



## 3.2 GREEN INFRASTRUCTURE STRATEGY

# **A29 Green Infrastructure Strategy**

## Version 1

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**1.0**

Introduction



# 1.0 Introduction

## Introduction

This Green Infrastructure Strategy (the ‘Strategy’) has been prepared on behalf of West Sussex County Council (WSCC). The structure of this Strategy is as follows:

- Introduction.
- Planning and policy context.
- Baseline green infrastructure assets and opportunities:
  - » Baseline context.
  - » Existing assets and opportunities.
- Green Infrastructure Strategy.

The Strategy identifies the proposed realignment of the A29 (herein referred to as the Site) in its current Green Infrastructure (GI) context, opportunities for enhancement and outlines a proposed strategy for implementation of an enhanced GI-led corridor for Phase 1. It is acknowledged that this Strategy would also be applicable to Phase 2.

## Project Context

The proposed realignment of the A29 includes a 30 mph, 1.3 km single carriageway with a 3 m wide cycleway and footway, 2.5 m wide central islands, four uncontrolled crossings, three roundabouts, landscaping, potential noise barriers and other associated works. These works collectively are herein referred to as the Proposed Scheme, with the study area an approximate 1 km corridor around the Proposed Scheme.

The Proposed Scheme will be carried out in two phases. Phase 1 starts just to the south of Burnham Road, but sits largely to the north of Barnham Road connecting up to the far east of Eastergate Lane. Phase 2 will continue from just south of Barnham Road southwards, crossing the railway line and joining Lidsey Road just north of the village of Lidsey (see Figure 1 Location Plan).

The Proposed Scheme will cut through existing countryside between the settlements of Westergate, Eastergate and Barnham. The countryside forms a strategic area of open space and acts as a ‘strategic gap’ to define and separate the adjacent settlements and maintain their distinctiveness.

## Purpose of The Green Infrastructure Strategy

The purpose of this Strategy is to:

- Describe in outline the baseline GI of the Site and surrounding area, particularly in relation to landscape, biodiversity and arboricultural assets.
- Describe measures to enhance the value of such features in accordance with relevant national and local planning policies and supporting GI strategies.
- Outline the proposed GI approach to Phase 1 of the A29 corridor.

This Strategy is accompanied by GI baseline and strategy figures as well as illustrative cross sections.

This Strategy aims to complement existing published GI strategies, particularly at a regional and local level. It therefore concentrates on an analysis of existing GI within the Site and immediate surroundings to assess ways in which the Proposed Scheme can link with, or better link to, nearby assets, and create a multi-functional asset within the landscape.

It then outlines the vision, overarching objectives, functions and design opportunities to be fulfilled through the detailed design of the Proposed Scheme.

## What is Green Infrastructure?

The National Planning Policy Framework (NPPF)<sup>1</sup> defines GI as, ‘a network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.’

The Landscape Institute defines GI more specifically in their ‘Green Infrastructure: an integrated approach to land use’ report<sup>2</sup>, which identifies blue infrastructure (i.e. water) as part of the GI network: ‘the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect villages, towns and cities. Individually, these elements are GI assets, and the roles that these assets play are GI functions. When appropriately planned, designed and managed, the assets

and functions have the potential to deliver a wide range of benefits – from providing sustainable transport links to mitigating and adapting the effects of climate change’.

GI assets include publicly accessible open space, incidental green space, green ‘corridors’, the water environment including streams, ponds, canals and other water bodies (blue infrastructure), productive environments, trees, and green walls and green/brown roofs. Other GI assets could include:

- Parks & gardens.
- Natural & semi-natural open space.
- Amenity green space.
- Outdoor sports facilities.
- Play space & provision for children & young people.
- Cemeteries & churchyards.
- Allotments, community gardens & farms.
- References to GI in this document also apply to different types of blue infrastructure where appropriate.

GI’s multifunctional nature can bring environmental and wider benefits, at a range of scales, including benefits afforded to human health and enhanced well-being, landscape character, climate change adaptation, outdoor recreation and access, food and energy production, biodiversity, and the management of flood risk. In urban areas, benefits may also include urban cooling, open space, urban woodland, planted swales and productive landscapes also used for recreation. In the wider landscape, GI can identify strategic catchment scale flood alleviation schemes or long-distance sustainable transport or wildlife corridors.

