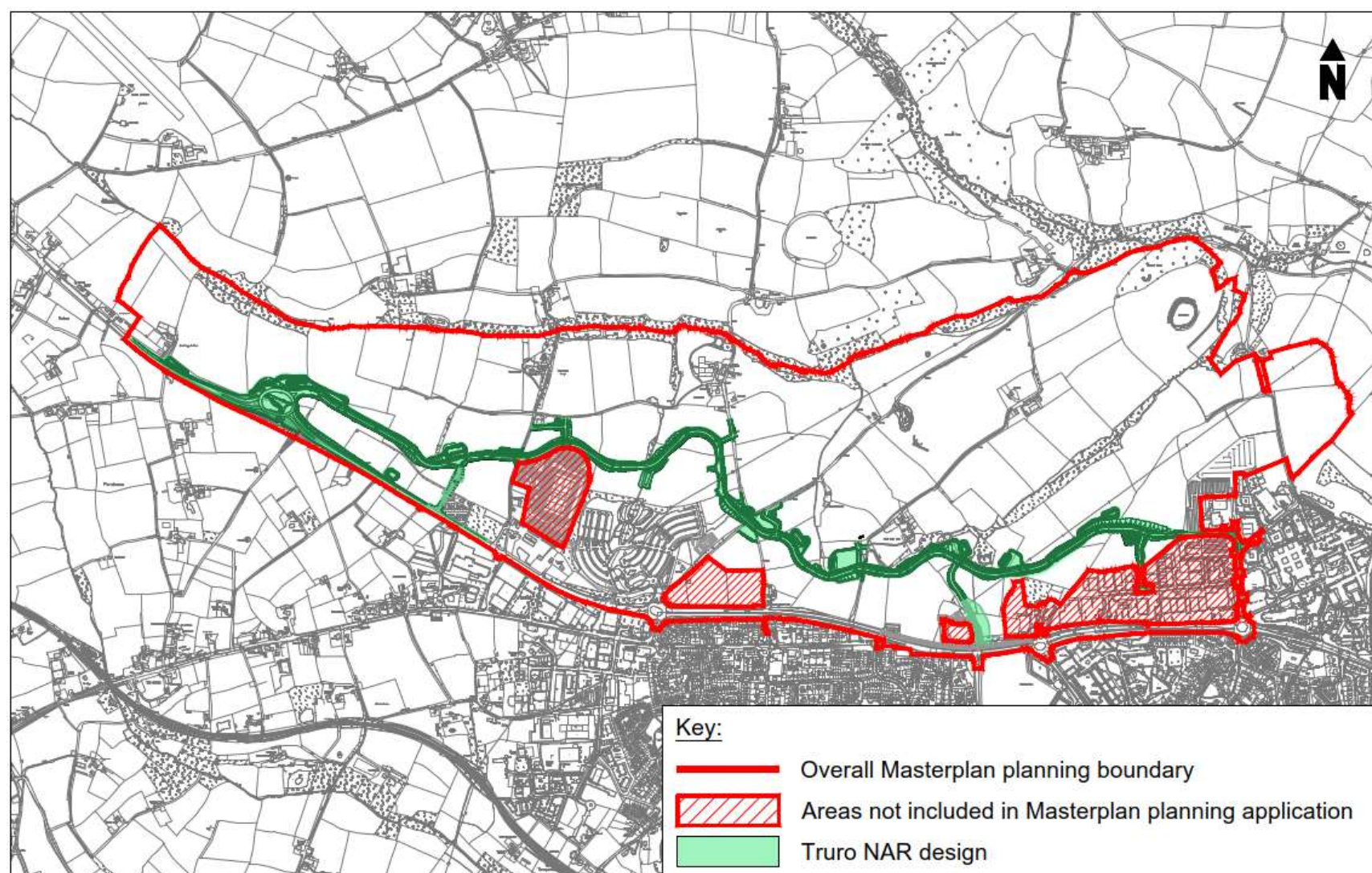
Background

- 1.1 Cornwall Council (hereafter referred to as ‘the Applicant’), has prepared a hybrid planning application to develop an approximately 245-hectare site, located north of Threemilestone and the A390, to the west of Truro City in Cornwall. The proposed Langarth Garden Village Development comprises of a mixed-use community incorporating up to 3,550 new residential units, 200 extra care units and 50 units for health key workers and student accommodation, two schools, retail, employment, community and leisure space, green infrastructure, the Northern Access Road (NAR) and alterations to the A390.
- 1.2 This Design and Access Statement (‘DAS’), which has been prepared by AECOM Ltd and the Engineering Design Group of CORMAC Solutions Ltd, on behalf of the Applicant, forms part of the package of information submitted in support of the hybrid planning application. The hybrid planning application comprises an outline application for the mixed-use community and a full planning application for construction of the NAR and associated access junction arrangements onto the A390, new junctions to quiet lanes and associated infrastructure and earthworks and retaining boundary features. A comprehensive list of application documents can be found within the covering letter. Specifically, this DAS relates to the NAR element of the hybrid planning application but should be read in the context of the wider DAS prepared for the proposed Langarth Garden Village Development prepared by AHR (the ‘masterplan DAS’) (document reference SP01_02) and the Design Code (document reference SP01_03), which also form part of the hybrid planning application.

Overview of the NAR

- 1.3 The site area (hereafter referred to as ‘the Site’ in this document) for the NAR has been identified at Figure 1-1. This comprises land required to develop the NAR which includes the alignment of the road, associated access junction arrangements onto the A390, any associated side roads and earthworks as well as immediate landscape areas. The Site sits within the red line boundary of the hybrid planning application.

Figure 1-1: Site location plan for the NAR in the context of the Langarth Garden Village Development



- 1.4 The NAR will run parallel to the A390, through the new Langarth Garden Village Development linking proposed development plots, connecting the A390 in the west to The Royal Cornwall Hospital and employment sites in the east.
- 1.5 The NAR including associated junctions will be approximately 3.5km long, with a cross section of 19.6m and a selected design speed of 30kph (20mph). The NAR is expected to accommodate approximately one third of the traffic predicted to travel into Truro down the A390. This equals approximately 1,700 two-way vehicles in the PM peak hour following the delivery of up to 3,550 residential units, 200 units for specialist or extra care accommodation, and 50 units for health key workers and student accommodation as part of the Langarth Garden Village Development by 2038. The NAR will comprise of the following key components, refer to general arrangement drawing 1665_CSL_GEN_00MZ_DE_CH_0088 General Arrangements for Planning Key Plan for an overview of the proposed development:
- A new 3.5km access road (Primary Street) running parallel to the north of the existing A390 between a new junction at Threemilestone, and The Royal Cornwall Hospital.
 - A new landscaped junction and roundabout at Threemilestone off the A390 called West Langarth junction with pedestrian and cycle routes running through. This junction is intended to create a gateway for the new Langarth Garden Village Development and Truro.
 - Multiple new junctions connecting the NAR to key development plots and the A390.
 - Non-Motorised User (NMU) provision in the form of pedestrian footpaths, cycleways and bridleways. This includes a segregated cycle-only lane that has priority over cars along the entire NAR route.
 - Associated development including landscaping, drainage, signage and lighting, and off-site mitigation measures.
- 1.6 The Applicant has secured £47.5m Government funding from the Housing Infrastructure Fund (HIF) to deliver the NAR. The NAR is programmed for completion by the end of March 2024, The Applicant is bound by a fixed timetable to comply with the funding agreement.
- 1.7 Key outcomes of the NAR highway design will include the encouragement of sustainable transport links to local jobs, education and services. This will be achieved through developing a sense of place with high quality design including footways, cycleways, bus provision and access to the Langarth Park & Ride. It will provide environmental enhancement through landscaping and sustainable drainage systems (SuDS).
- 1.8 The aims of the NAR comprise the following key objectives:
- It will integrate with positive masterplan place shaping and accelerate housing delivery through provision of access to facilitate multiple sites thorough the Langarth Garden Village Development. The wider masterplan seeks to complement the existing communities at Threemilestone and Gloweth.
 - It will aid the transformation and diversification of Truro's housing market, as well as encourage economic growth locally and within the region as a whole.
 - It will provide a new transport route to encourage sustainable transport and minimise the use of cars helping to create a 'sense of place'. This will be achieved through the provision of dedicated routes for different users, for example, a 3.5km segregated cycle route will promote commuter and leisure cycling.
 - It will help Cornwall Council achieve local housing targets.
 - It will encourage wider growth, higher footfall and the betterment of public facilities in the area.
 - It will create a new gateway on the A390 with the new West Langarth junction marking a reduction in traffic speeds and division of traffic between the NAR and A390.
 - It will provide an alternative route for traffic from the west to access key employment sites currently accessed off A390 at the Treliske industrial and trading estate and the Royal Cornwall Hospital, thus relieving traffic from the A390.
 - It will provide an additional access to the Park & Ride thus relieving traffic from the A390 Threemilestone roundabout, a particular problem in the PM peak hours.

Purpose of this Document

1.9 This DAS has been prepared in accordance with guidance entitled “Making an application” contained in the Planning Practice Guidance from the Ministry of Housing, Communities & Local Government¹ (published 29 November 2016, last updated 22 October 2018).

1.10 The following structure has been adopted for this DAS which sets out the purpose of the document:

- section two sets out the background for the NAR and the context of other infrastructure projects in which this application is made;
- section three provides a brief summary of relevant environmental designations;
- section four summaries the relevant design policy and guidance which has been taken into consideration while formulating the proposed design;
- section five summarises how outcomes of the engagement process specifically undertaken by the NAR design team have informed the Scheme;
- Section six provides a summary of the options appraisal process and how the design has evolved;
- Section seven explains the NAR specific design principles and concepts for the proposed development including the key considerations which have been taken into account;
- section eight explains the approach to access and how matters have been considered within the scheme design; and
- section nine draws together conclusions of the design and access considerations.

¹ <https://www.gov.uk/guidance/making-an-application> Accessed 21 May 2020

2. Background to the NAR

Threemilestone Growth Area

- 2.1 The Truro A390 Corridor runs between the city and the Chiverton Cross junction with the A30. Land to the west of Truro has been identified as the largest strategic growth area for Cornwall's only city. Truro, like many historic cities, suffers from traffic congestion issues at peak times resulting from a combination of commuting and tourism. Such issues are exacerbated by the focus on the A390, the only east-west link.
- 2.2 Growth to the west of Truro has been promoted for some time, with the first meaningful decision being the resolution of Cornwall Council (17 November 2011) to grant outline planning permission for a new sports stadium (The Stadium for Cornwall) which is positioned in close proximity to the existing Park & Ride (operating since 2008). This formed part of a wider parcel of land which had been identified as part of a 2008 draft Truro & Threemilestone Area Action Plan (based upon the now superseded South West Regional Spatial Strategy).
- 2.3 Such a vision has been supported by Cornwall Council who approved a Development Brief (25 January 2012) for land North of the A390 at Truro/Threemilestone. The Development Brief was prepared largely in the absence of an up to date strategic policy document in order to help guide proposals to the west of Truro. This document was not formally adopted but was used as a material consideration.
- 2.4 The Development Brief sought to ensure a comprehensive and co-ordinated approach to infrastructure delivery and laid the foundations for subsequent bids for infrastructure funding (although it did not allocate land for development). The Development Brief was also the subject of close consultation with the local community with the general response being supportive of developments to the north of the A390.
- 2.5 The main components of the Brief can be summarised as follows:

"A sustainable, safe, accessible, and human friendly extension to Truro/Threemilestone that complements and integrates with existing communities and accords with the emerging Cornwall Design Guide;

A phased development with all key infrastructure delivered as early as possible and the release of individual areas of land to avoid overloading of existing infrastructure;

The provision of sustainable transport infrastructure to serve the development whilst improving the accessibility of facilities, services and employment for the existing community;

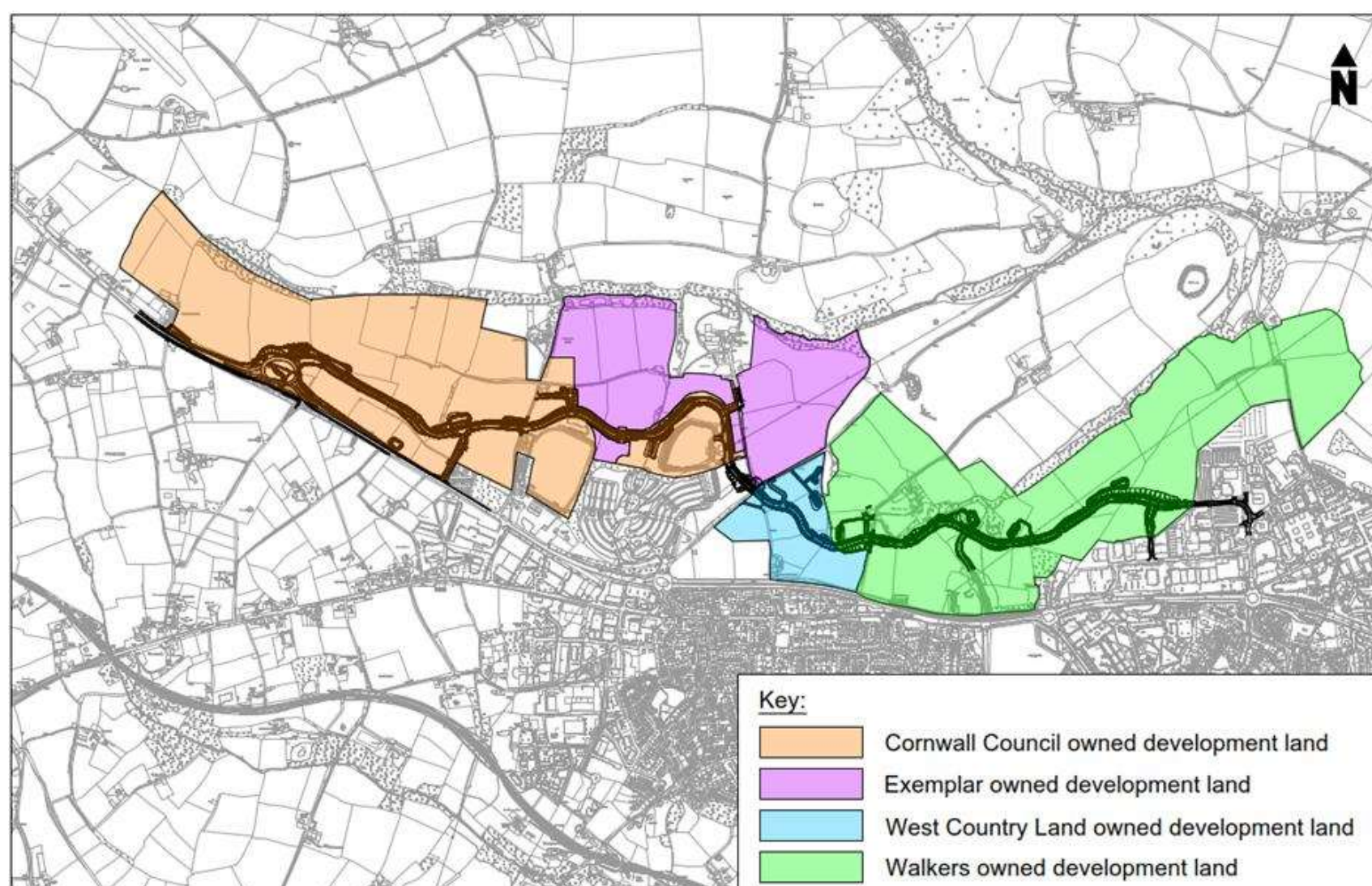
The provision of an appropriate variety of sizes, tenures, densities and styles of housing in accordance with local need;

The provision of significant new: employment; retail; open spaces; leisure and community facilities that complement and enhance provision for existing residents in meeting the needs of the new community;

The retention and enhancement of important ecological, landscape and archaeological features within and, where possible adjacent to the site; and

A Stadium for Cornwall in a landmark building".

- 2.6 A key element of the Development Brief was the need to deliver the NAR in order to facilitate and deliver appropriate access to the identified land parcels without further exacerbating existing issues on the A390. The NAR will unify the various development proposals (previously promoted by separate developers) to ensure a co-ordinated and appropriately planned access strategy for the significant residential and leisure development planned to the west of Truro.
- 2.7 Since the publication of the Development Brief, Cornwall Council has now adopted (November 2016) the Cornwall Local Plan (2010-2030) ('CLP') which identifies a need to deliver a minimum of 52,500 new dwellings across the county and identifies that 5,100 (of which 3,900 for Truro) of these dwellings will be delivered within the Truro and Roseland Community Network Area.
- 2.8 Since 2010 multiple planning applications have previously been approved for most of the land to the north of the A390 for approximately 2,700 dwellings (subject to reserved matters approval). These have been brought forward by different developers and some relate to disconnected parcels of land.

Figure 2-1: Route of NAR and relationship with development parcels

- 2.9 Figure 2-1 shows the approximate alignment of the NAR (shown in black) and its relationship with the individual consented land parcels. As can be seen the NAR runs adjacent to the existing A390 for the purpose of providing a principle point of access for the different developments.
- 2.10 Cornwall Council, in May 2018, approved a strategy of intervention into the committed schemes at Truro/Threemilestone based on “*an analysis of a range of options against a background of uncoordinated speculative and poor-quality development proposed by private sector*”². Given the importance of meeting Truro’s housing needs, the need to deliver key infrastructure and to do so on a co-ordinated basis an intervention by the Council was considered the only viable option.
- 2.11 Subsequently, in June 2018 Cornwall Council’s Cabinet approved the acquisition of 154 plots plus further land for public infrastructure at Langarth Farm. Since this acquisition Cornwall Council worked closely with the landowner to draw up revised proposals (November 2018) and secured a range of additional controls to help facilitate appropriate development in this location including greater control over the delivery of infrastructure, including the NAR. Under this agreement Cornwall Council will ultimately be responsible for the delivery of the NAR.
- 2.12 In June 2019 Cornwall Council was also successful in securing £47.5million conditional funding from the HIF for delivery of the NAR. The HIF is made available to local authorities to unlock housing sites which are constrained by significant infrastructure requirements. Cornwall Council discharged the funding conditions and entered into contract for the HIF Funding in August 2020.
- 2.13 On 28 June 2019 the Threemilestone area was designated as one of nineteen new garden communities by the Ministry for Housing, Communities and Local Government. At this point the proposals became known as the Langarth Garden Village.
- 2.14 To facilitate a co-ordinated approach to delivery, Cornwall Council commissioned the Langarth Garden Village masterplan for the urban extension to Truro which would be integrated with the NAR. This masterplan promotes 3,550 new residential units, 200 extra care units and 50 units for health key workers and student accommodation, commercial centres, educational facilities and services.

² Development at Threemilestone Cornwall Council Cabinet Paper (18 December 2018)

Other Associated Infrastructure Initiatives

2.15 The NAR sits in the context of several associated infrastructure initiatives which contribute to the redevelopment and improvement of infrastructure in this area of Cornwall, as part of Cornwall Council’s investment into South West roads and ‘Cycling, Safety and Integration’. These associated schemes include:

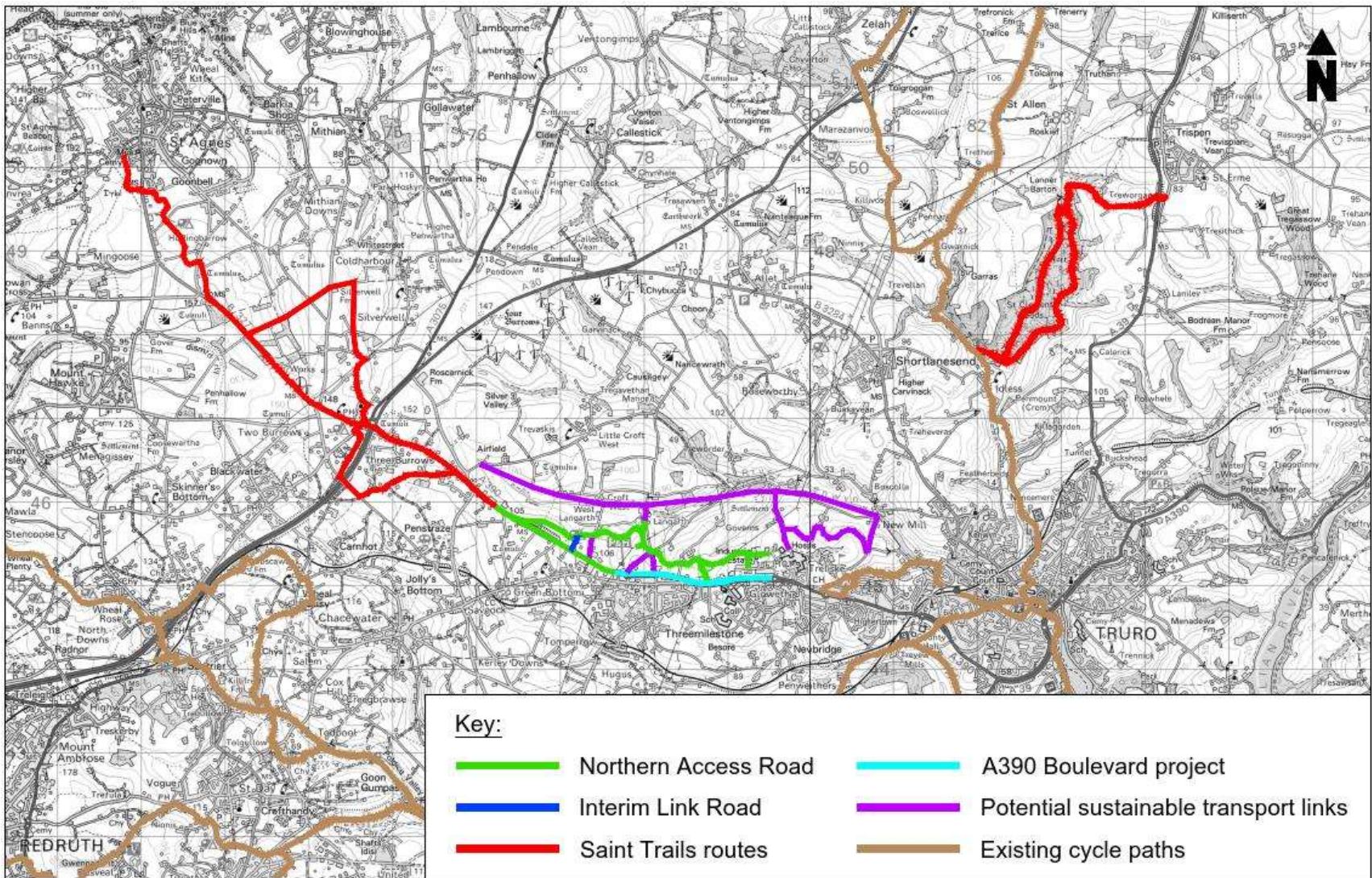
A30 Chiverton Cross to Carland Cross dual carriageway

- 2.16 This Highways England promoted scheme will upgrade 8.7miles of existing single carriageway road to dual carriageway along the A30 between the Chiverton Cross and Carland Cross roundabouts. A Development Consent Order was recently made for this project with a public announcement that works would start in 2020 for completion in 2023.
- 2.17 The NAR Scheme will interface with the A30 Chiverton Cross to Carland Cross dual carriageway through the new A390 West Langarth junction which is located approximately 1 mile east of the A30. The dualling of the A30 Chiverton Cross to Carland Cross will give improved, more reliable journey times and increased capacity on the A30. The new relocated A30 Chiverton junction will provide uninterrupted A30 traffic flow with slip roads providing access to the A390 crossing under the A30.

Saints Trails

2.18 Five high quality sustainable multiuser trails are proposed between Newquay, Perranporth, St Newlyn East, St Agnes and Truro, known as the Saints Trails. These have secured funding through the Cycling, Safety and Integration Programme from Highways England. This 30km network of trails will link housing and employment growth areas, connect coastal communities and provide sustainable access to key services, addressing congestion and air quality issues. Their aim is to encourage healthier lifestyle choices and contribute towards a reduction in climate change. The Saints Trails have been announced for completion during Spring 2021.

Figure 2-2: Overview of Truro to St Agnes Saints Trail and other cycle routes



2.19 The Truro to St Agnes Saints Trail will provide a traffic-free multi-user path alongside the A390 from the Park & Ride at Threemilestone to St Agnes via the A30 Chiverton Cross junction. Reference should be made to Figure 2-2 which demonstrates the proposed route for this Saints Trail in the vicinity of the Site.

- 2.20 The Saints Trail will link into the new routes planned as part of the Langarth Garden Village Development. The Trail is proposed to run along the south side of the A390 crossing to the north side at the West Langarth junction and continuing to the Park & Ride. This will bring the route through the hybrid application site where there will be many links between the A390 and the NAR, which includes provision of crossing points. The Saints Trail enhances the wider strategy for connectivity throughout the Langarth Garden Village masterplan.

Quiet Lanes

- 2.21 The Quiet Lanes are a network of minor rural roads to the north of Langarth which have been designated by Cornwall Council. The principle behind this designation means vehicles do not have priority over the needs of pedestrians, cyclists, horse riders and other vulnerable road users.

3. Site and Context

3.1 For further information on the site location; surrounding context; site assessment and site evaluation, reference should be made to Chapters 2.0 Assessment and 3.0 Evaluation of the masterplan DAS.

3.2 It is noted that the following environmental designations are present:

- Located immediately adjacent to the A390 (in the vicinity of the proposed West Langarth junction) is a grade II Listed milestone, dating to the early 19th Century. The milestone consists of a painted dressed granite monolith, rectangular on plan with a round head, facing south. Reference should be made to Chapter 12 of the Environmental Statement for further information on this designation.
- The western end of the proposed development lies adjacent to the north eastern boundary of the Gwennap Mining District of the Cornwall and West Devon Mining Landscape World Heritage Site (WHS) for around 1.5km. The WHS abuts the south side of the A390. The WHS was adopted 31 May 2017 and is divided into several sub areas with the land adjacent to the proposed development falling within the Gwennap Mining District. This part of the WHS is an area of some 1,970ha of land and is located directly south west of the Site with only the A390 separating the two. Reference should be made to Chapter 12 of the Environmental Statement for further information on this designation.
- The Site is located within two designated Landscape Character Area's (LCA):
 - Redruth, Camborne and Gwennap are identified as LCA 'CA11' in Cornwall's Local Landscape Character Assessment interactive mapping tool and encompass the southern end of the Site following the path of the existing A390. The area is a small-scale rolling landscape with underlying slates and siltstones running from the exposed north coast to the Fal ria in the south. The strong influence of over 300 years of tin and copper mining has affected both the present-day land use and landscape pattern of this area.
 - The northern side of the Site is located in LCA 'CA13', the Fal Ria, which comprises a series of interlocking tributary creeks flowing into the River Fal which widens out into a large estuary and internally important deep-water harbour.

Reference should be made to Chapter 13 of the Environmental Statement for further information on these designations.

- There are Tree Preservation Order areas to the south of the Langarth Park & Ride site and in sections of the Treliske industrial and trading estate, which includes Oak Lane.
- The Site is situated within an Air Quality Management Area (AQMA), designated July 2015 as AQMA 6 due to the pollutant Nitrogen Dioxides NO₂. Reference should be made to Chapter 6 of the Environmental Statement for further information on this designation.
- Several Public Rights of Way (PROW) can be found passing through the Site area:
 - A Silver Priority footpath, PROW number 309/21/1, crosses the Site at the west end. It currently runs from the A390 north past Little Regarded Farm and terminates on a track.
 - A Modification Order Application (WCA Ref: 633) dated 17 January 2018 was submitted by a third party to Cornwall Council proposing additional restricted byways between three locations along the A390; the Chacewater byway open to all traffic and five locations along the C723 at Greenbottom. The proposed restricted byways are all located to the south of the A390 and would provide connections between the A390 and other local roads and footpaths in the area. One restricted byway would continue the line of Public Right of Way (PROW) number 309/21/1 to the south of the A390 where presently this PROW finishes.
 - A bridleway is located heading north from the A390 at East Langarth Farm, and a meadow bridleway leads south of the A390 by Britannia Lanes.
- The Site falls within two Critical Drainage Areas (CDA), the majority of the Site is within the 'Truro – Kenwyn, Allan, Tregoss Rd' CDA, with a small portion of the site along the south falling within the 'Truro – River Tinney' CDA.

Socio-Economic Context

- 3.3 14,000 people per day already commute into the Truro & Kenwyn area during the working week. According to the Truro and Kenwyn Neighbourhood Plan ('TKNP') (2016), *"transport is a key factor in the economic vitality and sustainability of any community"*. It also states that road improvements are needed, which will facilitate access to amenities, to the public and also encourage the use of multi-functional facilities.
- 3.4 The visions of the Langarth Garden Village Development are to provide a mix of employment facilities, particularly through development that supports start-up and growth for small and medium enterprises. By facilitating the provision of local retail and service jobs, and a range of commercial units to meet a wide range of needs, the NAR helps safeguard a sustainable long-term future for the Langarth Garden Village Development site.

4. Design Policy and Guidance Context

Planning Policy

- 4.1 Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that development proposals shall be determined in accordance with the adopted Development Plan, unless material considerations indicate otherwise. The adopted Development Plan for this area comprises:
- The Cornwall Local Plan (adopted 22 November 2016) ('CLP') provides the policy context for the area that covers the county of Cornwall between 2016-2030. It sets out the main planning approach and policies for Cornwall and supersedes policies contained in the Local Plans of the former District and Borough Councils.
 - The Truro and Kenwyn Neighbourhood Plan (made 20 December 2016) ('TKNP') now forms part of the adopted Development Plan for Cornwall. This plan was developed in relation to solely overseeing development management decisions in the TKNP Area for the period between 2015-2030.
- 4.2 Material considerations include:
- The National Planning Policy Framework (published February 2019) (NPPF) provides a framework for Government's planning policies and sets out how these policies should be applied. The NPPF must be taken into account in preparing the Development Plan and is a material consideration in planning decisions.
 - The Planning Practice Guidance (published 29 November 2016, last updated 01 October 2019) is an interactive online resource that provides further advice and guidance that expands on policies contained within the NPPF. It contains guidance for the preparation of a DAS as well as more general advice relating to good design.

Design Guidance and Documents

Design Manual for Roads and Bridges (2018)

- 4.3 The Design Manual for Roads and Bridges ('DMRB') is Highways England guidance that is followed by local highway authorities, in this case it is only relevant to the West Langarth junction and associated approach roads. The DMRB was updated in March 2020 and is a suite of documents which contain requirements and advice relating to works on roads.
- 4.4 The DMRB was prepared jointly by the Overseeing Organisations (which includes Highways England, Transport Scotland, The Welsh Government, and the Department for Infrastructure (Northern Ireland)). It embodies the collective experience of the Overseeing Organisations, their agents and designers. It provides requirements and advice resulting from research, practical experience of constructing and operating roads, and from delivering compliance to legislative requirements.
- 4.5 The DMRB considers and provides the principles for single carriageway design but is principally focused on the design of higher speed highway links from 50 to 120kph, hence this guidance is not applicable to the NAR design outside of the West Langarth junction.
- 4.6 The DMRB provides the following design parameters for design speeds from 120kph to 50kph:
- Stopping Sight Distance (m);
 - horizontal curvature (m);
 - vertical curvature; and
 - Full Overtaking Sight Distance (m).

Manual for Streets (2007)

- 4.7 Manual for Streets was published in March 2007 by the Department for Transport and provides guidance about the design, construction, adoption, and maintenance of new streets. This document provides

principles, but no set standards, for low speed design environments and is supported by the DMRB which sets out specific standards. The Manual for Streets focuses on lightly trafficked residential streets and does not apply to the trunk road network.

- 4.8 The key recommendation of the Manual for Streets is that increased consideration should be given to the 'place' function of streets. The Manual states that streets should not be designed just to accommodate the movement of motor vehicles, a prime consideration is that they meet the needs of pedestrians and cyclists.

Development Layout Design (2011)

- 4.9 Cornwall Council published a 'Development Layout Design' document (December 2011) which is to be used by developers in the design of residential estate roads. This document focuses on the basic principles of the Manual for Streets but set in the Cornish context where topography of existing highway structure can be challenging.
- 4.10 While this document focuses on the design of residential estate roads it also contains principles which have been taken into consideration while developing the NAR. Specifically, this relates to the aim of creating a safe and secure environment for all road users. The guidance seeks to provide roads, footways and cycleways constructed to a high standard, as well as providing convenient and secure access links between key locations.

The SuDS Manual (C753) (2015)

- 4.11 The SuDS Manual (Construction Industry Research and Information Association, 2015) covers the planning, design, construction and maintenance of SuDS to assist with their effective implementation within both new and existing developments. It provides guidance on maximising amenity and biodiversity benefits in hand with delivery of the key objectives and managing flood risk and improving water quality. There is also supporting information covering topics such as materials, landscape design, maintenance, community engagement and costs and benefits.

The Traffic Signs Manual (2020)

- 4.12 The Traffic Signs Manual (Department for Transport, 2020) gives guidance on the use of traffic signs and road markings prescribed by the Traffic Signs Regulations. It provides guidance on the positioning and mounting of all types of signs as well as the use of road markings.

Draft Cornwall Streetscape Design Guide (2019)

- 4.13 The Draft Cornwall Streetscape Design Guide (Cornwall Council, 2019) has been prepared to support the Cornwall Design Guide (currently also in draft form) and policy set out in the Connecting Cornwall: 2030 Local Transport Plan. The draft document underwent consultation during the first quarter of 2020 and is expected to be adopted before determination of the hybrid planning application.
- 4.14 This document provides guidance for developing streets and public spaces to a high quality. It seeks to ensure developments:
- are inclusive;
 - are safe and accessible for all;
 - serve the current and future needs of the communities of Cornwall;
 - support dynamic society and economy;
 - promote more sustainable and healthy lifestyles (mental and physical wellbeing);
 - minimise our impact on the built and natural environment while making the most of local green infrastructure assets.

5. Engagement Process

Overview

- 5.1 Reference should be made to Chapter 4.0 Involvement of the masterplan DAS and the Statement of Community Involvement (SCI) for a full account of the engagement process and stakeholder involvement relating to the Langarth Garden Village Development. The NAR has been presented as part of the Langarth Garden Village Development throughout this process.
- 5.2 In addition to this engagement process, specific consultations relating to the design of the NAR have taken place (and continue to take place) between the NAR design team and the following consultees:
- the Cornwall Countryside Access Forum ('CCAF');
 - an independent streetscape advisor;
 - the Milestone Society (Cornwall); and
 - DisAbility Cornwall and Isles of Scilly.

Stakeholder Engagement

Cornwall Countryside Access Forum

- 5.3 The CCAF is an independent body set up by Cornwall Council under the Countryside and Rights of Way Act 2000 to advise on making the countryside more accessible and enjoyable to the public for open air recreation, in ways which address social, economic and environmental interests. Members of the Forum are volunteers and represent a balance between users of the rights of access and rights of way, owners or occupiers of access land or land crossed by rights of way and those with other interests, including wildlife conservation, cultural heritage, tourism, sport and recreation, health, outdoor education and local business interests.
- 5.4 A meeting was held on 28 June 2019 to discuss full segregation between cyclists and pedestrians, giving priority for public transport and NMUs, priority for cyclists at side roads and roundabouts, more cyclist parking and less vehicular parking, better links from the NAR to surrounding areas and a traffic-free crossing at the West Langarth junction; possibly a 'fly-over'.
- 5.5 Significant changes to the NAR cross section were born out of these discussions. As a result, NMU provision along the NAR changed from a shared pedestrian and cycle facility to a segregated cycle facility with a priority for cyclists at side road junctions.
- 5.6 Further consultation with the CCAF took place on current scheme proposals and comments were received 18 June 2020. The comments covered the following:
- Suggestion that only two crossings would be required across the West Langarth junction if they went due north east.
 - There is a need for the NAR to link seamlessly into connections forming a logical route for all users.
 - Support for the Quiet Lanes principle to the north of Langarth.
 - There is potential for the cycle lane to connect into existing infrastructure at the east end of the NAR.
 - Supportive of the benefits the scheme will bring to PROW and other opportunities for travel.
 - Suggestion for provision of a crossing over the A390 in the location of the Richard Lander school, for the purpose of a potential further connection.
 - Bridleway provision within the scheme was welcomed; however, the CCAF would like to see an equestrian crossing north-south across the A390.
- 5.7 Where practicable, the above comments have been taken into consideration. In response to the first point raised by the CCAF, the crossing points across the West Langarth Junction have been located on current and expected future desire lines.

Independent Streetscape Advisor

- 5.8 An independent streetscape advisor (Andrew Cameron & Associates) provided advice on the layout and design of the NAR throughout the option appraisal process. This involvement was primarily in relation to the West Langarth junction. Advice provided during this process informed the approach of using a large organic shaped junction containing ornamental planting to mark an entrance into the Langarth Garden Village and a decision point for traffic to use the NAR or A390.
- 5.9 Comments were also provided on the NAR street scene and ways to prioritise cyclists at side roads and make the route look more attractive and liveable. This has resulted in landscaping along buffers and on the roundabout to give the NAR a more organic feel.

The Milestone Society (Cornwall)

- 5.10 Advice was sought from the Milestone Society (Cornwall) on the proposal to relocate the listed milestone in the location of West Langarth junction. No objection was raised to the relocation of the milestone and they acknowledged that the milestone would be returned to the correct side of the road facing its original direction as demonstrated on historic maps of the area.
- 5.11 The Milestone Society (Cornwall) considered it important the milestone remained connected with the A390, in a safe location, at the same level as the carriageway.

DisAbility Cornwall and Isles of Scilly

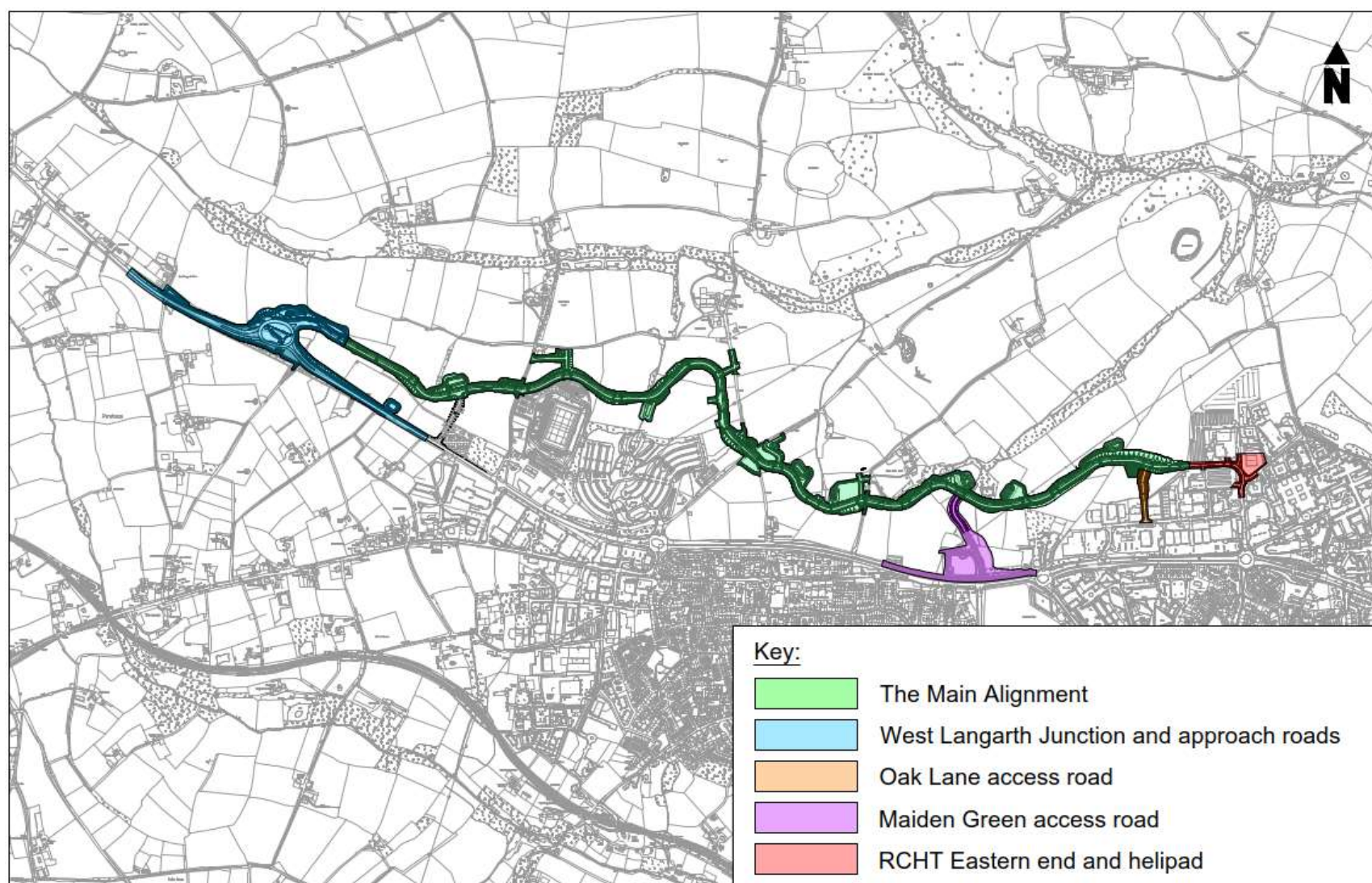
- 5.12 A meeting attended by DisAbility Cornwall and Cormac Solutions Ltd took place 17 June 2020. Several comments were raised during this meeting:
- They welcomed signal-controlled crossing points at the West Langarth junction, but requested equestrians have a segregated crossing points alongside the general use pathway. It was acknowledged the 5m width of the crossings was sufficient to accommodate this.
 - The maximum speed of 20mph and raised crossing areas were also welcomed. However, it was noted the visually impaired are becoming increasingly nervous due to the increase in the number of electric vehicles because they cannot hear them approach, consideration should be given to more zebra crossings where pedestrian traffic is likely to be greater.
 - There was a request for handrails where the pathway gradient is steep and regular seating along the route.
 - Provision of visible waste bins, signage and include tactile paving at suitable locations.
- 5.13 Where practicable, the above comments have been taken into consideration.

6. Design Evolution

Technical Assessment Process

- 6.1 This section of the DAS provides a brief summary of design options considered and how the original alignment submitted for the HIF bid evolved into the preferred option and the proposed development.
- 6.2 Drawing on advice contained in published documents, Cormac Solutions Ltd prepared two internal technical appraisals which set out key parameters for informing the NAR design process. The NAR mainline and cross sections have been designed in accordance with standards set out in these documents.
- 6.3 The Main Alignment Technical Appraisal (Cormac Solutions Ltd, 04 February 2020) detailed options and development of the NAR's main alignment, its associated side roads and the West Langarth junction. This document put forward a set of high-level design objectives for the NAR main alignment which can be found at paragraph 7.2 of this DAS.
- 6.4 The Main Alignment Cross-Sections Technical Appraisal (Cormac Solutions Ltd, 30 January 2020) focused on the detailed concepts for the proposed NAR cross section. This document set out the aims and objectives for the NAR cross-section which can be found at paragraph 7.12 of this DAS.

Figure 6-1: Identification of scheme elements considered as part of options appraisal process



- 6.5 These assessments focused principally on design speed and horizontal and vertical alignment, they subsequently fed into an options appraisal which was undertaken to consider alternatives for the following key elements of the NAR. Figure 6-1 demonstrates the location of these individual elements within the overall NAR Site.
- The main alignment designs based on varying design speeds and standards.
 - A two-stage assessment of junction options for the West Langarth junction.
 - The access road associated with the petrol filling station at Maiden Green, this was undertaken in liaison with the landowner.
 - The access from Oak Lane, at Treliske industrial and trading estate, to the NAR.