## Vision and Overarching Objectives

This Strategy sets out a vision and series of overarching objectives to assist in the design of the Proposed Scheme reaching its potential and becoming a key green infrastructure corridor for the district.

The GI vision is to....

**‘Create a key GI corridor to link with or improve links to nearby assets. The GI corridor will be a multi-functional asset within the landscape, designed to maximise access and movement, biodiversity, sense of place, historic character, sustainable water resources and enhanced health and wellbeing.’**

The overarching objectives include:

- Objective 1 – To establish an off road, shared pedestrian and cycling route for the length of the route.
- Objective 2 – To maximise pedestrian and cycling connectivity to the existing PRoW network, surrounding communities (both existing and future), transport nodes and existing green infrastructure assets.
- Objective 3 – To create nodes of functional, useable and quality greenspace along the main corridor which connect with green space in any new developments.
- Objective 4 – To safeguard and expand sensitive habitats and species and enrich biodiversity.
- Objective 5 – To ensure SuDs are an integral part of the highways design and that above ground drainage features are designed to also improve biodiversity, create new habitats and provide usable public green space.
- Objective 6 – To put placemaking at the focus of the design and acknowledge the historic land use through the design.
- Objective 7 – To moderate pollution levels associated with air, noise and light.
- Objective 8 – To improve health and wellbeing through the retention and introduction of a range of landscape features connecting to surrounding countryside and GI assets.

The overarching objectives will be achieved by working collaboratively between all disciplines (including ecologists arboriculturalists, landscape architects and drainage engineers) to achieve the best possible multi-functional features.

## Methodology

The following work has been undertaken to inform this Strategy:

- Desk based review of relevant websites, documents, GI strategies and policy to help identify the context for the Site (including existing assets, designations, constraints and policy framework). Key features have been mapped to illustrate the key connections, assets, constraints and opportunities.
- Fieldwork to walk the length of the Proposed Scheme alignment (as far as practicable) and surrounding areas to understand the Site’s character, connectivity, materials, vegetation and accessibility.
- Consultation regarding the GI Strategy structure and content was discussed with representatives of WSCC in February 2019 and October 2019.

<sup>1</sup> Ministry of Housing, Communities and Local Government, 2019, National Planning Policy Framework

<sup>2</sup> Landscape Institute, 2013, Green Infrastructure, An integrated approach to land use