- Helicopter landing site at the Royal Cornwall Hospital.

6.6 The original HIF bid alignment was assessed and deemed not to meet the key objectives of the route; i.e. to provide opportunity for development frontage with a low speed environment. The technical assessment process determined NAR specific design principles which served to develop further design iterations of this alignment, culminating in recommendation of a preferred option.

The Main Alignment

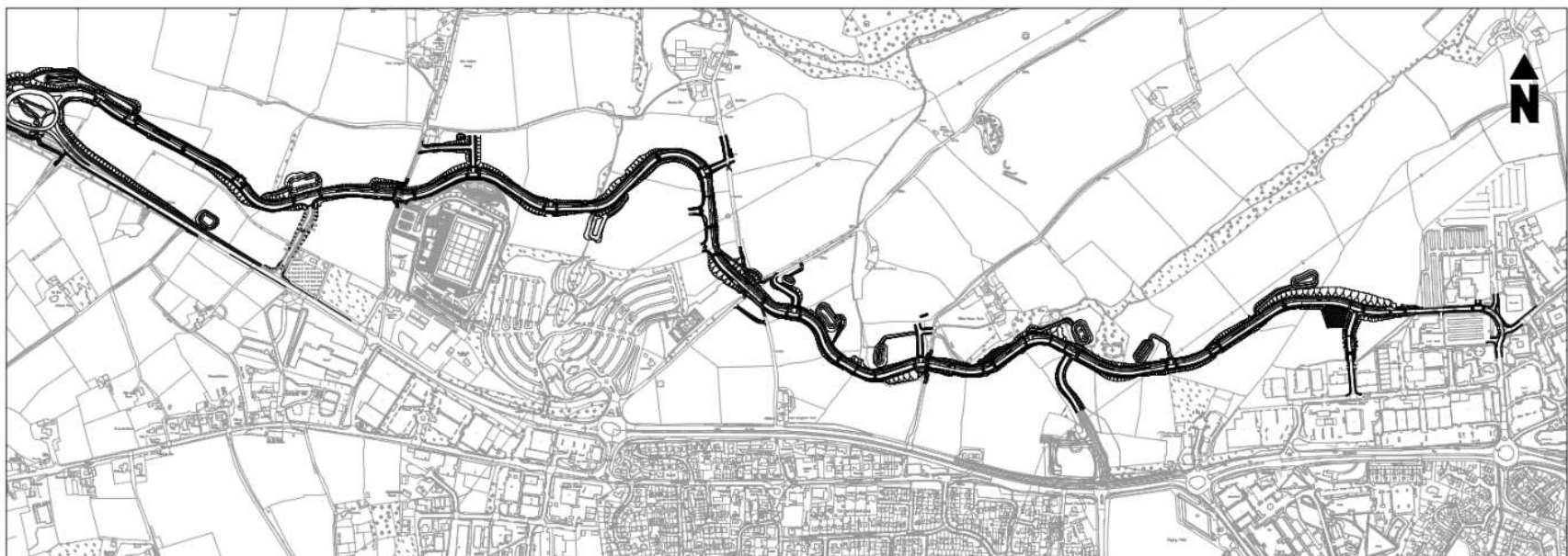
6.7 The main alignment for the NAR was developed using the principles agreed and stated within the Main Alignment Technical Appraisal (Cormac Solutions Ltd, 04 February 2020), which details the proposed methodology and design parameters to be taken forward in the development of the NAR geometry. In concluding the main alignment, design options were measured against the following criteria:

- maintaining longitudinal gradients to a maximum of 6% to encourage walking and cycling achieved by following existing ground contours/topography;
- minimising lengths of straight sections of road to approximately 100m to discourage higher speed;
- limiting horizontal radii to discourage higher speed; and
- restricting forward stopping sight distance in line with the selected design speed.

6.8 Several design options were assessed to detail the impacts of varying design approaches before concluding the design approach for the main alignment. One option (Option 2) was developed using the agreed design parameters and was therefore taken as the benchmark alignment to record design changes and decisions from. The initial set of options that were assessed included:

- Option 1- Original HIF bid alignment;
- Option 2- Selected alignment for development (using standards associated with 50kph (30mph) design speed and Manual for Streets);
- Option 3- Alignment designed to standards associated with 30kph (20mph); and
- Option 4- Alignment designed to control speeds to 30kph (20mph) solely through horizontal geometry.

Figure 6-2: Preferred option for the NAR main alignment



6.9 From this assessment a further ten variations of the main alignment were developed through an iterative process. Main alignment design development was divided into separate sections where alternative sub-sections for the alignments were individually developed. Six independent options (relating to the Willow Green area) were taken forward for review, a high-level assessment of cost measured against potential earthworks quantities, existing highway connections, landscape impact and other environmental factors, was undertaken. One of these options was selected as the preferred option subject to amendments being required to the alignment east of the proposed Park & Ride extension.

6.10 Ultimately Option 14 was concluded to be the preferred main route option for presentation within the hybrid planning application, as demonstrated at Figure 6-2. This is subject to further minor changes which will be recorded as part of a further options report.

West Langarth Junction

6.11 The West Langarth junction forms the western gateway to the NAR and the proposed Langarth Garden Village Development site. As part of the early development of the HIF bid in 2018 several vision statements for the NAR junction with the A390 were agreed upon:

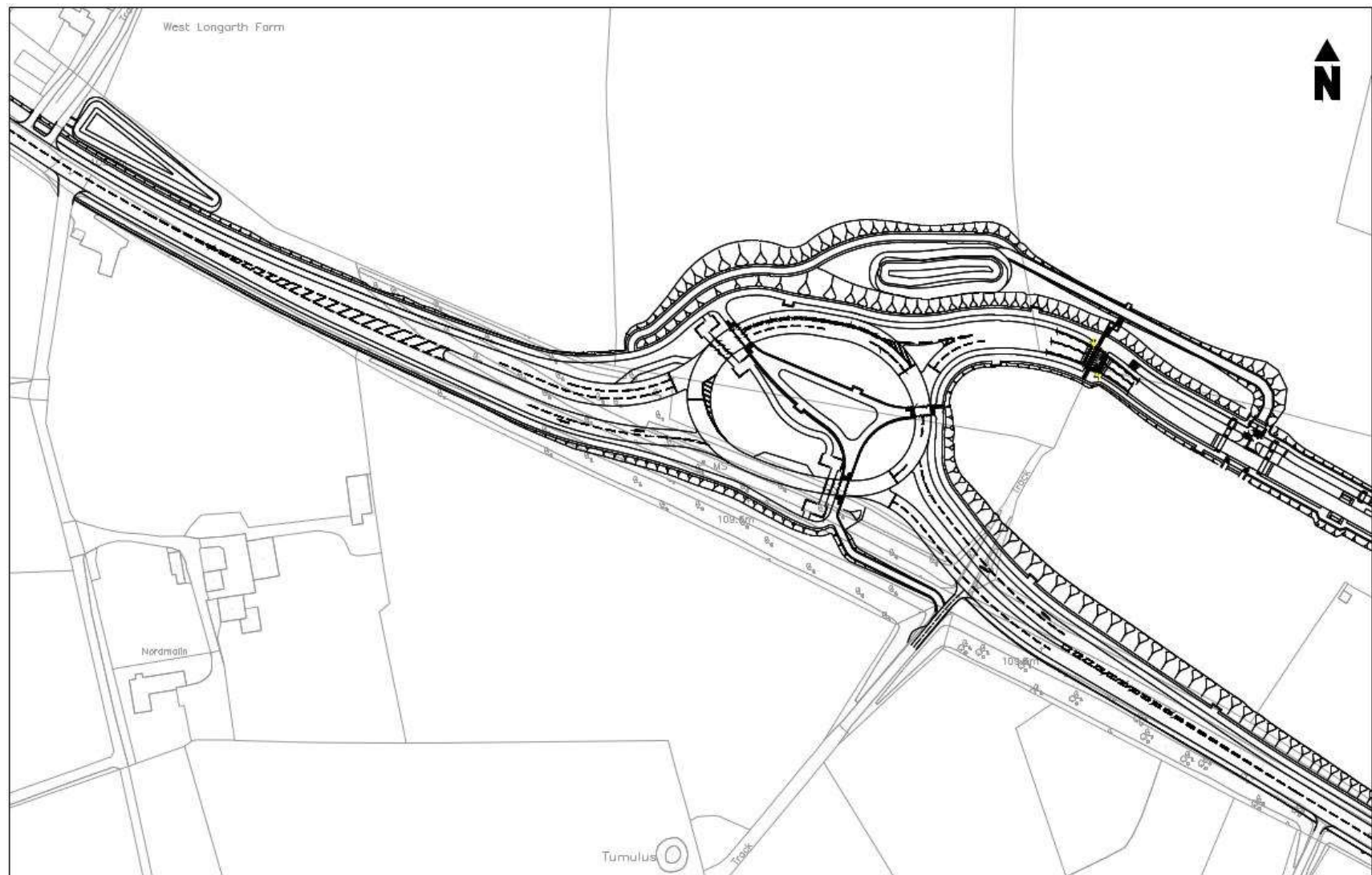
- The junction needs to have consideration of potential traffic volumes for capacity and lane requirements, especially through the AM and PM peaks.
- The two-lane split for the A390 and NAR needs to be as far away from the junction as possible.
- The junction layout needs to promote the NAR as primary access to the Park & Ride and The Royal Cornwall Hospital.
- The junction needs to provide a two thirds (A390) to one third (NAR) split of traffic between the NAR and the A390 following completion of development.
- The junction is to provide a high value streetscape element and a gateway into the Langarth Garden Village Development as well as Truro City.
- The junction needs to provide suitable facilities for cyclists and other non-motorised users (NMUs).

6.12 Sixteen junction options were created for assessment. The first stage of a two-stage assessment was carried out by the project team on 30 May 2019. The project team included Cornwall Council Asset Maintenance; Cornwall Council (client); Cormac Solutions Ltd (as the NAR design team and construction team); and AECOM (environmental). During this assessment, junction options 1-14 were presented and judged against the following criteria:

- Is the option appropriate for the proposed traffic flows?
- Does the option appear to be feasible in construction terms?
- Does the option appear to be deliverable for a comparable cost (or less) than the particular junction arrangement submitted as part of the HIF bid?
- Does the junction appear to be acceptable in environmental terms?
- Is the junction considered suitable on safety grounds given the context of the design flow and speed?
- Does the junction allow delivery of adjacent schemes (including Saints Trail and private development)?
- Does it meet the design brief/principle aims of the project?

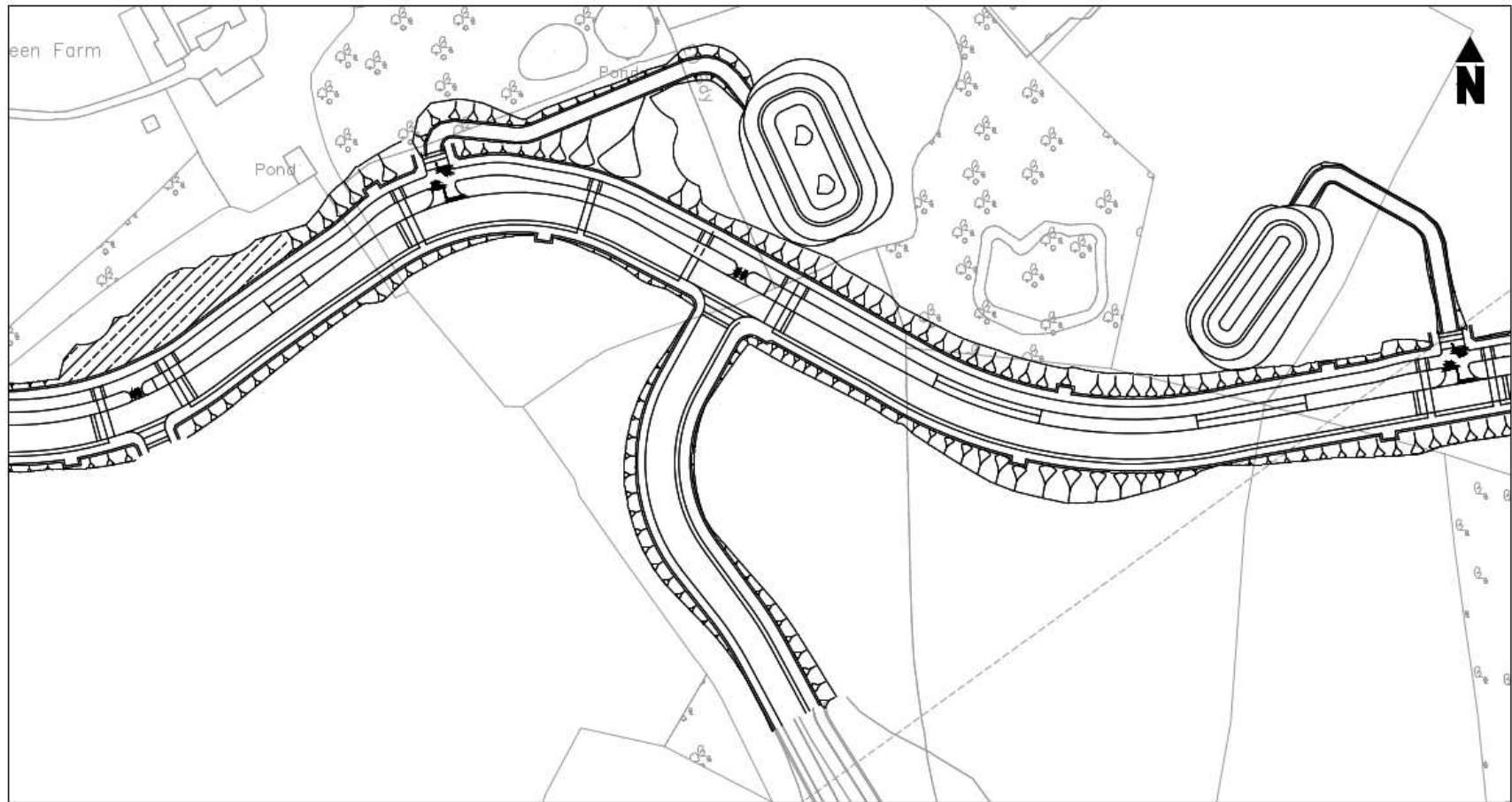
6.13 It was initially confirmed that six of the sixteen options should be developed further for detailed assessment under stage two. The second stage considered options against four criteria: environment; impact on society; engineering/technical; and buildability.

6.14 Following a meeting on 16 July 2019 between the NAR design team, the Langarth Garden Village master-planners, Cornwall Council and an independent consultant for streetscape design, it was decided that only two options should be taken forward for further detailed assessment. This detailed assessment concluded Option 15 as the preferred option for West Langarth junction. In respect of Option 15 it was recommended that the roundabout be reviewed with the aspiration to reduce speed to 40mph on the A390 west of the roundabout, reduce street furniture, consider views from the roundabout and consider additional planting to limit views along the redundant A390 section. Refer to Figure 6-3 for Option 15.

Figure 6-3: Preferred option (15) for West Langarth Junction

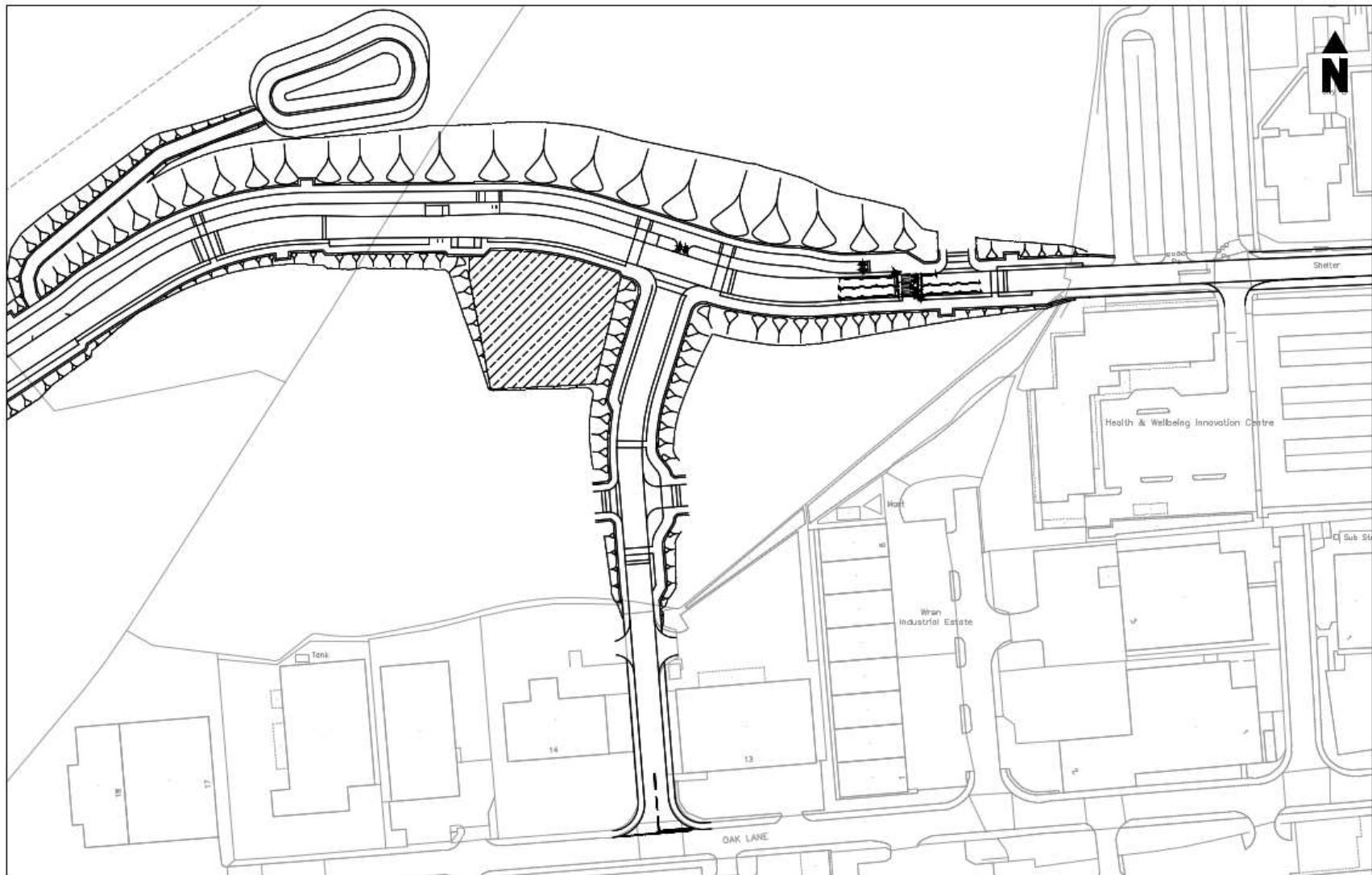
Petrol Filling Station Link at Richard Lander Junction

- 6.15 In January 2019, Walker Developments (SW) Ltd submitted a planning application for a new petrol filling station at Maiden Green (application reference PA18/11022). This planning application included an access road providing a direct connection from the existing A390 Richard Lander School junction to an assumed location and level on the NAR.
- 6.16 Since that planning application was submitted the NAR main alignment has been developed, superseding the assumed location and level included within planning application reference PA18/11022. The NAR design team were tasked with designing an access road connecting the northern end of the proposed petrol filling station access road and the NAR main alignment. The biggest constraint to the petrol filling station is 132kV overhead power cables.
- 6.17 All options relating to this area of the scheme were designed to tie in with design information received from the developer along the centreline of either the western or northern access roads for the petrol filling station.
- 6.18 Six options were reviewed for the access road associated with the petrol filling station in liaison with Walker Developments (SW) Ltd. Option 6 was concluded to provide the most viable design-solution and was therefore the preferred option, refer to Figure 6-4. It was noted that the section of access road covered within the planning application for the petrol filling station did not comply with the geometrical parameters selected for developing the NAR and associated side roads in relation to its steeper longitudinal gradient. This was determined to be acceptable on the basis of alternative pedestrian and cycle links being provided within the overall Langarth Garden Village masterplan.

Figure 6-4: Preferred Option 6 for the petrol filling station access road

Oak Lane

- 6.19 At the eastern extent of the scheme the NAR ties into the Treliske industrial and trading estate, passes the Health and Wellbeing Innovation Centre and connects to the existing highway network at Penventinnie Lane by the hospital helipad. Options for improving capacity at the existing A390 Treliske roundabout are limited, and in order to reduce pressure closing the eastern extent of Oak Lane to through traffic was considered. Westbound traffic from Treliske industrial and trading estate and Treliske hospital complex will therefore be directed to the NAR. Eastbound traffic from the industrial estate will be directed to the A390 via the existing left in, left out junction between 'The Range' and 'Vospers'. Eastbound hospital traffic would largely continue to exit via Treliske roundabout.
- 6.20 The assessment of an access road between Oak Lane and the NAR involved two variations of the NAR main alignment. One deviating to the north between the existing pylon for the 132kV overhead power cables; the second routed to the south of the existing pylon.
- 6.21 The approach for the Oak Lane access road was initially designed in accordance with the main alignment technical requirements for the NAR which stipulate a design speed of 30kph (20mph) and maximum longitudinal gradient of 6%. The topography is the main constraint in this area and the existing ground profile meant the longitudinal gradient was not achievable for the Oak Lane link without increasing the height of the NAR embankment. Four options were initially assessed tying into the two variations of the main alignment. At the Langarth Strategic Board Meeting on 05 June 2019, a decision was taken permitting side access links, including Oak Lane, being provided at a steeper gradient.
- 6.22 Following this meeting a further option was investigated, Option five, which provided a direct south to north link from Oak Lane existing highway to the NAR with a maximum longitudinal gradient of 8%. This alignment was assessed with the chosen main alignment of the NAR, located to the south of the existing pylon tower. Option five was selected as the preferred option for Oak Lane. As a result, the preferred access from the existing highway to the NAR at Oak Lane is proposed between 'Topps Tiles' and 'Western Electrical', refer to Figure 6-5.

Figure 6-5: Preferred option for Oak Lane access

The Royal Cornwall Hospital Helicopter Landing Site

- 6.23 Where the NAR alignment interfaces with the internal road system at the Royal Cornwall Hospital there is a helipad used by both the Cornwall Air Ambulance and Coastguard Air Sea Rescue. The route alignment through this area adopts the existing alignment but brings the road marginally closer to the helipad causing the potential for road users to be impacted by downdraught generated by helicopters landing or taking off. Initially, it was proposed to control traffic through adopting a wig-wag signal arrangement (light signals to diagram 3014 used to control road traffic at level crossings, swing or lifting bridges, tunnels or airfields) but there are inherent difficulties over the operational management responsibilities of such a system and it would not necessarily be adhered to by pedestrians using the footways.
- 6.24 A passive approach of constructing a wall similar to that adopted at Derriford Hospital's helipad in 2015 to protect all road users from the impacts of helicopter downdraught has been explored and is currently favoured.

Coordination with Masterplan Team

- 6.25 Continuous reviews of the NAR have been undertaken by the masterplan team to ensure the best possible horizontal and vertical alignment has been proposed. The masterplan and NAR briefs have been tested against each other, during which the idea of arrival spaces (or village squares) connecting the whole development emerged.
- 6.26 Following agreement of the NAR alignment, iterations of the proposed land uses associated with the masterplan were developed based on the idea of landscape led development.
- 6.27 Existing and proposed utilities constraints have been identified and taken into consideration through the development of the scheme.

7. The Design Rationale

Introduction

- 7.1 The design of the NAR including its junctions and side roads has been undertaken in accordance with relevant design guidance referenced in Section 4 of this DAS while being influenced by the stakeholder engagement process.
- 7.2 A set of high-level design objectives have been developed by the design team for the NAR. These build on the vision and design approach for the Langarth Garden Village Development set out in the Design Code; the Design Principles agreed with Cornwall Council for the masterplan (refer to Section 1.03 of the masterplan DAS) for the purpose of guiding the project and ensuring key ideas and focuses are upheld; and the opportunities list for the development (refer to section 3.04 of the masterplan DAS). The high-level design objectives are:
- The selected design speed for the NAR is 30 kph (which corresponds with a 20mph speed limit). This will be controlled with a combination of layout and alignment constraints.
 - The NAR is to carry approximately 30% of the A390 traffic flows between West Langarth and Treリス roundabout, following development of the Langarth Garden Village Development.
 - The NAR is to be direct, to be attractive as a commuter route to key destinations such as the hospital, but with slowing features through the housing developments.
 - The typical NAR cross section is to be 19.6m wide (refer to section 7.14 for further information on how this is made up).
 - The NAR should provide an inclusive area usable by all.
 - The route should be easy to understand and navigate.
 - The finished scheme should be constructed of quality materials.
 - The scheme should support Cornwall's Environmental Growth Strategy for a low carbon economy, providing local access to nature from the A390 corridor.
 - The NAR, and in particular the West Langarth junction should provide an attractive gateway that signals to the motorist the change between rural and urban areas.
 - The scheme should provide at-grade crossing facilities and usable cycling and walking infrastructure that is, where possible, separated by attractive landscaping.
 - There will be cycle priority at side roads.

Function of Proposed Development

- 7.3 The NAR will become the main commuter access route from the A390 to destinations on the west side of Truro, including the Park & Ride; Treリス industrial and trading estate; and The Royal Cornwall Hospital. It has been designed as an attractive alternative to the A390 for such users.
- 7.4 The NAR will also provide access for the Langarth Garden Village Development. This will take the form of a multi-user access route through the overall development site, while achieving a high standard of urban design to assist in creating a sense of place and community within the area. The appropriate selection of horizontal and vertical design parameters and implementation of features within the cross-section of the carriageway contribute towards this.
- 7.5 The NAR is expected to accommodate 1,700 two-way traffic flows in the PM peak hour following the delivery of 3,550 residential units, 200 extra care units and 50 units for health keyworkers and student accommodation by 2038 as part of the Langarth Garden Village Development. Alongside it will also provide environmental enhancement through an integrated landscaping and SuDS scheme.
- 7.6 The NAR and associated highway development will combine to relieve traffic congestion and will not have a significant effect on local air quality within the AQMA.

Overarching NAR Specific Design Principles

Principles of the NAR

- 7.7 A set of NAR specific design principles have been used to set a standard along the entire route of the NAR. These have been chosen in order to:
- Ensure the route encourages low speeds by minimising the length of straight sections of road to approximately 100m and limiting horizontal radii.
 - Follow the topography of the land as close as possible in order to reduce earthworks and to retain a more rural feel.
 - Provide routes for NMUs that achieve a higher design standard when compared to more traditional estate roads which will help unlock development potential along the length of the NAR.
 - SuDS to be incorporated into landscaped areas.
- 7.8 The route runs east to west and where possible follows the existing east-west topography. The land generally slopes from south to north creating a series of small cuttings and embankments. The geometry of the road forces traffic speeds down as it follows contours. This is an efficient and economical approach to reducing significant earthworks (minimising material consumption) and avoiding highways structures along the route, meaning there are no elevated sections of road. Working with the topography in this way reduces the adverse landscape and visual impacts of the proposed development. This also ensures that development plots remain accessible and it is possible to provide a development frontage to the NAR.
- 7.9 The design allows for a more gradual transition from rural to urban, where the Garden Village and the NAR is built around the environment instead of imposing itself upon it. These principles make for a sustainable design that protects and enhances the Cornish environment.
- 7.10 An allowance has been made for a standard specification timber post and wire fence along the length of the NAR to separate the site from development plots. It is anticipated that when development plots are brought forward under subsequent reserved matters applications this fence will be replaced by appropriate boundary treatment that complies with the masterplan Design Code.
- 7.11 There are four landscape character-areas adopted along the NAR route which have been developed as part of the design approach and are detailed in the Design Code. As the NAR flows through the Langarth Garden Village Development the character areas respond to different areas of the masterplan. These character areas can be summarised as follows:
- **Traditional** – include a natural aesthetic in keeping with the local vernacular.
 - **Standard** – creation of formal boulevard with natural ground cover.
 - **Suburban/Landscape connections** – a formal transition from rural to urban.
 - **Urban** – adjacent to urban areas and designed as urban gardens.
- 7.12 These character areas have been developed as part of the overall masterplan for the Langarth Garden Village Development. They assist in defining key nodal points, or arrival spaces, which are anticipated to be developed as village or commercial centres. The relationship between the NAR and masterplan evolves along the route through these nodal points. For example, arrival spaces which adopt an urban character, have been made distinguishable using hard and soft landscaping as well as suitably detailed quality finishing materials. In these areas the NAR design will become an extension of the arrival space.
- 7.13 Further description of the character areas in the context of the NAR can be found in the Landscape and Drainage section of this DAS at paragraph 7.62.

NAR Cross Section

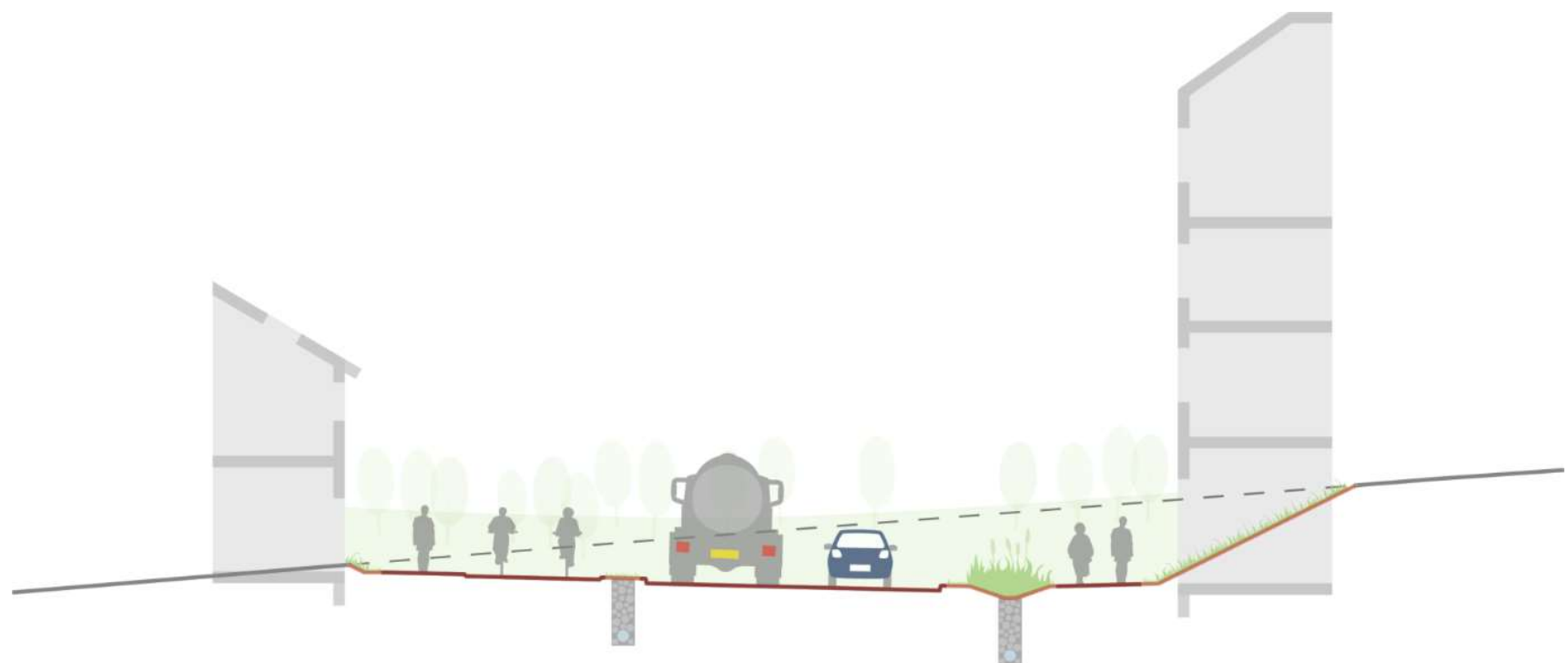
- 7.14 As set out in the Cross Section Technical Report (Cormac Solutions Ltd, 30 January 2020), the following aims and objectives have been prepared for the NAR cross-section:
- Creating a 'sense of place' through the incorporation of a high level of NMU provision.

- Providing opportunities for landscaping and SuDS.
- Parking provided adjacent to highway where required to promote a sense of urban environment.
- Provision for sustainable transport to be prioritised; walking, cycling and bus travel.
- Setting carriageway lane widths.
- Minimising visual clutter from signage and street furniture.

7.15 A typical cross section of the NAR is 19.6m wide and principally comprises of carriageway, NMU provision with soft landscaping between. Figure 7-1 demonstrates the NAR being made up of two 3.25m wide standard carriageway lanes; totalling 6.5m, in the centre. Running parallel to the south is a 2m wide footway for NMUs, separated by a 1m wide soft landscape buffer, interspersed with resting points. To the north is a 4.7m wide (although the actual width will vary along the NAR) landscape buffer sufficient for more substantial planting and SuDS (swales, rain gardens and tree pits). This buffer separates the NAR from the proposed 3.4m wide segregated two-way cycle lane to the north of the NAR. The width of the cycle lane is based on a cycle flow of less than 150 cycles per hour. Finally, to the north of the cycle track is a further 2m wide footway.

7.16 On-street parking bays are provided along the NAR and appear in the cross section. Typically, these are provided in groups of five spaces which alternate between north and south sides of the carriageway within the landscape buffer zone to break up visual impact. A footway has been provided between the parking bays and cycle lane to avoid car doors being opened into the path of cyclists.

Figure 7-1: Typical Cross Section of the NAR (Section F-F from 1665_CSL_GEN_03MZ_DE_CH_0091 General Arrangement Sheet 3 of 6)



7.17 In accordance with the guidance for Primary Road contained in the Design Code, the NAR cross section segregates different road users as well as introducing landscape buffers between them. This approach guarantees useable infrastructure for pedestrians and cyclists in an attractive soft environment set back from vehicular traffic. The cycle lane to the north will be prioritised throughout the NAR, including at side road junctions where the road widens through the landscape buffer to allow priority crossing for cyclists. These design measures ensure this cycle route is legible and attractive to users, which promotes inclusive access.

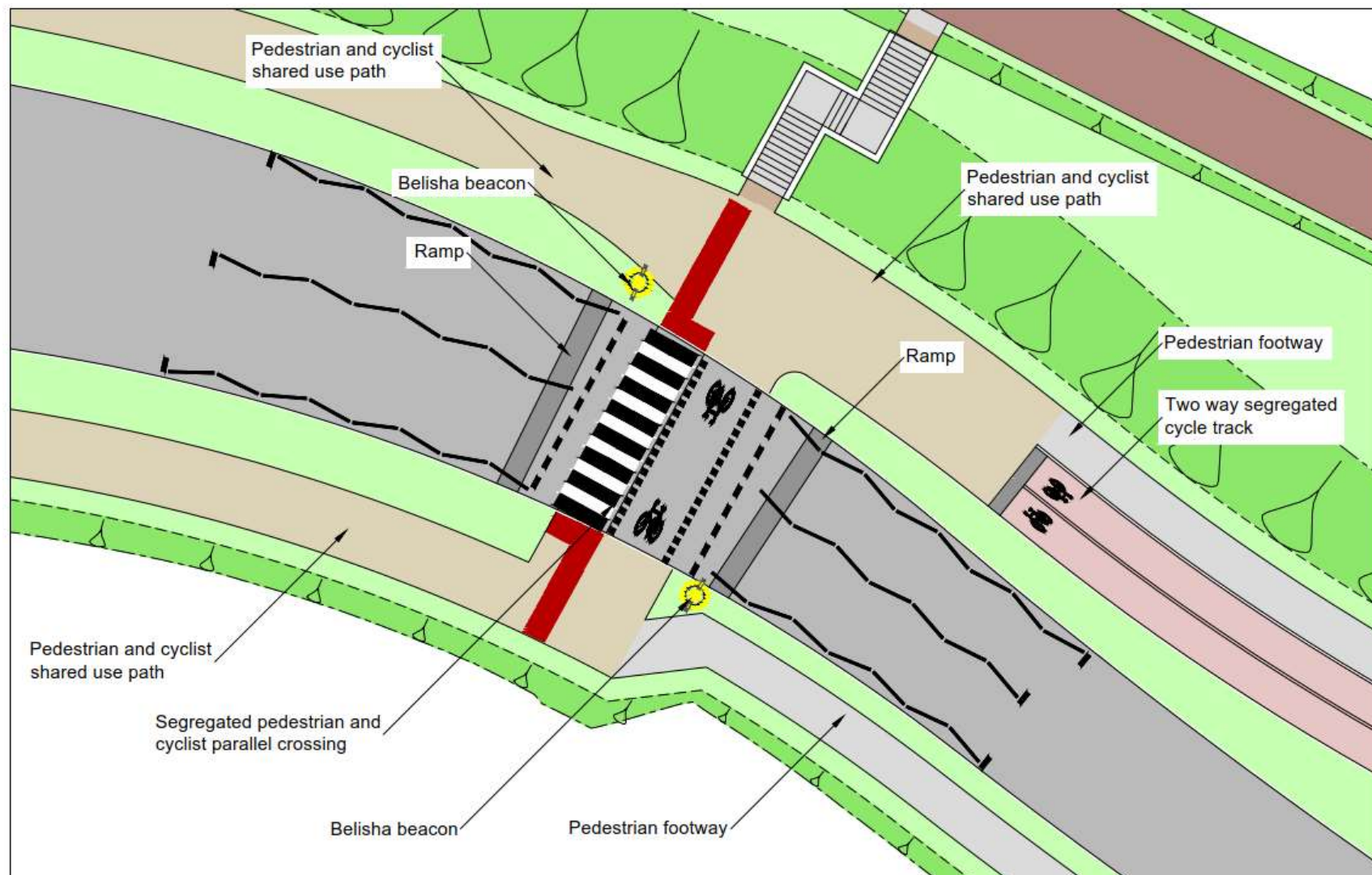
7.18 It is anticipated that the NAR will be constructed from the following materials:

- Vehicular carriageway: standard bituminous macadam;
- Footways: bituminous macadam with surface treatment to suit character areas;
- Cycle lane: bituminous macadam with surface treatment to suit character areas;
- Junction cross overs and NMU crossing points: finishes to contrast the main vehicular carriageway; and
- Village centres: footway and carriageway as above detailed with appropriate materials, to be confirmed later.

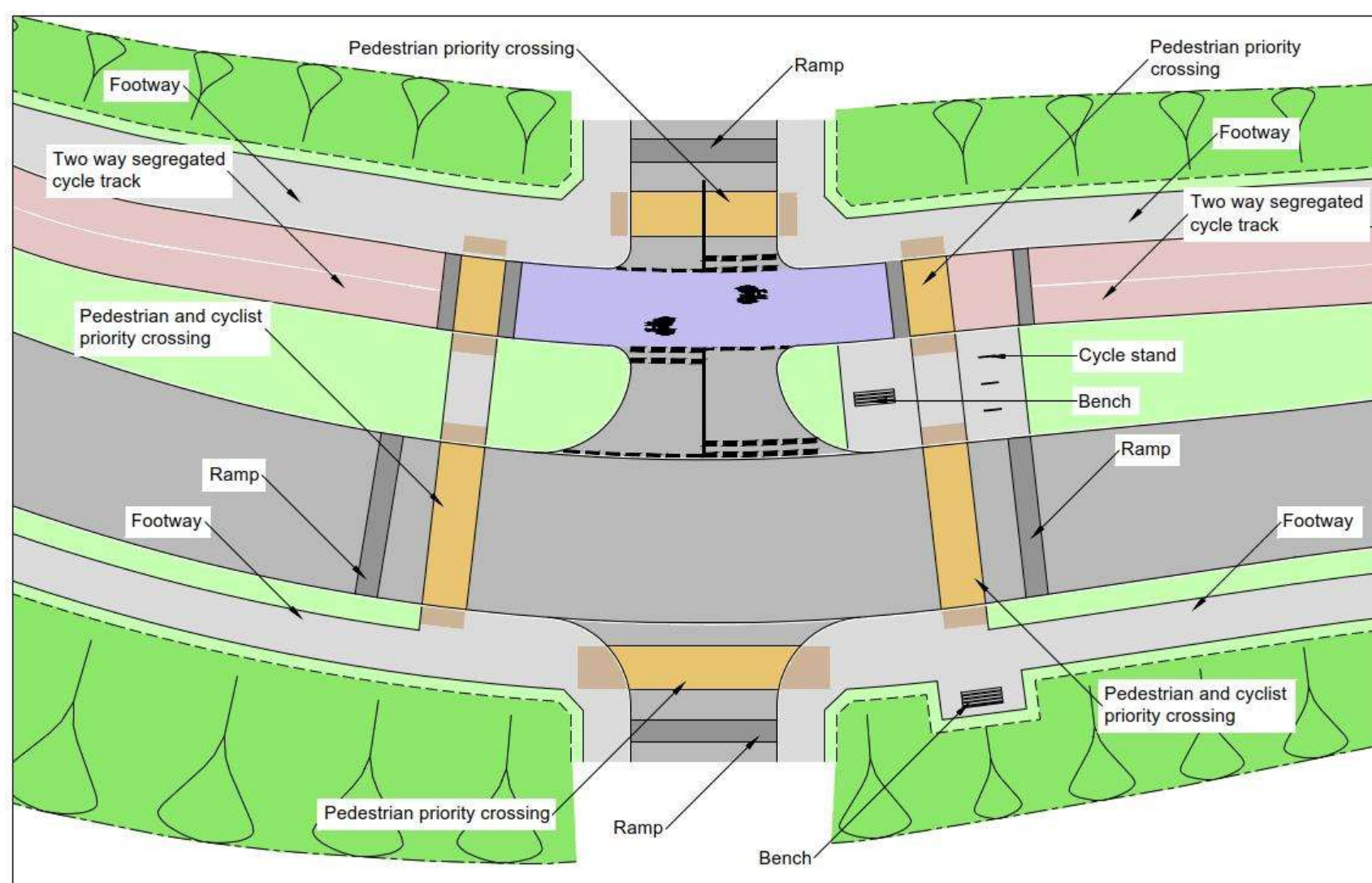
NMU Crossings

- 7.19 None of the NMU crossings along the NAR main alignment are signal controlled. A passive approach to NMU crossings has been adopted to assist in maintaining a visually attractive streetscape. Vehicle speeds are restricted to 20mph.
- 7.20 Parallel zebra crossings have been proposed at the western and eastern extremities of the NAR main alignment. These have been located along existing desire lines. They operate in the same way as a regular zebra crossing but include allocated lanes dedicated to pedestrian and cycle users. These crossing points give priority to pedestrians and cyclists across the NAR. Figure 7-2 demonstrates an example of a parallel zebra crossing.