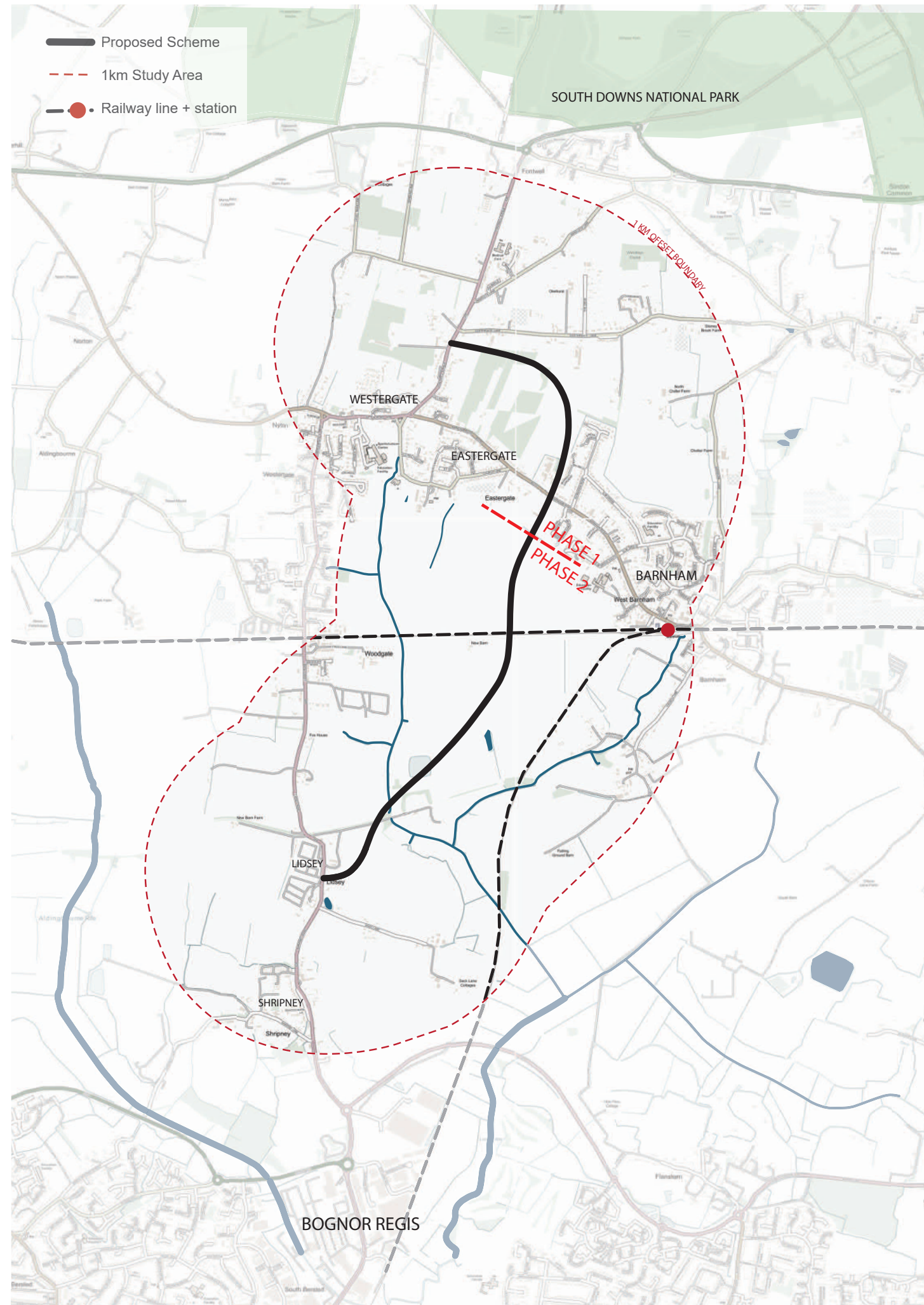


Figure 1. Location Plan

**2.0**

Legislation & Policy



# 2.0 Legislation & Policy

## Introduction

This Strategy has taken into account current legislation, policy and guidance relevant to GI. Given the wealth of national, regional and local policy and guidance relating to GI, particularly Government targets for Biodiversity Net Gain (BNG), improved air quality and public health and the declaration of a Climate Emergency, a more detailed summary is provided in Appendix A.

## Local Policy

The Proposed Scheme lies within Arun District Council's (ADC) administrative area; one of seven districts within WSCC.

### Arun Local Plan 2011 - 2031

Arun Local Plan 2011-2031<sup>3</sup> covers the southern half of the district whilst the northern half of the district falls within the South Downs National Park (SDNP); the responsibility of the SDNP Authority. The SDNP lies around one kilometre north of the Proposed Scheme.

ADC Local Plan seeks to conserve and enhance distinctive or important landscape, arboricultural and biodiversity features. Of particular interest to this Strategy is how the Proposed Scheme fits into the local landscape setting. Strategic objectives for Settlement Structure, GI and Landscape set out within the Local Plan include protecting and enhancing the district's 'outstanding landscape, countryside, coastline, historic, built and archaeological environment, as well as the setting for the South Downs National Park'.

The Local Plan identifies the importance of maintaining the distinctive settlement pattern of Arun District. The importance of retaining settlement structure is recognised along with the value of gaps between settlements, 'preventing the coalescence of individual settlements and for retaining the separate identity and amenity of settlements' and maintaining the districts multifunctional GI network.