Figure 7-2: Parallel zebra crossing point



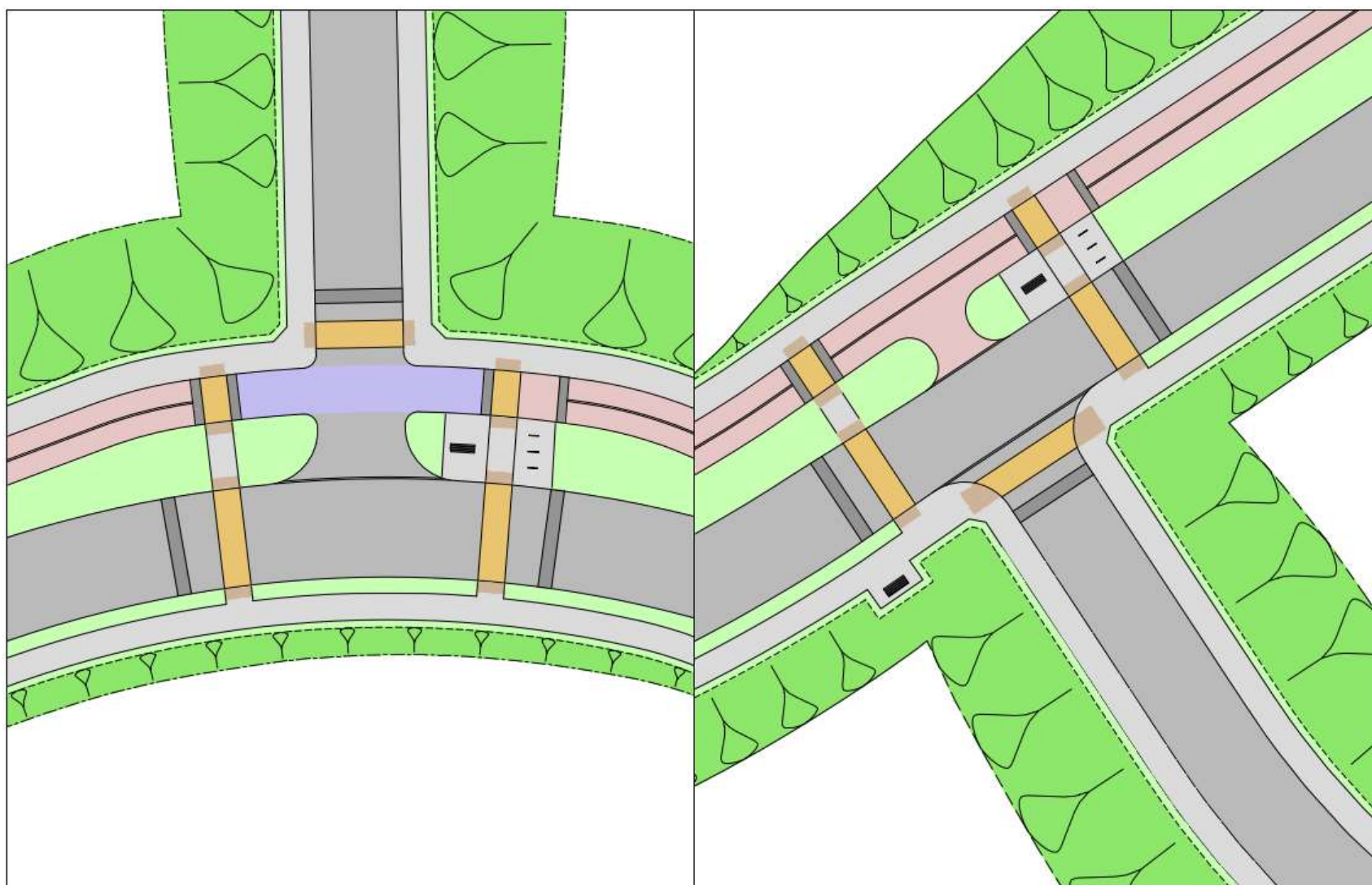
- 7.21 All other NMU crossing points along the NAR are non-priority (uncontrolled). They have been located at periodic points throughout the NAR on existing and anticipated future desire lines, close to side road junctions, to avoid NMUs having to take detours. This approach contributes towards NMU routes being easy to understand. Figure 7-3 demonstrates a typical example of an at grade crossing along the NAR.

Figure 7-3: Typical NMU crossing point

- 7.22 NMU crossings will be at grade and sited on raised junctions or speed tables (a traffic calming device longer than a speed hump which raise the entire wheelbase of a vehicle) to further encourage slow vehicle speeds. It is proposed the priority crossings will make use of different surface materials to contrast the main carriageway and highlight the NMU crossing area. All crossings will make use of tactile paving or stainless-steel tactile studs inserted in the paving. Confirmation of the materials and details will be provided at a later date.

Side Road Junctions

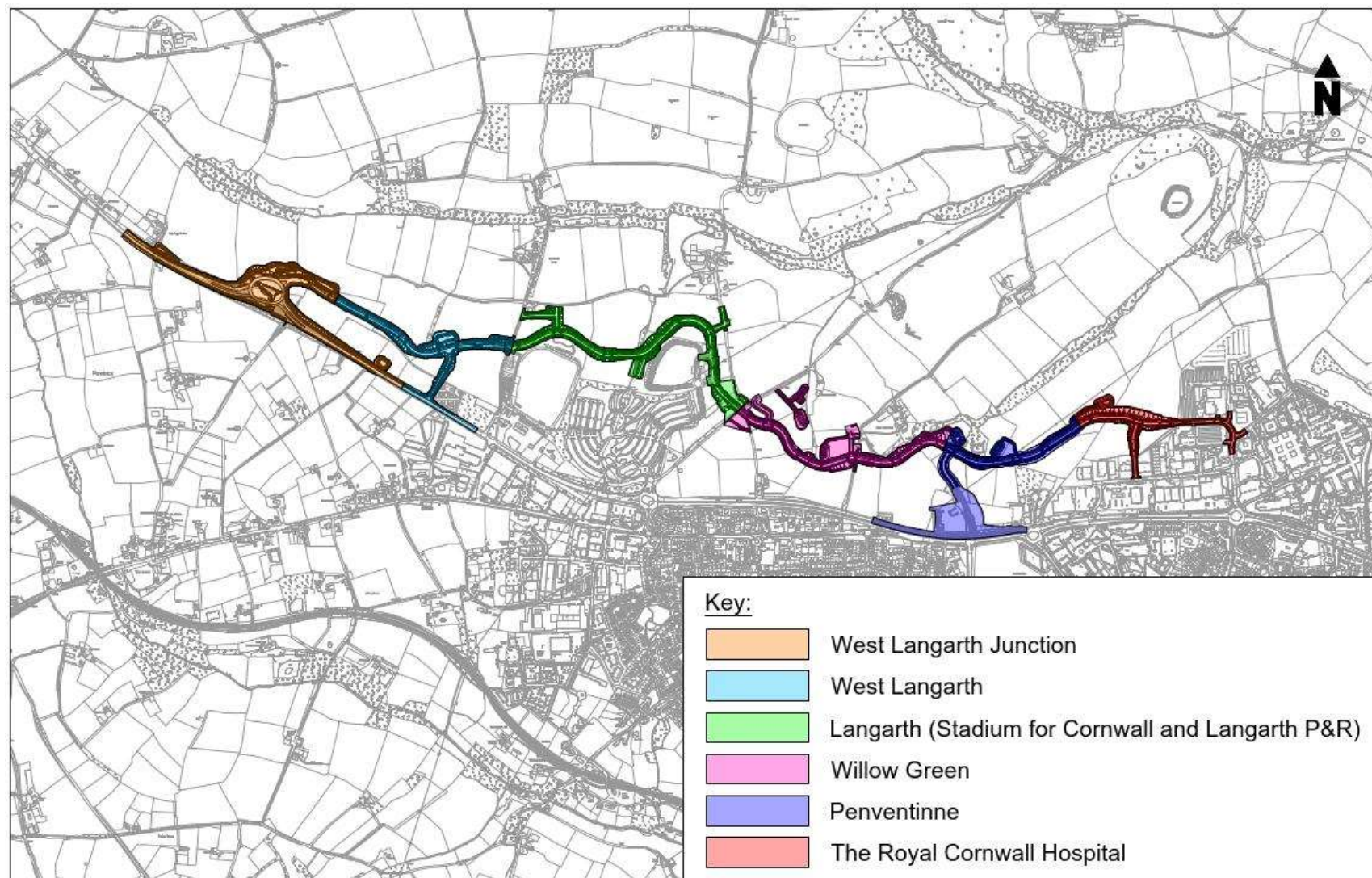
- 7.23 Two standard design approaches have been developed for side road junctions along the NAR. One for side road junctions to the south and a second to the north, the latter incorporating the priority cycle lane. In both cases they will include a raised table on the carriageway to slow vehicular traffic while providing NMU crossing provision. This will support the principle of giving priority to pedestrians and cyclists at all junctions. As noted above, these crossings are denoted by a change in surface materials. Examples of both side road scenarios can be found at Figure 7-4.
- 7.24 Side road stub locations have been coordinated with the masterplan for the Langarth Garden Village Development. These are considered fixed access points for the parcels of land they serve. It is acknowledged that these parcels may not be developed immediately, as such the proposed interim design ensures an appropriate link up of footpaths as well as minimising the risk of areas being used for fly-tipping.

Figure 7-4: Typical side road junctions

Route and Junctions

7.25 The rationale behind the routes and junctions has been divided into the following sections for ease of reference Figure 7-5 highlights where these individual elements are located along the route of the NAR.

- West Langarth Gateway;
- Langarth Park;
- Stadium for Cornwall, Park & Ride, and Langarth – Community Neighbourhood;
- Willow Green Park;
- Penventinnie Square; and
- The Royal Cornwall Hospital.

Figure 7-5: Identification of scheme elements along route of NAR

West Langarth Gateway

- 7.26 The NAR begins adjacent to West Langarth Farm with a junction on the A390 forming a new roundabout called the West Langarth junction. The approach to this junction, travelling east along the A390, provides a gradual slowing of speed between high speed rural and low speed urban environments. Three lanes are provided, the left-hand lane leads to the NAR, whilst the right two lanes head towards the A390. This has been designed to accommodate future predicted traffic volumes and achieves a one third/two third split required between the NAR and A390.
- 7.27 The roundabout takes the form of a large oval, which accommodates an attractive landscaping feature and attenuation pond in the centre. The size of the roundabout and associated landscaping creates an organic feel, maintaining the rural context while introducing a gradual transition into the new urban area to the east.
- 7.28 The proposal for a roundabout at this junction was considered more appropriate than a T-junction. The West Langarth Gateway design will welcome road users into Truro while promoting the NAR as the primary route to key destinations such as the Park & Ride and The Royal Cornwall Hospital. The use of a T-junction in this location would have resulted in a large and unsightly expanse of bituminous macadam to accommodate all the required turning movements and the need to turn off the A390 to the hospital rather than take the easier decision to choose the NAR exit at the roundabout. The proposed roundabout provides opportunities to create an attractive arrival space for the Langarth Garden Village Development as well as an opportunity for some potential artwork within the roundabout.
- 7.29 The design of the West Langarth junction has been developed to facilitate NMU movements through the centre of the roundabout. The inclusive provision of NMUs has been paramount to the design of the roundabout. Pedestrian and cycle crossing points are located at three locations around the roundabout circulatory and address expected future desire lines, ensuring they cater for all sides of the junction. This NMU provision will incorporate the Saints Trail due to follow the line of the A390 into Truro. NMU routes also run parallel to the north and south of the A390 travelling around the roundabout. This provides NMUs with multiple options for traversing this junction. Refer to Figure 7-6 which demonstrates how NMU routes traverse the roundabout.

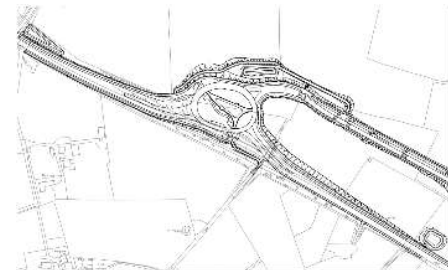
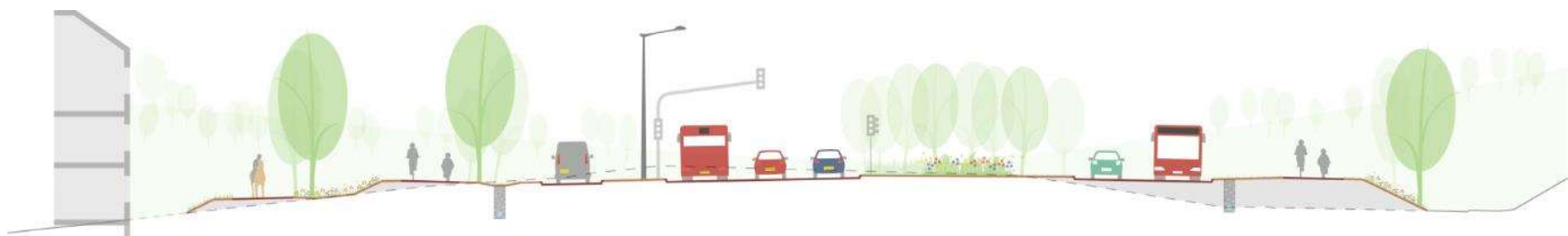


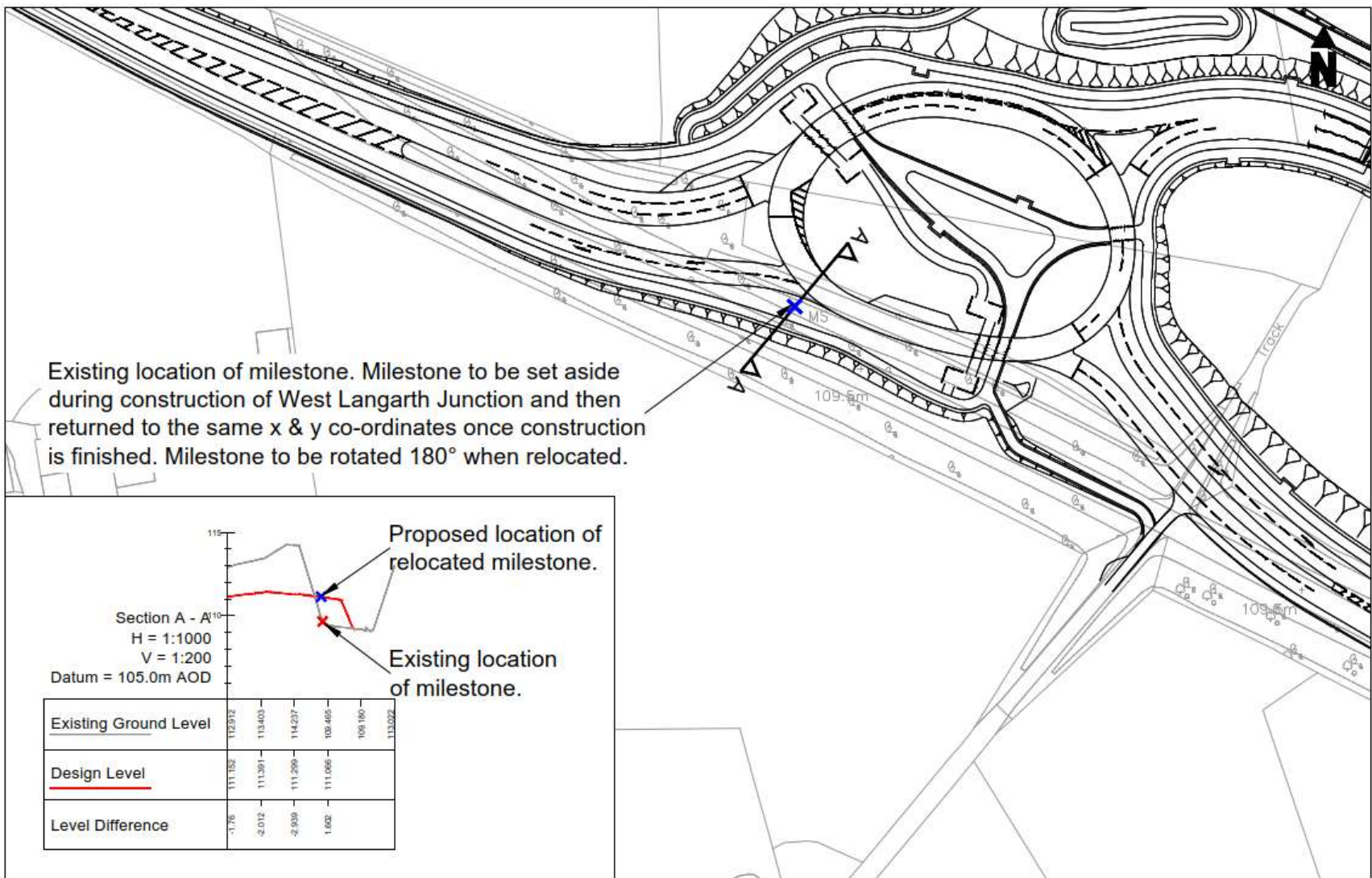
Figure 7-6: West Langarth junction

- 7.30 The roundabout sits approximately 2m above the existing A390 requiring an embankment where the topography falls away to the north. The careful consideration of topography in this area has ensured minimal cut and fill earthworks associated with this junction. Refer to Figure 7-7 for a typical section through the West Langarth Junction. The roundabout has also been designed in accordance with DMRB standards appropriate for a primary route.

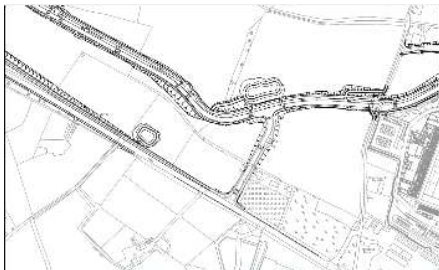
Figure 7-7: Typical section through West Langarth junction (Section A-A from 1665_CSL_GEN_01MZ_DE_CH_0089 General Arrangement Sheet 1 of 6)

- 7.31 A masterplan decision was taken to provide a soft urban edge around the West Langarth junction continuing along the A390. To promote a positive relationship between future development and the West Langarth junction the masterplan proposes primary frontage to the east side of the roundabout. This will contribute to the creation of a high value streetscape for this arrival space.
- 7.32 The Listed milestone will be affected by the proposed West Langarth junction. Proposals agreed with the Milestone Society (Cornwall) involve the milestone being set aside during construction of the junction and returned to the same location post construction but raised to be adjacent to and visible from the new carriageway. Ground levels are due to rise in this area meaning the milestone will be installed at a new higher ground level. The milestone will be rotated 180° to face the realigned carriageway which will return the milestone to its original, and correct, location on the south side of the road. This is demonstrated at Figure 7-8. The relocation of the milestone will be subject to a separate application for Listed building consent.

Figure 7-8: Relocation of listed milestone



Langarth Park



- 7.33 The NAR starts immediately east of the West Langarth junction. At this location is a parallel zebra crossing allowing NMUs to join from the NMU provision to the west onto the segregated cycle route running along the north of the NAR (Refer to Figure 7-2). This crossing point is positioned on the line of the existing PROW running north south.
- 7.34 This section of road is relatively straight and is the only straight section over 100m along the entire NAR. The alignment optimises the view into the Garden Village along the tree lined NAR offering it as an attractive route rather than it appearing as a restricted access housing estate. The overall design ambition along this section is to provide a contemporary interpretation of a garden suburb. This vision for achieving this will include a tree lined avenue and mixed uses fronting onto the route. This will be delivered through the landscaping scheme and adjacent masterplan development.
- 7.35 There are nine side road junctions connecting the NAR to residential and commercial developments along this section of the route. Cyclists will have priority across these side road junctions on the northern side of the NAR.
- 7.36 Towards the eastern end of this section the NAR enters an arrival space referred to as Langarth Park with landscaping to both north and south of the NAR and beside the Interim Link Road (bus gate). The park creates a sense of arrival as well as a green setting for the NAR and surrounding development. This area is intended to provide a focal point for the social, cultural and commercial life for the new neighbourhood community that surrounds it. Further information on Langarth Park can be found within the Design Code. The highway design and park have been considered together; the masterplan proposes primary frontages around the park area and NAR. The character of the NAR will become urban through this arrival space.
- 7.37 Adjacent to Langarth Park is the bus gate access road between the NAR and A390. Also known as the 'Interim Link Road' (application reference PA20/00009) this commenced construction in September 2020 providing construction access to the Langarth development site as well as access for up to 300 dwellings before reverting to a bus only junction. On completion of the West Langarth junction the A390 end of the link road will become a bus gate. This bus gate will facilitate increased provision of public transport along the NAR to Truro and ensure non bus traffic uses the primary West Langarth junction. This ties in with

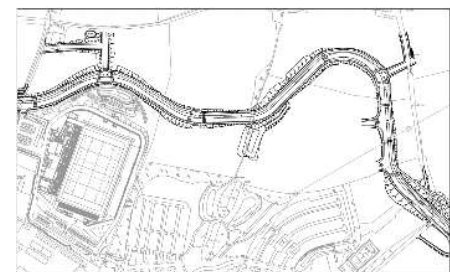
previous outline planning permission. Refer to Figure 7-9 for an extract of Langarth Park and the bus gate access.

Figure 7-9: Langarth Park and bus gate



- 7.38 Moving east from the Interim Link Road, there are no straight sections of road over 100m in order to discourage high speeds and allow the road to follow the contours and topography of the land. The curved areas of the NAR can be described as having a suburban character due to larger verge buffers allowing for avenues of trees to create a boulevard.
- 7.39 Before arriving at the Stadium for Cornwall a private access lane will be severed by the NAR alignment. New paths will be provided for pedestrian, cycle and equestrian access (expected to be classified as a bridleway). Alternative vehicular access is provided for users further along the NAR to retain private means of access.

Stadium for Cornwall, Park & Ride, and Langarth – Community Neighbourhood



- 7.40 The NAR route turns north to curve around the proposed Stadium for Cornwall towards the proposed Park & Ride extension. Through this section the alignment follows the boundary of the consented Stadium for Cornwall. This serves the purpose of increasing viable development land to the north of the NAR alignment. The stadium has an infiltration basin proposed immediately to the south of the NAR. As a result, the NAR has been designed to be above the invert level of the adjacent infiltration basin.
- 7.41 The NAR alignment returns north for a short distance before turning south around land earmarked for a future 600 space Park & Ride extension. Cut and fill earthworks through this area has been balanced to minimise impact on neighbouring development plots. The Park & Ride extension will be the subject of a separate reserved matters application but forms part of the wider Hybrid proposals.

Figure 7-10: Langarth Square



- 7.42 To the east of the Park & Ride the alignment is constrained by a pylon for the 132kV overhead power cables. There has been consideration to underground some overhead power cables through the Langarth Garden Village Development however this is likely to be several years after construction of the NAR so the NAR alignment ensures the required clearance to overhead cables and pylons.
- 7.43 The NAR alignment follows the eastern boundary of the Park & Ride extension. This alignment reduces the potential for ecological impact and hedge loss reducing adverse landscape and visual impacts. The alignment also maintains more of the existing rural highway network that will provide sustainable transport links through the wider Langarth Garden Village Development.
- 7.44 At this point the NAR will pass through Langarth Square an arrival space located at an existing junction. This location has been designed to create a village centre around the intersection of two ancient routeways which will form the central part of the Garden Village. While passing through Langarth Square the NAR will adopt an urban character where it is anticipated there will be mixed use active frontage onto the public square and an opportunity for a new Cornish Cross as a focal point.
- 7.45 Langarth Square has been designed to merge the NAR with existing Quiet Lanes with trees and hedgerows. The historic routeways have been incorporated into the design and landscaping of this area maintaining their historical function. Langarth Square provides wider connections from the NAR to the Garden Village to the north, south, northeast and southwest. Further information on Langarth Square can be found in the Design Code.
- 7.46 The vertical profile through the Langarth Square area has been carefully considered to follow existing levels as closely as possible. The land does however slope steeply to the north east so there will be ramps incorporated to maintain public access to the existing rural lane network. On the south side, slopes and terraces will frame a formal square while tying into the Quiet Lanes and other NMU routes.
- 7.47 In this location the NAR will sever existing maintained highways. Alternative vehicular access into these severed lanes is provided from the NAR through side roads to the east and west of Langarth Square. Existing sections of lane will be stopped up to vehicular traffic and reclassified as bridleways. Reference should be made to Figure 7-10 for an extract of Langarth Square.

Willow Green Park

- 7.48 Moving east from Langarth Square the main alignment passes through Willow Green Park. The NAR alignment through this area follows a similar route as the consented Willow Green Farm outline planning permission. The NAR alignment has been developed to more closely follow existing site contours while maintaining a maximum 6% gradient.
- 7.49 Towards the east end of this section a private access lane to Willow Green Farm will be severed by the NAR alignment. A new private means of access is provided via a new side road off the NAR. It is proposed as part of the Langarth Garden Village that a new bridleway will be created along the existing private access lane with private rights for vehicular access (north of the NAR). Where the NAR severs this lane new access ramps will be provided for walkers, equestrians and cyclists.
- 7.50 Further east the NAR main alignment enters the Willow Green Park arrival space, where the character will return to the urban character zone. Willow Green Park occupies a prominent position alongside the NAR, providing a gateway into new development in this area. The masterplan promotes outdoor sport provision at the west end of this arrival space, extending east this forms a linear park benefitting from the existing woodland and ponds. NMU routes connect directly into these outdoor facilities and amenity space. Refer to Figure 7-11 for an extract of Willow Green Park. Further information on Willow Green Park can be found in the Design Code.
- 7.51 On the southern side will be a link road connecting the NAR to the A390 at the Richard Lander School junction. The A390 end of this link already has outline consent PA18/11022 for provision of a petrol filling station (Walker Developments (SW) Ltd).
- 7.52 As a result of the overhead 132kV power cables in this area, the link road is not able to comply with geometrical parameters for the NAR and associated side roads. The longitudinal gradient is steeper than 6% however this is considered acceptable in this case due to alternative pedestrian and cycle links proposed within the overall development. The alternative to reduce the link road gradient would be to raise the NAR which would create large embankments reducing accessibility to the adjacent green spaces; this was decided on balance to be the less favourable option.

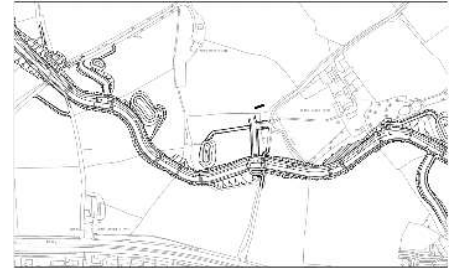
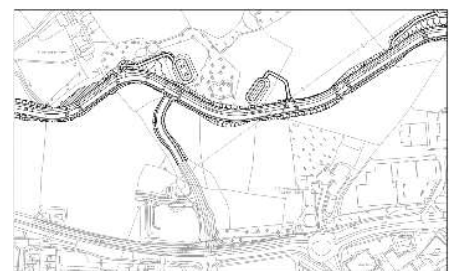


Figure 7-11: Willow Green Park (east and west)



Penventinnie Square

- 7.53 The NAR main alignment then passes through Penventinnie Square, where the alignment follows, as far as practicable, existing outline planning permissions for this area. The alignment negotiates several constraints which include the existing ponds, a mineshaft and overhead 132kV power cables on the northern side. On the southern side it is constrained by private development benefitting from planning permission PA18/06918, for erection of a Children's Play Centre Building (Spanview).



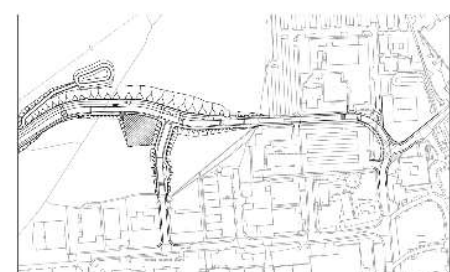
- 7.54 On the approach to The Royal Cornwall Hospital the alignment runs behind the Treliske Industrial Estate and is located south of existing overhead 132kV power cables to enable clear statutory distances between finished road level and existing cables (which also reduces associated construction risks).
- 7.55 The NAR main alignment then enters Penventinnie Park and Square, the most eastern arrival space before the route connects into The Royal Cornwall Hospital. This arrival space has been designed as a destination along the NAR, it adopts an urban character and will accommodate a village centre with active and residential frontages. Figure 7-12 demonstrates the relationship between the NAR alignment, Park and Square.
- 7.56 Within the Square is a link road to Oak Lane providing alternative access/egress to and from the industrial, retail and hospital areas for westbound traffic and easy access to the A30 avoiding the A390.
- 7.57 Penventinnie Square has been designed as a multi-functional space intended to serve users of the Royal Cornwall Hospital and the Treliske industrial and trading estate. Further information on Penventinnie Park and Square can be found in the Design Code.

Figure 7-12: Penventinnie Park and Square



The Royal Cornwall Hospital

- 7.58 From Penventinnie Square the NAR main alignment travels past the Health and Wellbeing Innovation Centre (HWIC) into the Royal Cornwall Hospital site. The second parallel zebra crossing will be located at this point to facilitate NMU connections with the surrounding area. At the eastern extent the NAR main alignment ties into the existing highway network at Penventinnie Lane. The route through this area will have minor modifications on the existing road as it is constrained on both sides by the HWIC and assets of The Royal Cornwall Hospital including the helicopter landing site and existing car parks.
- 7.59 The alignment proposes a new access to the Royal Cornwall Hospitals Trust Sterile Services Department on the north side, as requested by the NHS to provide faster access to supply the hospital. The proposed alignment will re-arrange priority at the existing junctions such that the car parks and Penventinnie Lane past the Duchy Hospital become side roads to the NAR. Figure 7-13 demonstrates the arrangement at this location.



- 7.60 A wall around the helipad (on the line of the existing low fence) is currently the preferred solution to preventing downdraught restricting highway use by vehicles and pedestrians, accessing hospital facilities. If a wall is not possible following further consultation traffic signals will be installed to stop traffic temporarily during helicopter take-off and landing and divert traffic via the nearby Oak Lane link road.
- 7.61 From here traffic will join the existing A390 at the Treliske roundabout. Options to improve the capacity of the Treliske roundabout are limited. Access/egress for westbound and A30 bound traffic from Treliske area traffic via the NAR will reduce pressure on the existing roundabout and reduce the existing queueing experienced at the end of afternoon shifts.

Figure 7-13: Proposed eastern end general arrangement



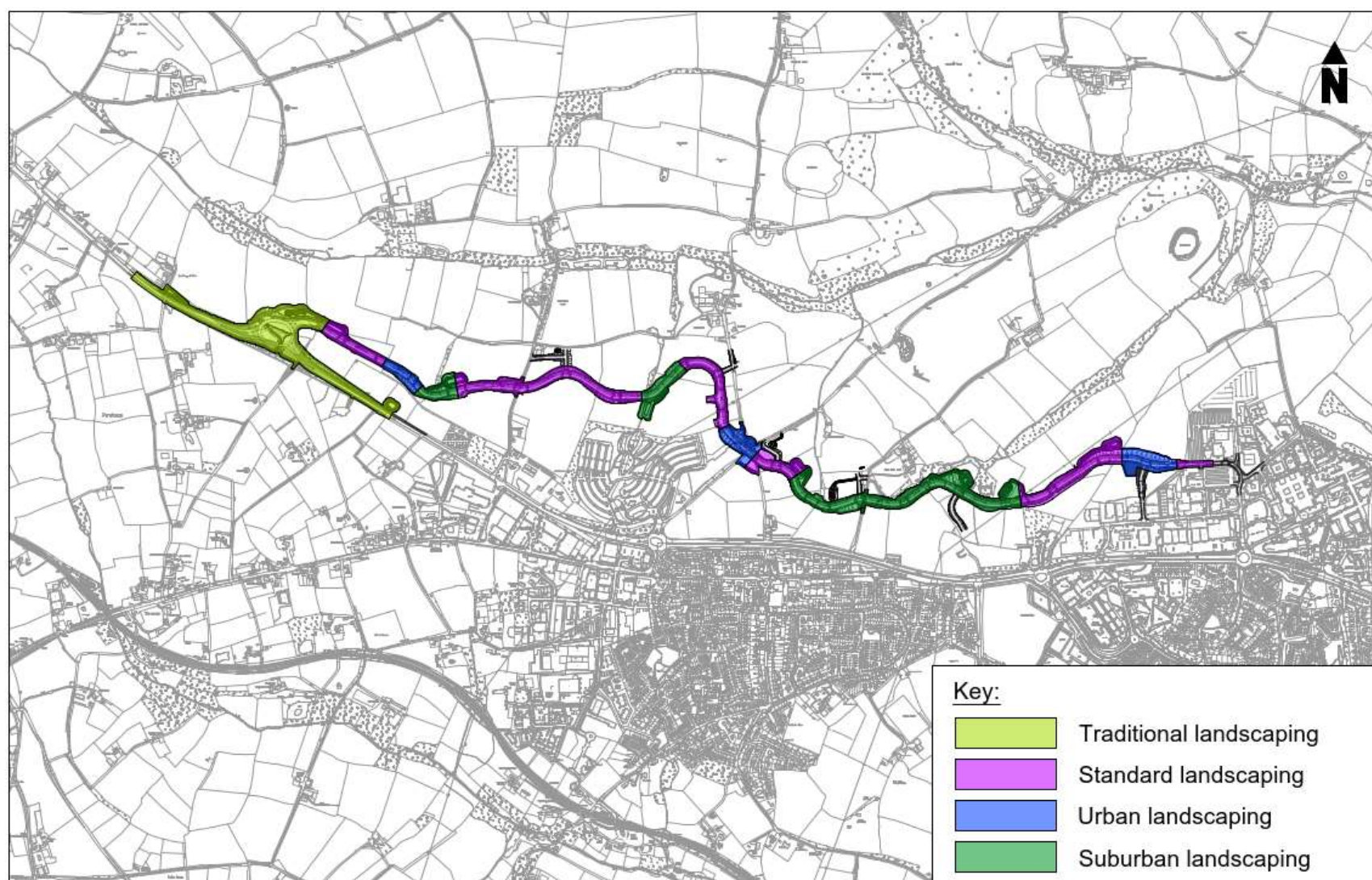
Landscaping and Drainage

- 7.62 The landscape proposals for the NAR have been developed in response to the existing landscape features, the masterplan for the Langarth Garden Village Development and the highways and drainage design for the NAR. The landscape scheme has been prepared as an integrated team of engineers and landscape architects to ensure interfaces between infrastructure and landscape have been considered and resolved wherever possible to enable a high-quality development.
- 7.63 A set of design objectives were proposed to ensure the scheme minimises the impact on the environment and integrates into its setting. The principles that have been taken into account include:
- Create a high-quality landscaping scheme to mitigate for the loss of tree cover and hedgerow (including Cornish hedgerows) associated with the proposed scheme.
 - Introduce a tree lined boulevard along the new road corridor.
 - Provide a varied experience for pedestrian, cycle and road users.
 - Enhance the amenity value of the proposed road corridor and provide planting proposals that are sympathetic to the existing landscape character of the area, whilst reflecting the SuDS design.
 - Minimise the impact on biodiversity, provide areas for habitat creation and improve biodiversity gain through management.
 - Create a 'feel safe' environment for pedestrians, cyclists and road users.

- Take account of future maintenance requirements by careful selection of plant species, with emphasis on native species and achieving good establishment whilst minimising maintenance costs.
- Where possible, retain, protect and enhance existing vegetation that is ecologically or visually important (i.e. mature trees and Cornish hedgerows along the existing roads and any mature woodland belts). The loss of existing features will be offset with replacement planting.
- Ensure tree planting approach does not preclude or restrict future development.
- Where appropriate use plant species that are in keeping with local character, enhance biodiversity and provide seasonal highlights and interest.
- Ensure the proposed planting is resilient to the anticipated effects of climate change.

7.64 To provide a varied user experience, the landscaping along the NAR has been divided into four-character zones, each adopting a distinct approach to the landscaping. These character zones are repeated at various intervals along the road corridor to reflect the design approach to the development within the wider masterplan. Figure 7-14 demonstrates where these character zones are located along the NAR.

Figure 7-14: Character Zones along the NAR



7.65 Reference should also be made to the masterplan DAS, the Design Code and Landscape Parameter Plan which further set out the landscape strategy for creating a comprehensive and connected network of Green Infrastructure as part of the Langarth Garden Village Development masterplan. The NAR will play an important role in this wider landscape strategy by ensuring green space is easily accessible throughout the site.

Character Zone 0 – Traditional

7.66 This character zone is centred on the West Langarth junction and focusses on creating an arrival gateway feature that marks the start of a changing environment. This zone will be defined by its natural landscaping character, in keeping with the local vernacular.

7.67 The junction will accommodate a footway-cycleway and equestrian route that will provide direct access across the junction within a natural setting, comprising a permanent pond with aquatic marginal planting and species-rich grassland. Refer to Figure 7.15.

7.68 Cornish hedgerows and large deciduous native tree planting in random spaced groups will provide a vertical form, providing some refuge from vehicular noise. Semi-ornamented and bulb planting will provide seasonal colour and interest. Remaining highway verges will comprise amenity grassland.

- 7.69 The junction provides a rare opportunity for an artwork that will provide a focal feature and a sense of place, marking the entry to the new development.
- 7.70 Drainage through this character zone comprises swales with aquatic seeding.

Figure 7-15: Typical section through Character Zone 0 (Section B-B from 1665_CSL_GEN_01MZ_DE_CH_0089 General Arrangement Sheet 1 of 6)



Character Zone 1 – Standard Approach

- 7.71 Character Zone 1 will provide the standard approach to the soft landscaping treatment along the NAR, providing a style that incorporates a formal tree boulevard with more natural ground cover.
- 7.72 It is envisaged that the boulevard will be made up of medium-sized deciduous species with a spacing of approximately 10-14m, taking account of the proximity of future building frontages.
- 7.73 The highway drainage swales will be treated with a wet grassland mix with intermittent aquatic plug planting to encourage texture and increase biodiversity. Remaining highway verges will comprise of amenity grassland. Refer to Figure 7-16.

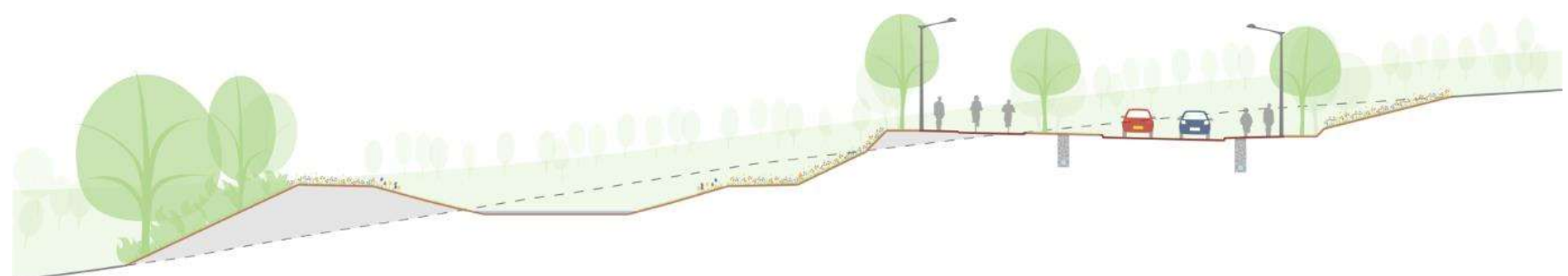
Figure 7-16: Typical section through Character Zone 1 (Section E-E from 1665_CSL_GEN_02MZ_DE_CH_0090 General Arrangement Sheet 2 of 6)



Character Zone 2 – Landscape Connections

- 7.74 Character Zone 2 will provide a formal approach, creating a natural transition into the wider landscape via interconnecting open spaces adjacent to the transport corridor.
- 7.75 The location of these areas, the lack of built development, and the arrangement of the footway, cycleway and road will enable larger sized deciduous and evergreen native species to be planted in a triple row. The trees will be planted at a larger spacings (circa 14-18m) to allow for growth and to provide open views to the wider landscape. Refer to Figure 7-17.

Figure 7-17: Typical section through Character Zone 2 (Section D-D from 1665_CSL_GEN_02MZ_DE_CH_0090 General Arrangement Sheet 2 of 6)

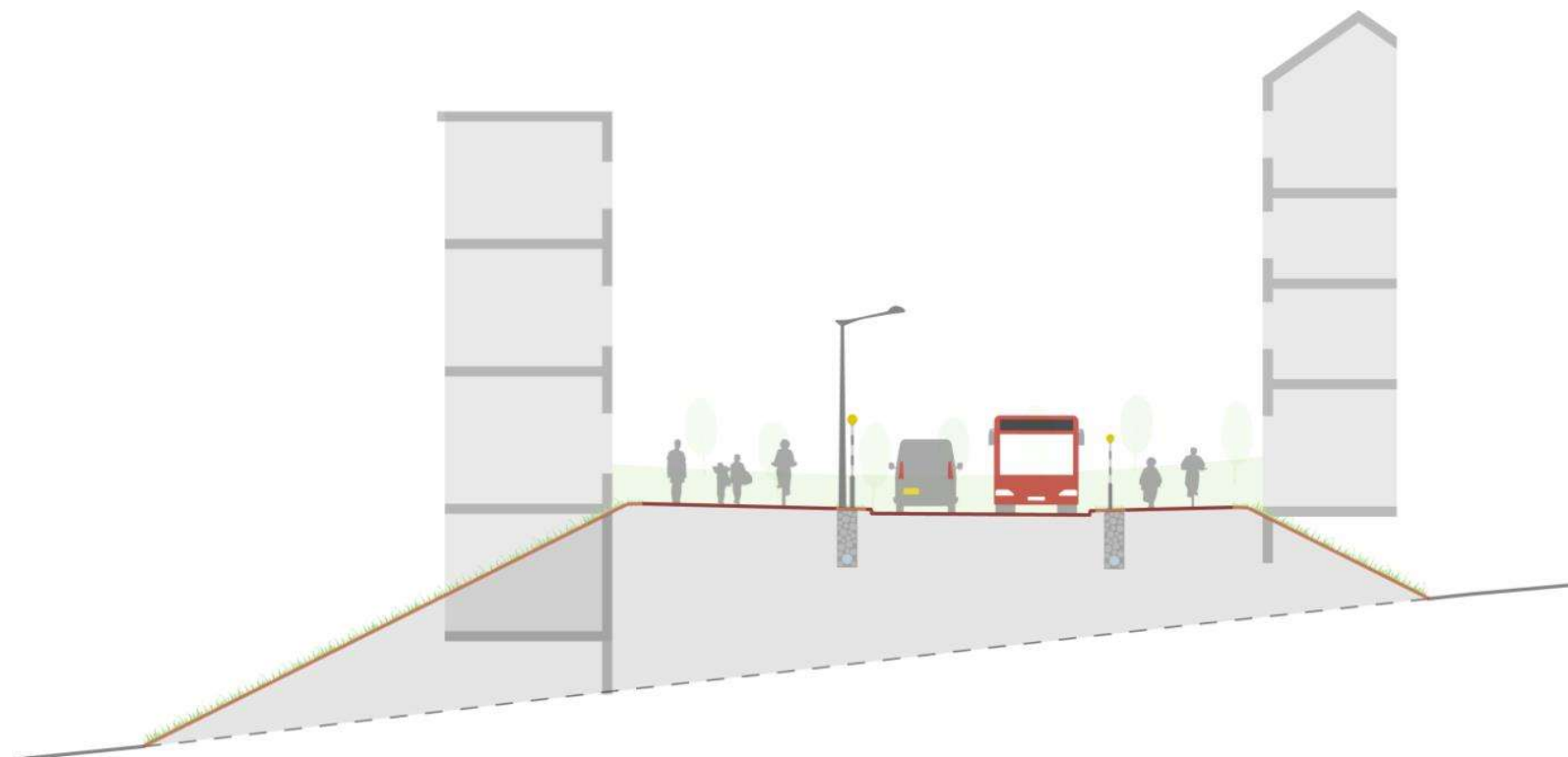


- 7.76 Drainage in this character zone comprises drainage swales and rain gardens. The drainage swales will be treated with a wet grassland mix with intermittent aquatic plug planting, except at crossing points or junctions, where rain garden species will be planted within swales to offer increased interest. Remaining highway verges will comprise amenity grassland.

Character Zone 3 – Urban Village Garden

- 7.77 Character Zone 3 will be located in areas where the masterplan is proposing high quality focal points. In these areas, building frontages are proposed to be located closer to the road corridor, providing less space for tree planting.
- 7.78 To reflect these desires, a line of medium sized deciduous non-native or ornamental trees will be planted within the central verge between the road and cycleway. These trees will be smaller in size with generally a smaller crown, planted at reduced spacings (circa 7-10m). Refer to Figure 7-18.