The Plan, within Policy GI SP1 outlines the particular importance of green infrastructure in development. The policy is as follows:

*'The existing Green infrastructure network, as shown on the Green Network maps for each parish and town, must be considered at an early stage of the design process for all major development proposals.*

*All major development must be designed to protect and enhance existing Green Infrastructure assets, and the connections between them, in order to ensure a joined up Green Infrastructure Network. The Green Infrastructure network must be protected from light pollution to ensure that areas defined by their tranquility are protected from the negative effects of light in development.*

*Where compatible with nature conservation objectives, development proposals must identify opportunities to connect existing Green Infrastructure assets with the coast, the South Downs National Park or to the District's inland villages. Opportunities to enhance the network should take account of the multiple functions of Green Infrastructure assets and should be based upon those opportunities set out in the supporting text.'*

The Plan, within Policy SD SP3, seeks to protect strategic gaps between settlements to prevent coalescence and retain their separate identity. This includes the gaps between Bognor Regis/ Chichester/ Felpham and particularly Barnham to Walberton.

## Guidance and Existing Strategies

### Arun Green Infrastructure Study

The Arun Green Infrastructure Study (2012) provides a study of GI within the district. The study is a precursor to a sub-regional GI Strategy for the coastal West Sussex area. The study outlines the key characteristics of the Arun district including the environmental assets that form an integral part of the district's GI Network. The study carries forward the policies outlined in the South East Green Infrastructure Framework (2009) and develops a district level framework for GI in Arun.

The study identifies that Arun District has a marked split in coverage of GI assets. In the northern half of the district GI assets are plentiful and some are of considerable size, including Slindon Estate and Arundel Park. Connectivity is strong here with connections running to the north, and south towards the coastal plain. The southern part of the district is characterised as having small sized GI assets within the urban areas of Bognor Regis and Littlehampton, along with a few larger assets such as Pagham Harbour, a Site of Local Importance for Nature Conservation, and the strategic and local gaps. The study characterises the central area of the district, within which the Scheme lies, as having 'few GI assets all of which are very small in scale apart from the strategic and local gaps which provide the only large-scale GI assets in the central area of the District'.

The Study recognises the future growth of the district through the Proposed Growth Areas and, along with reference to previous work undertaken in understanding the landscape character and sensitivity of the district, provides a baseline of the development potential within each of the growth areas and likely impacts on the GI network and landscape character. One potential growth area identified is the Barnham-Eastergate-Westergate Growth Area.

The Barnham-Eastergate-Westergate Growth Area covers the Proposed Scheme and identifies the pressures on GI, key characteristics, and sensitivities of the area. It also provides landscape recommendations for the growth area including the following;

- Creation of a green space within the development site to keep a separation between the three villages.
- Encourage landscape enhancements around villages and on their approaches to conserve the setting of these settlements, particularly the Eastergate Conservation Area.
- Create a new, large scale tree and hedgerow framework which complements the open intensively farmed landscape, whilst maintaining significant views of Chichester Cathedral, the South Downs and local features.
- Maintain and enhance the landscape and biodiversity of watercourses and other existing habitats, enhancing their value as wildlife corridors. Re-profile banks and encourage more diverse flora by lengthening clearance cycles.
- Enhance the visual prominence of watercourses through the establishment of waterside vegetation features.
- Conserve ancient semi-natural woodland as an historical, landscape and wildlife feature and promote management of existing woodland, especially where under pressure from gravel working or urban fringe development.
- Ensure any new development is well integrated into the wider landscape. Use new woodland and hedgerow planting as appropriate. Particularly plant small tree groups on the eastern boundary of Binsted valley to screen glasshouses and traffic movement on its margins.

The Arun GI study established a framework for consideration of GI during planning and development within the district and informed the evidence base for the Arun Local Plan. The study established that GI assets in the district perform several primary functions including:

- Access links and access to recreation.
- Conserving and enhancing biodiversity.
- Sense of place.
- Historic character.
- Productive green environments.
- Sustainable water resources.