Figure 7-18: Typical section through Character Zone 3 (Section J-J from 1665_CSL_GEN_06MZ_DE_CH_0095 General Arrangement Sheet 6 of 6)



- 7.79 The highway drainage swales will be planted with rain garden species to provide visual interest and increase biodiversity. Remaining road verges will comprise of amenity grassland or ornamental planting.

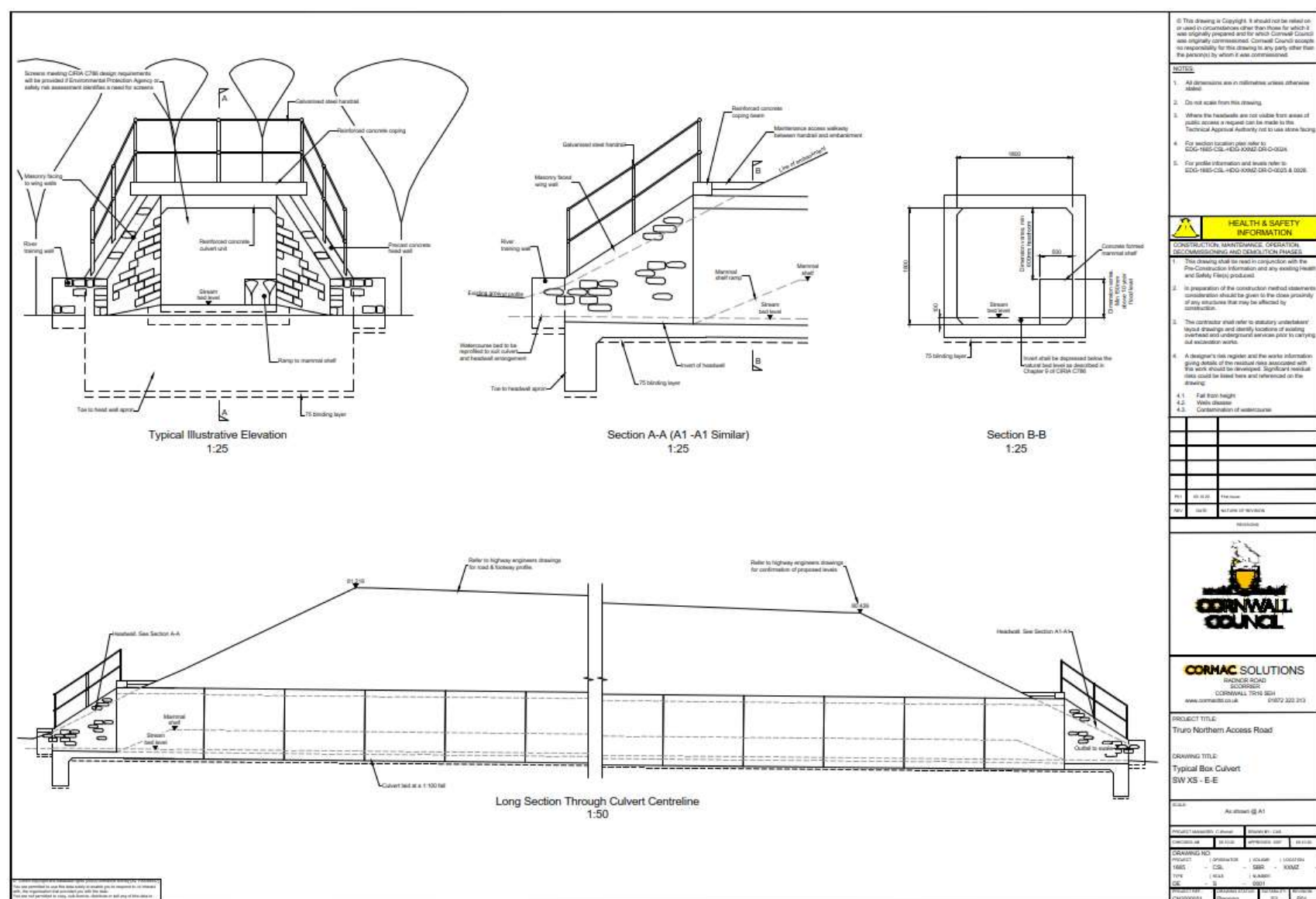
SuDS Basins and Embankments

- 7.80 Permanent infiltration basins will be broken up and softened through the planting of native structure planting and individual groups of trees. Basin banks will be seeded with wet grassland meadow mixes, and species-rich mixes in drier regions.
- 7.81 Embankments and cuttings will follow a similar approach with native structure planting on lower sections, adjacent existing vegetation and on new banks, helping to increase biodiversity and wildlife opportunities. Pockets of semi-ornamental planting may be introduced to sections of structure planting to provide variation and visual interest.
- 7.82 Walking and cycling routes will be set in a stimulating 'green' environment that will encourage active travel. This contributes towards possibilities of increased social activity with improved community cohesion and local attachment. The NAR design promotes an integrated and accessible transport system, with walking, cycling and public transport designed to be the most attractive forms of local transport. This approach has been supported with landscaping and will be more formal close to the NAR (and A390).
- 7.83 The landscape scheme will deliver Biodiversity Net Gain which has been embedded in the masterplan process. Landscaping has been incorporated to facilitate wildlife movement along the route as part of the wider Green Infrastructure network. The principle behind this is to develop retained habitats where possible.
- 7.84 An indicative Planting Strategy has been prepared by TEP for the purpose of accompanying the landscape drawings and can be found at Appendix A.

Drainage

- 7.85 The surface water drainage system for NAR has been designed to be separate from the drainage strategy for the housing development for simplicity of future maintenance responsibilities. A SuDS design approach has been adopted for the NAR which has been incorporated into landscaping. Roads and paths will be drained through a combination of permeable parking bays, swales, filter drains plus kerbs and gullies where necessary. Infiltration ponds have been located along the NAR main alignment.
- 7.86 SuDS will promote easily maintained surface water runoff features and allow for the creation of new wildlife spaces and amenity areas. A variety of treatment methods are proposed to be employed for different areas of runoff to remove hydrocarbons, metals, sediments and other potential water contaminants. The SUDS provide pre-treatment of runoff to supply filtration, bioremediation, detention and vegetative uptake processes. The embedded design detailed in Chapter 10 of the ES has been included to mitigate adverse effects on water quality.
- 7.87 There are two instances where the NAR will cross an existing watercourse. In both locations a box culvert with mammal crossings has been proposed within the design. The crossings are proposed to comprise a 1.8m square box culvert with 0.5m wide mammal ledge and a low flow channel. One has an expected length of 35m and the other of 38m. These have been designed in accordance with best practice, and where required hydraulic modelling has informed the design, to ensure constrictions to flow are prevented (where this would increase flood risk onsite and upstream). The culverts would be subject to a highway asset maintenance programme. Figure 7-19 shows typical design details for one of the box culverts.

Figure 7-19: Drawing reference 1665-CSL-SBR-XXMZ-DE-S-0001-P01 Typical Box Culvert SW XS – E-E



Biodiversity

- 7.88 The NAR would act as a barrier to badgers moving around their territories. There are three setts which would be divided from parts of their territories. Badgers would be forced to cross, and risk being hit by moving vehicles. The NAR would be an urban road, with a 20mph limit, so this would limit the traffic collision risk. The NAR would include a number of badger crossings at appropriate locations. These would be a mix of pipe crossings of a minimum 600mm diameter designed solely for badgers, but also stream culverts that are large enough to include a mammal ledge along one side that would be above flood level (as referenced above).

Lighting and Signage

Signage Strategy

- 7.89 A Signage Strategy has been developed for the NAR and A390 to inform a future detailed signage design. Consideration has been given to those destinations currently signed, as well as how these and new destinations will be signed post development. The strategy culminates with a set of general arrangement plans that set out indicative locations for all new signs required.
- 7.90 A “do minimum” approach has been adopted when developing the Signage Strategy to reduce any unnecessary street furniture and clutter. This approach aligns with the Langarth Garden Village masterplan, placing greater emphasis on environmental and aesthetic considerations.
- 7.91 Each type of sign has been cross-referenced against others to determine whether they can be mounted in the same location to minimise environmental and visual impact and this will be continued during detailed design.
- 7.92 Signs will be mounted on lamp columns where possible. This relies on the lamp columns being in a suitable location and the signs required being less than 0.6m² surface area, the maximum sign loading for these 5/6m high lighting columns. Small signs on lighting columns are not considered to significantly detract from their contemporary aesthetic.
- 7.93 Consideration has been given to combining wayfinding and traffic directional signs, but this has been avoided to maintain a clear view for all road users.
- 7.94 The minimum possible height for each sign will be used to minimise the visual impact on the Langarth Garden Village streetscape.
- 7.95 All traffic signs mounted over footways and cycleways will be designed and mounted in accordance with Traffic Signs Manual. This height also makes allowance for any cyclists using the footway regardless of the restrictions.
- 7.96 The cycle route will be signed at both ends with 450mm signs installed to indicate the transition points between the shared use areas and segregated paths. All other signage will be smaller and less obtrusive. The use of wooden bollards with small 150mm roundels has been proposed to maintain the aesthetic of the garden village while providing sufficient signage to ensure safety of pedestrians and cyclists. An example of such signage is provided in Figure 7-20.

Figure 7-20: Example of bollard with roundel



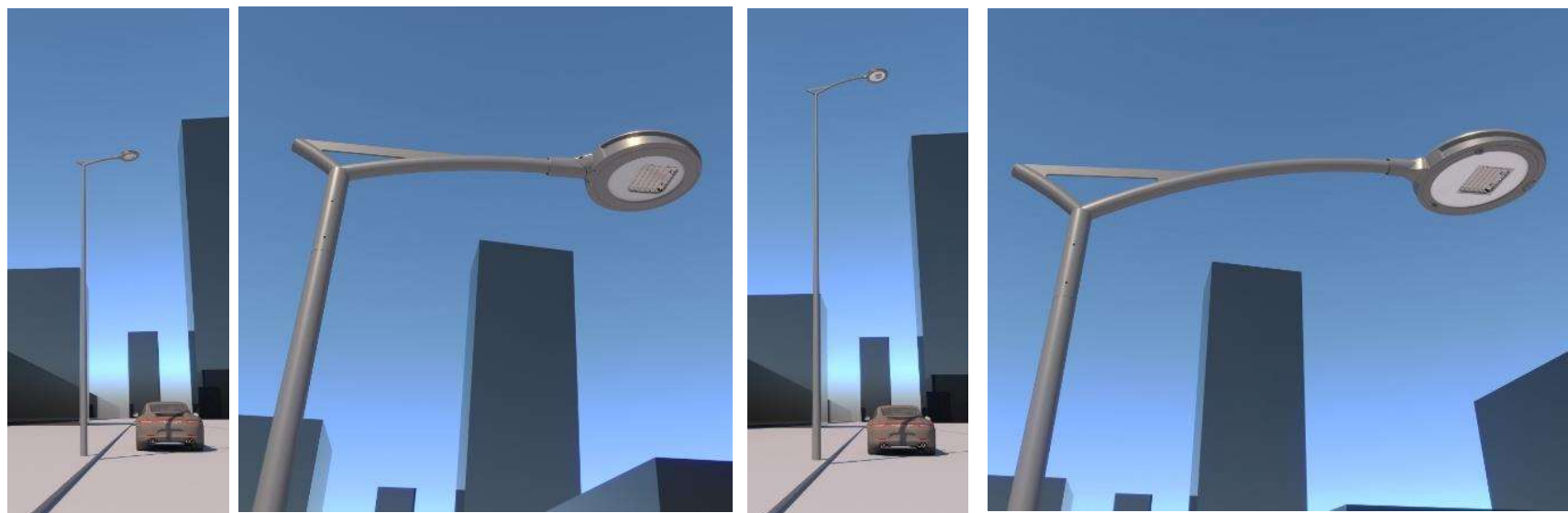
- 7.97 To encourage modal shift over short distances, journey times will be shown on cycle route signs as opposed to distance in line with The Traffic Signs Manual Chapter 7. Signage destinations include the city centre, railway station, Threemilestone, Richard Lander School, Hospital, Shortlanesend and Chacewater.
- 7.98 Wayfinding signs are included where new bridleways are planned to the north and south of the NAR.

- 7.99 The Signage Strategy for the NAR has been developed to direct all Royal Cornwall Hospital traffic via the NAR from the A390 at the West Langarth junction and vice versa.
- 7.100 Access to the Treliske industrial and trading estate is to be provided from both the A390 and the NAR
- 7.101 Stadium deliveries will be signed from the NAR at the West Langarth junction, Richard Lander junction and Stadium for Cornwall junction as patches on planned Directional and Advanced Directional signs. Stadium spectators will use the park and ride facilities. All other destinations are signed appropriately with the existing provision. The existing tourist signs are generally for situations that would not usually warrant this type of sign, therefore, it is not proposed to sign these destinations from NAR.

Lighting Strategy

- 7.102 Given the width of the proposed road, lighting columns will be required on both sides of the NAR carriageway and situated at equal distances along both sides of the road. Street lighting has been considered as an integral part of the street design and a modern contemporary approach has been adopted for the lighting columns as demonstrated at Figure 7-21.
- 7.103 Lighting column heights have been kept as short as possible to signify the route is an environment where traffic is expected to move slowly and carefully. These will be 8m tall columns to the West Langarth junction (including its approach roads) and 6m tall columns covering the majority of the route. The lighting design ensures that light levels are, as far as possible, kept within limitations set to avoid obtrusive light and light spill.

Figure 7-21: Diana Lanterns proposed for use along the NAR main alignment



- 7.104 The street lighting design would follow the guidance for low level lighting suitable for bats and the lux levels quickly fall to 0.5lux away from the road.

Offsite Mitigation Measures

- 7.105 The following improvements along the A390 will take place as part of the proposed development:
- Additional NMU crossing points at strategic locations along the A390 to enable connectivity between the existing communities to the south and the Langarth Garden Village to the north. This will include controlled crossing facilities on the A390 at Threemilestone (incorporating potential bus priority measures) to provide walking and cycle links to existing community and local facilities.
 - NMU connections with adjacent associated infrastructure schemes including the Saints Trails and physical improvements to the A390.
 - Continuous shared footway/cycleway on the north side of the A390, between Threemilestone and Maiden Green junctions.
 - Soft landscaping provision along the road transforming the current A390 road feel into a planted boulevard urban street.
 - On-road cycle route enhancement between Penventinnie Lane (eastern end of the NAR) and Dalvenie Roundabout via the A390, incorporating uphill cycle lane on A390 Highertown and eastbound bus gate at Penwerris Road.

- Wider contributions to walking and cycling proposals being delivered by Cornwall Council. This could include an off-road cycle route from Penventinnie Lane (eastern end of the NAR) to St George's Road, Truro or other walking and cycling improvements in central Truro. This would improve opportunities for future users of the development to use Active Travel.
- Leisure walking and cycling route linking the proposed development and the existing Quiet Lane network to the north of the site, together with permanent restrictions on the Quiet Lane network to reduce 'rat-running' on inappropriate routes and provide additional, safe, leisure routes for walking, cycling and horse riding adjacent to the proposed development.
- Contribution towards provision of e-bike hire system, bikes and docking facilities at off-site locations such as Threemilestone Village Centre, Truro Railway Station and the City Centre (Lemon Quay and Victoria Square). It is anticipated that this would be part of a Mobility Hub Strategy for the wider area and could be delivered through the Truro Transport Strategy Refresh.
- Contribution towards A390 enhancements to include technological changes to traffic signal equipment to provide improved 'virtual' bus priority.
- Contribution towards public realm and transport improvements at Threemilestone Village Centre.
- Use of VIP stadium car park for 'Park & Stride' to manage associated school drop off and pick up.

7.106 The level of provision of off-site measures and their delivery will be subject to further discussions and agreement with the local highway authority through the planning application process. Measures could either be directly delivered by the proposed development or be subject to a financial contribution. Many of these measures are identified as potential interventions within the emerging Truro Transport Strategy Refresh and could be delivered by Cornwall Council, with developer contributions sought as appropriate.

8. Movement

Introduction

- 8.1 The NAR will provide an additional route for road users wishing to access key destinations on the west side of Truro, including the Langarth Garden Village Development, the Stadium for Cornwall, the Royal Cornwall Hospital, Treliske industrial and trading estate. The aim is for the NAR to attract one third of vehicular transport from the A390 into a low speed environment devoid of traffic signal junctions.
- 8.2 The NAR will assist in improved management of the highway network with the intention of improving journey times, reliability and resilience of the highway network. As part of the wider strategic highway improvements being delivered by Cornwall Council (and Highways England) the NAR and associated links through the Site and masterplan area will alleviate some of the existing pressure on the network.
- 8.3 The proposed development has been designed to prioritise the needs of NMU including cyclists and pedestrians, and as a result the NAR provides an extensive network of connections into existing footpaths, cycle lanes and public rights of way. This network of NMU routes will link directly into the Langarth Garden Village Development providing routes towards Truro city centre. They also connect with other existing and proposed NMU routes providing links further afield and to neighbouring development.

Transport Links

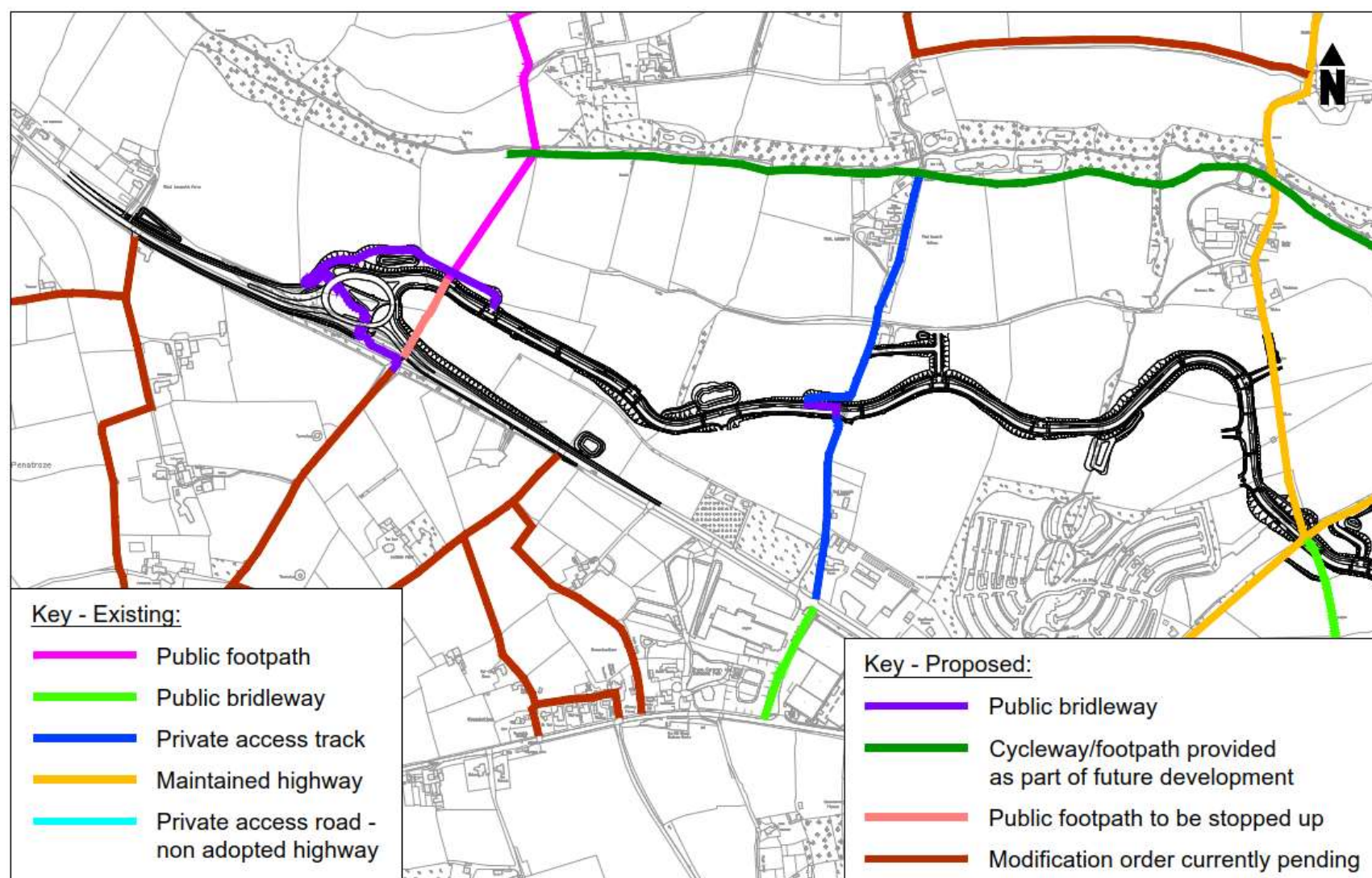
- 8.4 The following transport links will be provided throughout the Scheme:
 - West Langarth junction will accept traffic flows from the A390, causing vehicles to slow down in order to access the NAR or continue to the A390 to Truro. The choice of routes will reduce pressure on the A390 and aim to reduce conflict and safety concerns associated with rat running on Quiet Lanes, to be benefit of local residents and road users.
 - The NAR will become a main bus route in and out of Truro to complement public transport provision already running along the A390. The horizontal alignment has been designed to accommodate bus movements. Bus stops will be provided at key locations along the NAR to serve the Langarth Garden Village Development.
 - The Interim Link Road that connects the A390 to the NAR will facilitate public transport access in the form of a bus gate.
 - Direct access from the NAR to the Stadium for Cornwall and Park & Ride extension. Increased use of the Park & Ride is facilitated by reducing pressure on the existing exit to Threemilestone roundabout.
 - In conjunction with outline planning permission for a new petrol filling station at the Richard Lander Junction off the A390, a link road will connect to the NAR in order to provide another vehicular link to the A390.
 - An access lane into Treliske industrial and trading estate at the eastern end of the NAR will be provided in the form of Oak Lane Link. This also provides access to a new node of commercial development as a key destination within the Langarth Garden Village Development.
 - The NAR and associated development will establish the backbone for a network of cycling and walking routes through the hybrid planning application site. This extends further afield connecting into off-site routes and destinations, providing existing local and future residents with greater access to open space, other amenity facilities, and employment. A landscape led development intends to encourage walking and cycling as primary modes of transport. In turn this will promote a healthy lifestyle and overall resident satisfaction.
 - Mobility hubs along the route will facilitate access to and between transport modes, including human-powered and shared modes, as well as providing extra transport related and digital services. At these locations there will be the co-location of public and shared mobility modes; design of space to reduce private car space and enhance the surrounding public realm; and a pillar or sign to identify the space as a mobility hub which is part of a wider network and ideally provides digital travel information.

- Provision of safer at-grade NMU crossing points along the A390 removing the feeling of segregation between the two sides of this road to ensure access is possible for people of all ages and ability.
- NMU links will be made to the Saints Trail, Truro city centre and the A390 corridor. This will encourage longer distance cycle journeys between Truro and the surrounding areas.
- NMU links will see improvements for equestrians through upgrading of existing bridleways and provision of new bridleways.
- NMU connections through the WHS will improve access and allow people to appreciate the WHS which is an objective of the WHS Management Plan. Promoting equality of opportunity for new residents of the area to discover, access and enjoy the WHS.

Inclusive Access

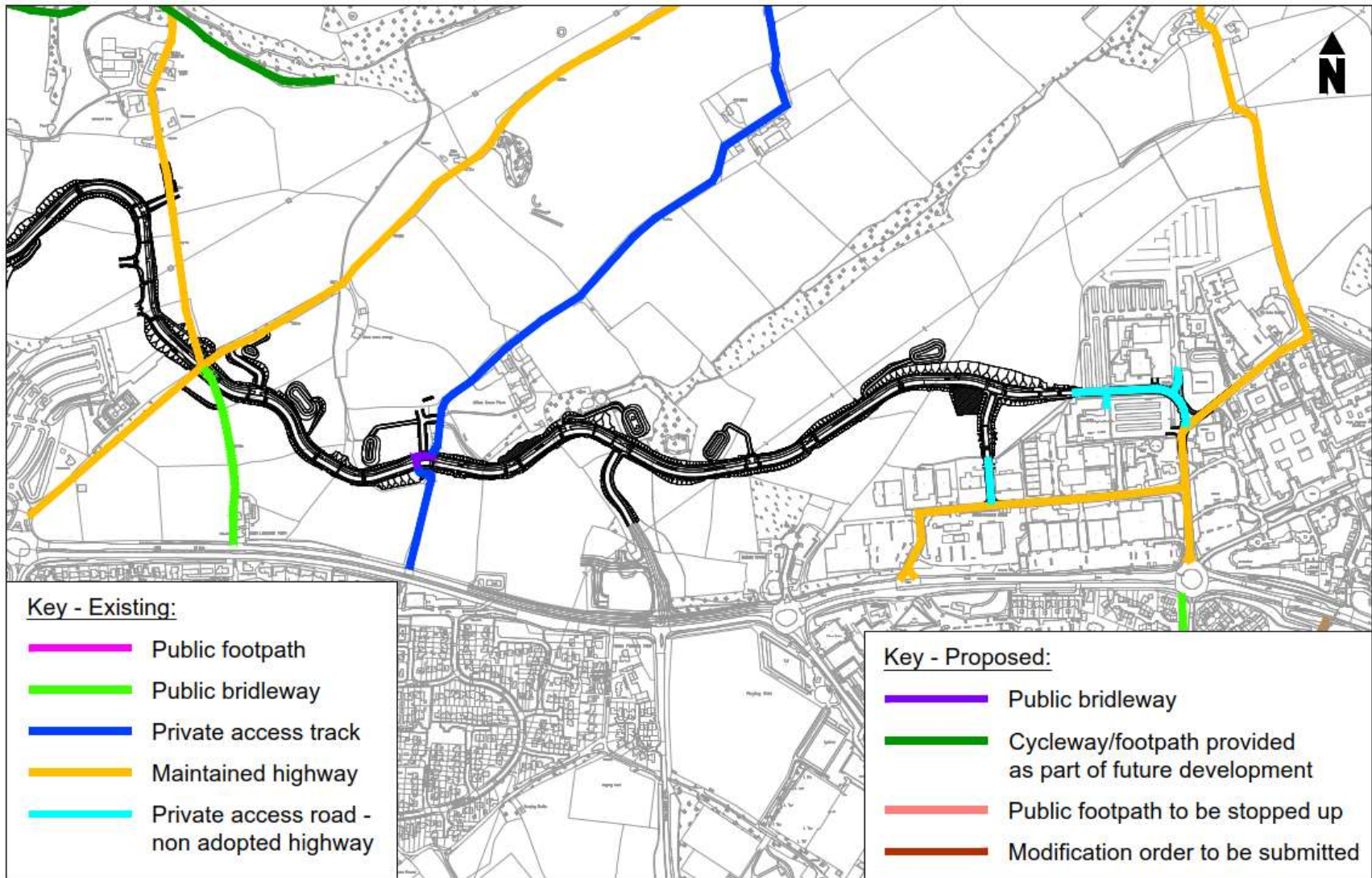
8.5 Extensive provision has been made for Non-Motorised Users (NMU) including pedestrians, cyclists and equestrians along the NAR with multiple access routes to various key locations to ensure access is possible for people of all ages and ability.

Figure 8-1: Alterations to public and private highway extents at west end of NAR



- 8.6 The West Langarth junction caters for all NMU and facilitates access from the existing A390, public rights of way and Saints Trail to the NAR and all development within the Langarth Garden Village. The NMU route through the centre of the roundabout allows users to access both northern and southern NMU routes along the NAR and the A390 to the east and west aided by Toucan signal crossings. This has been designed for inclusive access meaning it can be used by people of all ages and ability. The current PROW number 309/21/1 running from the A390 north past Little Regarded Farm crosses the NAR at the proposed parallel crossing where it will be stopped up and diverted down the new cycle track as an alternative route.
- 8.7 The provision of inclusive access throughout the proposed development will deliver well connected green spaces which encourage a healthy and active lifestyle.
- 8.8 Alterations to public and private highway extents and NMU routes have been demonstrated at Figures 8-1 and 8-2. Reference should also be made to the Movement and Access Parameter Plan (drawing number LAN_02.1-AHR-MP-ZZ-DR-A-93-012) which demonstrates how this integrates into the wider masterplan.

Figure 8-2: Alterations to public and private highway extents at east end of NAR



9. Conclusion

- 9.1 This DAS demonstrates that the design of the NAR complies with the aims and objectives set out by Cornwall Council (as the Applicant). The NAR will provide a new link between the A390 and key destinations within the new Langarth Garden Village Development and Truro city centre. In conjunction with other key developments as set out in this DAS, including the Saints Trail, improvements along the A390 and A30 Chiverton Cross dual carriageway, the NAR will facilitate key growth to Cornwall's only city while improving access for cyclists, pedestrians and NMUs.
- 9.2 Consideration has been given to the landscape and historical factors within the context of the Site.
- 9.3 Stakeholder engagement throughout the design process has been an integral part of the design development. This DAS documents scenarios where the design has evolved as a direct result of engaging with stakeholders.
- 9.4 The main alignment is considered the preferred option for the NAR. An extensive and iterative assessment process was undertaken to establish the preferred option as documented in this DAS.
- 9.5 Key outcomes of the NAR highway design will include the encouragement of sustainable transport links to local jobs, education and services. This will be achieved through developing a sense of place with high quality design including footways, cycle ways, bus provision and improved access to the Langarth Park & Ride site.
- 9.6 It will provide environmental enhancement through planting and sustainable urban drainage systems (SuDS) and will also be expected to accommodate 1,700 two-way vehicles in the PM peak hour following the delivery of 3,550 residential units, 200 extra care units and 50 units for health key workers and student accommodation by 3038.
- 9.7 The NAR and associated highway development will combine to relieve traffic congestion and will not have a significant effect on local air quality within the Air Quality Management Area.

Appendix A Landscape Planting Schedule, prepared by TEP

Proposals relating to the planting strategy across the site are described in the following paragraphs and are illustrated on drawings D8111.002 - 013.

Boulevard Planting

The road corridor has been broken up into different zones to reflect the aspirations of the wider masterplan and to create a varied user experience.

Due to the change in character and the landscape proposed within each zone, the choice of tree species needs to be carefully considered, to ensure that they are appropriate for the road corridor setting, planting within an exposed environment, and suitable for planting within swales and on sides of cuttings and embankments.

In addition, the future masterplan aspirations and proximity, and type, of development needs to be considered, taking account of the National House Building Council Standards on proximity of trees where required to reduce the potential impacts on possible building proximity and subsequent foundation design.

In response to these constraints the table below provides suggestions of the types of species and the suggested avenue spacing of species which could be provided in each character zone.

| Latin Name | Common Name | Character Zone | Avenue Spacing |
|-----------------------------------|----------------------------|----------------|-----------------|
| Alnus glutinosa | Common Alder | 0 | N/A |
| Betula pendula | Silver Birch | | |
| Fagus sylvatica* | Common Beech | | |
| Prunus avium* | Wild Cherry | | |
| Quercus robur* | Common Oak | | |
| Acer campestre 'Streetwise' | Field Maple (cultivar) | 1 | 10m (10m – 14m) |
| Acer platanoides 'Emerald Queen' | Norway Maple (cultivar) | | |
| Acer pseudoplatanus 'Negenia' | Sycamore (cultivar) | | |
| Carpinus betulus 'Frans Fontaine' | Common Hornbeam (cultivar) | | |
| Pyrus calleryana 'Chanticleer' | Ornamental Pear (cultivar) | | |
| Quercus robur 'Fastigiata' | Cypress Oak (cultivar) | 2 | 15m (14m – 18m) |
| Acer pseudoplatantus | Sycamore | | |
| Fagus sylvatica | Common Beech | | |
| Pinus sylvestris | Scots Pine | | |
| Prunus avium | Wild cherry | | |
| Quercus petraea* | Sessile Oak | | |
| Tilia cordata* | Small-leaved Lime | 3 | |
| Acer campestre 'Streetwise' | Field Maple (cultivar) | | |

| | | | |
|--|------------------------------|--|---------------|
| Carpinus betulus ‘Frans Fontaine | Common Hornbeam (cultivar) | | 7m (7m – 10m) |
| Pyrus calleryana ‘Chanticleer’ | Callery Pear (cultivar) | | |
| Quercus robur ‘Fastigiata’ / ‘fastigiata Koster’ | Cypress Oak (cultivar) | | |
| Tilia cordata ‘Greenspire’ | Small-leaved Lime (cultivar) | | |

The planting across the zones will comprise of a combination of native and semiornamental species that will offer diversity to the overall scheme and accentuate certain areas, providing seasonal visual interest.

It should be noted that the drawings highlight which boulevard trees will be delivered as part of the NAR scheme and those which will be delivered as part of the adjacent development. This is to ensure that there is a clear vision for the NAR landscaping which can be taken into account when designing the development proposals, but that will not restrict construction.

It is proposed that boulevard trees will be planted as extra heavy standards (minimum 16-18cm girth) which will strike a balance between a tree that is suitably young to respond to the varied site and ground conditions, whilst sufficiently large to offer robustness from potential vandalism.

The trees should be underground guyed and supplied with appropriate irrigation pipes. Stratacells, or similar, could be used to increase the tree rooting capabilities for tree planting within hard standing locations or where planting beds are less than 3m wide.

A linear root barrier should be installed along service corridors where deemed necessary.

General Tree Planting

New trees will be planted on embankments and cuttings (and areas of public open space within the masterplan), to provide an advanced green setting for future development and to help filter views of the new road corridor. These will mainly comprise native species, or cultivars of natives, that will offer diversity to the scheme and accentuate certain areas providing further visual interest. Tree species will reflect the existing species on site and those within the local area.

The table below provides suggested species that could be planted.

| Latin Name | Common Name |
|----------------------|--|
| Alnus glutinosa | Common Alder |
| Betula pendula | Silver Birch |
| Fagus sylvatica | Common Beech |
| Prunus avium | Wild Cherry |
| Quercus robur | Common Oak |
| Acer pseudoplatantus | Sycamore |
| Fagus sylvatica | Common Beech |
| Pinus sylvestris | Scots Pine |
| Prunus avium | Wild cherry |
| Quercus petraea | Sessile Oak |
| Tilia cordata | Small-leaved Lime |
| Fraxinus excelsior | Ash (if available at time of planting) |

| | |
|---|----------------|
| | |
| Ulmus ‘New Horizon’ | Elm (cultivar) |
| Tree species list to be supplemented with native and cultivar species suitable for the location and site conditions, from other proposed palettes | |

Some of the proposed trees will be planted within structure planting, hedgerows, ornamental shrub beds to provide an immediate vertical ‘green’ element, and to aid in filtering the visual appearance of the embankments, cuttings and attenuation basins, whilst minimising maintenance operations. The exact species to be used in each area will be determined by the location and proximity to roads and future buildings.

It is proposed that trees will be planted as either heavy standard trees (minimum 12 - 14cm girth) or extra heavy standard (minimum 14-16cm girth) with short double timber stakes. Extra heavy standard trees (minimum 16-18cm girth) should be specified in areas adjacent to footpaths and other accessible areas to reduce the risk of vandalism.

Structure Planting

‘Structure planting’ refers to areas of planting used for general space definition and screening, or separation of areas of different function or particular emphasis. Structure planting is proposed to cuttings and embankments to break up slopes, extend existing vegetation belts and connected wildlife corridors.

Structure planting will consist of either woodland planting and/or woodland edge planting species, dependent on the location and size of planting belts.

The table below provides the suggested species that could be included within the woodland planting mix.

| Species (Latin) | Species (Common) | Climax Woodland | Light Demanding |
|---|------------------|-----------------|-----------------|
| Quercus robur | Pedunculate oak | * | |
| Quercus petraea | Sessile oak | * | |
| Betula pendula | Silver birch | | * |
| Betula pubescens | Downy birch | * | |
| Fagus sylvatica | Beech | * | |
| Acer pseudoplatanus | Sycamore | * | |
| Corylus avellana | Hazel | | * |
| Crataegus monogyna | Hawthorn | | * |
| Ilex aquifolium | Holly | * | |
| Prunus spinosa | Blackthorn | | * |
| Sorbus aucuparia | Rowan | | * |
| Rosa canina | Dog rose | | * |
| Viburnum opulus | Guelder rose | | * |
| Ulex europaeus | European gorse | * | |
| Acer campestre | Field maple | | * |
| For addition/substitution to the base mix to provide variation/interest across the site | | | |

| | | | |
|--------------------|---|---|---|
| Malus sylvestris | Crab apple | | * |
| Carpinus betulus | Hornbeam | * | |
| Fraxinus excelsior | Ash (<i>if available at time of planting</i>) | * | |
| Salix cinerea | Grey Willow | | * |
| Pinus sylvestris | Scots pine | * | |
| Prunus avium | Wild cherry | | * |
| Populus tremula | Aspen | * | |

It is envisaged that woodland planting belts would be planted at 2m to 2.5m centres and comprise of circa 80-85% transplants/whips (60-80cm high) and 15-20% feathered trees (175-200cm high).

Woodland edge planting will be provided as standalone beds or to the edge of new woodland planting belts, depending on the location and space available. The table below outlines potential species that could be specified in the woodland edge planting mix.

| Species (Latin) | Species (Common) |
|---|------------------|
| Crataegus monogyna | Hawthorn |
| Corylus avellana | Hazel |
| Prunus spinosa | Blackthorn |
| Ilex aquifolium | Holly |
| Cornus sanguinea | Dogwood |
| Rosa canina | Dog rose |
| Viburnum opulus | Guelder rose |
| Ulex europaeus | European gorse |
| <i>For addition/substitution to the base mix to provide variation/ interest across the site</i> | |
| Frangula alnus | Alder buckthorn |
| Viburnum lantana | Wayfaring tree |
| Rosa arvensis | Field rose |
| Sambucus nigra | Elder |
| Cytisus scoparius | Broom |

Woodland edge beds would be planted at 1m to 1.5m centres and comprise transplants/whips (60-80cm high) and containers (2-3 litre) depending on the species.

In order to provide variation to the structure planting, and to provide seasonal colour and focal interest, pockets of semi-ornamental planting could be introduced to structure planting belts. The types of species that could be used are outlined in the table below.

| Species (Latin) | Species (Common) |
|-----------------|------------------|
|-----------------|------------------|

| | |
|---------------------------------|--------------------|
| Cornus sanguinea | Dogwood |
| Cornus alba ‘Sibirica’ | Siberian Dogwood |
| Corylus avellana | Hazel |
| Crataegus monogyna | Hawthorn |
| Ulex europaeus | European gorse |
| Cytisus scoparius | Broom |
| Sambucus nigra | Elder |
| Photinia x fraserii ‘Red Robin’ | Photinia |
| Elaeagnus x ebbingei | Elaeagnus |
| Escallonia ‘Donard Seedling’ | Escallonia |
| Ligustrum vulgare | Wild privet |
| Vinca major | Greater periwinkle |
| Pachysandra terminalis | Japanese spurge |
| Hedera helix | Ivy |

All structure planting shall be provided with appropriate rabbit protection and either bark mulch or mulch mats to aid grass suppression.

Hedgerow Planting

New native hedgerows will be planted within the wider development and within Cornish hedgerows proposed within the road corridor scheme. The use of native species, predominantly Hawthorn (circa 70% of mix), will help to maintain integrity with the existing landscape structure whilst further increasing wildlife habitat and creating a physical barrier to the neighbouring properties.

The table below outlines the potential species mix.

| Species (Latin) | Species (Common) |
|-----------------------|------------------|
| <i>Hedgerow</i> | |
| Crataegus monogyna | Hawthorn |
| Corylus avellana | Hazel |
| Prunus spinosa | Blackthorn |
| Ilex aquifolium | Holly |
| Fagus sylvatica | Beech |
| Rosa canina | Dog rose |
| Viburnum opulus | Guelder rose |
| <i>Hedgerow trees</i> | |
| Quercus robur | Pedunculate oak |
| Quercus petraea | Sessile oak |

| | |
|---------------------|--|
| Fagus sylvatica | Beech |
| Acer pseudoplatanus | Sycamore |
| Fraxinus excelsior | Ash (if available for use at time of planting) |
| Betula pubescens | Downy birch |

Hedgerow species will be planted as transplants/whips (60-80cm high) or containers (2-3L) in single species groups of 5-30nr, at 5/lin m on a staggered row. Hedgerow trees should be either heavy standard trees (minimum 12-14cm girth) or extra heavy standard (minimum 14-16cm girth) with short double timber stakes.

Appropriate rabbit protection will be provided for all planting, and mulch mats, or bark mulch, will be placed around each plant to minimise competition with grasses.

Rain Garden Planting

Within Character Zone 3, the SuDS channels will be planted with rain garden species comprising specimen planting of moisture tolerant shrubs, herbaceous species and grasses to provide all year round colour.

The rain garden planting palette will include a mixture of nectar-rich shrubs and perennial plants. This could include species such as:

- Astilbe arendsii 'Snowdrift' (Snowdrift astilbe)
- Ajuga reptans (Common bugle);
- Bergenia 'Silberlicht' (Elephant's ears);
- Carex pendula (Large sedge);
- Campanula glomerata (Clustered bellflower);
- Cornus sanguinea 'Midwinter Fire' (dogwood)
- Hosta 'Halcyon' (Plantain lily);
- Iris pseudocorus (Yellow flag);
- Iris sibirica 'Snow Queen' (Siberian flag);
- Juncus effuses 'Spiralis' (Corkscrew rush);
- Miscanthus sinensis 'Ferner Osten' (Eulalia grass, Japanese silver grass);
- Primular vialii (Primrose).

The final choice of species will need to be determined by the soils, frequency and level of water inundation, and the plant's resistance to a highway environment.

Ornamental Planting

Ornamental planting will feature in the overall landscape scheme to provide appropriate 'highlights' to Character Zones 2 and 3. The chosen deciduous and evergreen shrubs, ornamental grasses and herbaceous plants will provide a variety of form, colour and texture.

Consideration will be given to the types of species selected to ensure plants are suitably robust and appropriate to the location and demands of a roadside environment. Planting will include a range of flowering plants and shrubs to create year round interest and an abundance of colour and texture to provide contrast between character areas.

To ensure good natural surveillance and clear visibility lines, the chosen planting will comprise low growing ornamental species.

Bark mulch should be applied to all planted areas for reasons of maintaining a tidy appearance, to suppress weeds, retain moisture in the soil and minimise the need for maintenance by use of chemicals.

Grassland Areas

Native species-rich meadow grasses will be sown on embankments and cuttings in areas adjacent to future open spaces with a view to less frequent cutting to encourage wildlife.

Successful wildflower establishment can be impacted by the ability of the wildflower species to germinate and establish. This can be affected by a high nutrient value, and competitive and invasive species within the seed bank. Given the need for early vegetation establishment to steep gradients, it is likely that a covering of topsoil will create soil fertility sufficiently high that more competitive grasses within the species-rich grassland will suppress many of the slower growing, less competitive species.

In this scenario, a seed mix (80% grass: 20% wildflower) designed for loamy soils could be used to maximise the best opportunity for wildflower establishment. However, should the wildflower fail to establish in the long-term, the grass species will produce a sward that will provide suitable groundcover and protect the soils from erosion.

On the banks and bases of attenuation basins and swales, a wet grassland seed will be sown to provide a naturalised appearance that will flourish on the wet banks and increase the biodiversity of these areas.

Where future development is proposed adjacent to the NAR, cuttings and embankments will be sown with a low maintenance grass seed to minimise destruction to wildlife habitats.

Native bulb species will be naturalised in grass areas at West Langarth junction in order to provide seasonal colour and further increase the diversity of the scheme.

Along the edges of the highway and footways, and in the remaining soft landscaped areas, amenity grass will be established and cut on a regular basis.