## Bognor Regis Green Infrastructure Framework

The Bognor Regis GI Framework provides a vision for GI between Bognor Regis and the SDNP, focussing on how the area can deliver resilience to the effects of climate change in the district. Key opportunities identified within the Framework include:

- Several existing open spaces that would benefit from enhancements to their quality and value especially around Barnham, Eastergate and Westergate.
- New provision for footpaths, cycle paths and enhancements to the existing network may be delivered alongside enhancements such as planting.
- Enhance and improve the wildlife value of the rife and ditch network, forming a high-quality wildlife corridor.
- Increase hedgerow and woodland connectivity through additional planting.
- Ensure existing and proposed recreational open spaces are multifunctional and provide wildlife habitat alongside other functions.
- Reinforce local character through the incorporation of appropriate planting and habitat creation.
- Help define the urban-rural fringe through planting and the use of appropriate materials for access infrastructure. Consider appropriate treatments for gateway areas.
- Lessen the landscape and visual impact of transport infrastructure through appropriate planting.
- Ensure landscape character is enhanced and reinforced through appropriate use of materials. This extends to path surfacing, way-marking and any waterways infrastructure. This is of particular importance nearby designated Areas of Character, Conservation Areas and Listed features.

In addition to the above Local Plan, studies and frameworks, the following items of Supplementary Planning Guidance or Guidance documents are relevant to the GI Strategy, all of which seek to promote health and wellbeing, access to nature and recreational open space; and management of water:

- Barnham and Eastergate Neighbourhood Plan 2014-2029<sup>4</sup>.
- West Sussex County Council: Breathing Better<sup>5</sup>.
- West Sussex County Council: Adoptable Highway Drainage and SuDS, Guidance Note for Developers<sup>6</sup>.
- West Sussex County Council: Pollinator Action Plan 2019-2022 (December 2018)<sup>7</sup>.
- ADC Open space sport and recreation study (PMP, March 2009)<sup>8</sup>.
- Water. People. Places. A guide for master planning sustainable drainage into developments<sup>9</sup>.

## Sustainable Drainage Systems, Maximising the Potential for People and Wildlife (RSPB, WWT)

This document highlights that surface water management can be designed to deliver benefits for the whole community through improvements to biodiversity, climate regulation, education, health, recreation and play. There is also a number of features which can be used to create a diverse landscape for people and wildlife. Rain gardens, planters, ponds and wetlands, all linked by carefully designed hard and soft conveyance features such as concrete rills and grass swales.

4 Barnham and Eastergate Parish Councils, 2013, Eastergate Parish Council/ Barnham Parish Council Barnham and Eastergate Neighbourhood Plan 2014-2029

5 West Sussex Inter-Authority Air Quality Group, 2020, Breathing Better: A partnership approach to improving air quality in West Sussex

6 West Sussex County Council, 2019, Adoptable Highway Drainage and SuDS, Guidance Note for Developers

7 West Sussex County Council, 2018, Pollinator Action Plan 2019-2022

8 Arun District Council and PMP, 2009, Open space sport and recreation study

9 Aecom, 2013, Water. People. Places. A guide for master planning sustainable drainage into developments

**3.0**

# Baseline Green Infrastructure Assets and Opportunities

# 3.0 Baseline Green Infrastructure Assets and Opportunities

## Baseline Context

This section sets out an overview of the existing GI context of the Site. The analysis explores GI assets in the study area, highlighting any key assets and design opportunities for enhancement or new provision, including those to tie into existing GI strategies. For the purposes of this report, the GI assets are grouped by their function as per the Bognor Regis GI Framework<sup>10</sup> and Arun District Green Infrastructure Study (June 2012)<sup>11</sup> but with the additional inclusion of Pollution, and Health and Wellbeing, given the potentially all-encompassing benefits of GI. For ease of reference, each function is colour coded throughout the document, as follows:

- Access links and access to recreation.
- Conserving and enhancing biodiversity.
- Sense of place.
- Historic character.
- Productive green environments.
- Sustainable water resources.
- Pollution.
- Health and Wellbeing.

## Access Links and Access to Recreation ●

### Overview of Requirements and Aims

Access and access to recreation refers to the provision of sustainable transport and access routes, and access to a variety of recreational opportunities for the widest range of social, interest and age groups. This includes facilities for active travel such as walking and cycling tracks as well as bridleways. They should also consider requirements of wheelchair users, and people with low mobility or impaired sight. The promotion of active travel facilities can increase health and wellbeing as well as improve air quality, particularly where such routes connect to transport hubs, existing long-distance routes, and areas of interest/ nodes of activity such as schools. They should also target areas which are currently lacking in existing connections.

### Baseline Assets: Access Links and Access to Recreation

In relation to the Site, there are several publicly accessible parks, amenity green spaces, play spaces, and natural & semi-natural open spaces within the study area, including Eastergate Sports Field, The Lidsey Rife, the Line of the Portsmouth and Arundel Canal, and St George's churchyard<sup>12</sup>. There are numerous Public Rights of Way (PRoW) within the study area with one PRoW crossing the proposed A29 route. PRoW (Eastergate 318-1) is a local walking route connecting Barnham Road with Eastergate Lane. It's orientation, running north to south, has the potential to act as part of a wider network connecting the SDNP with the coastal plain to the south. This footway is identified within the Bognor Regis GI Strategy as part of a GI corridor linking Bognor Regis with the SDNP.

A PRoW (Eastergate 321-1) cuts across the countryside south of the Proposed Scheme providing an East-West off road link between the outskirts of Eastergate and Barnham. Along with a number of other smaller PRoW and quiet rural roads, this route creates a significant East-West connection spanning approximately 3 km from Aldingbourne to Barnham.

There are several PRoW in the wider district including a North-South route running through Barnham (Barnham 158-3) and an extensive East-West pedestrian connection along the course of the disused Chichester to Arundel canal (Barnham 200/1-2). This forms part of the Long Distance Walkers Association (LDWA) long distance walking route entitled 'London's Lost Route to the Sea'<sup>13</sup> which weaves through Hampshire, Greater London, Portsmouth, Surrey and West Sussex. There are several cycle routes in the area that allow commuters to cycle to Barnham railway station using a combination of quiet roads and designated cycle paths. A cycle trail (part of the Barnham Link trail, connecting Barnham to Eastergate, Felpham and Bognor Regis) is located east of the Site running north to south see Figure 2 Access and access to recreation links.

## Design Opportunities: Study Area

The Bognor and Arun GI studies identify numerous design opportunities within and around the Proposed Scheme. Key opportunities include:

- The Bognor and Arun GI studies identify numerous design opportunities within and around the Proposed Scheme. Key opportunities include:
- New provision for footpaths, cycle paths, bridleways, and enhancements to the existing network may be delivered alongside enhancements such as planting.
- Create and improve links & connections between existing GI assets.
- Maximise pedestrian and cycling connectivity to the existing PRoW network and surrounding communities.
- Provide sustainable links to transport nodes & facilities.
- Create areas of greenspace which connect with green space in any future developments.
- Facilitate east-west movement through green links.

## Specific Design Opportunities: A29 Phase 1

The Site is reasonably well connected with existing access assets but there are numerous opportunities for enhancement and improvement in relation to the Site itself and refining the more general opportunities identified above. Opportunities include:

- New provision for footpaths, cycle paths and bridleways by including a path alongside the whole A29 Phase 1 route alignment.
  - » Active Travel opportunities: new paths.
  - » Variation in visual amenity and character along the Proposed Scheme.
- Maximise pedestrian and cycling connectivity to the existing PRoW network, GI assets and surrounding communities.
  - » Ensure access routes, greenspaces and planting features are connected to existing features and future developments.
  - » Maximise pedestrian and cycling connectivity to existing PRoW network and surrounding communities.
  - » Provide sustainable links to key transport nodes.
  - » Create inclusive junctions along the A29 Phase 1 route that can accommodate pedestrians, cyclists and equestrians where appropriate.

10 Arun District Council and LUC, 2019, Bognor Regis GI Framework: A Landscape & Green Infrastructure Framework Connecting Bognor Regis to the South Downs National Park

11 Arun District Council, 2012, Arun District Green Infrastructure Study

12 Eastergate Parish Council/ Barnham Parish Council, 2014, Barnham and Eastergate Neighbourhood Plan 2014-2029

13 Long Distance Walkers Association, 2019, London's Lost Route to the Sea, Available at [https://www.ldwa.org.uk/ldp/members/show\\_path.php?menu\\_type=S&path\\_name=London%27s+Lost+Route+to+the+Sea](https://www.ldwa.org.uk/ldp/members/show_path.php?menu_type=S&path_name=London%27s+Lost+Route+to+the+Sea) [Accessed January 2020]



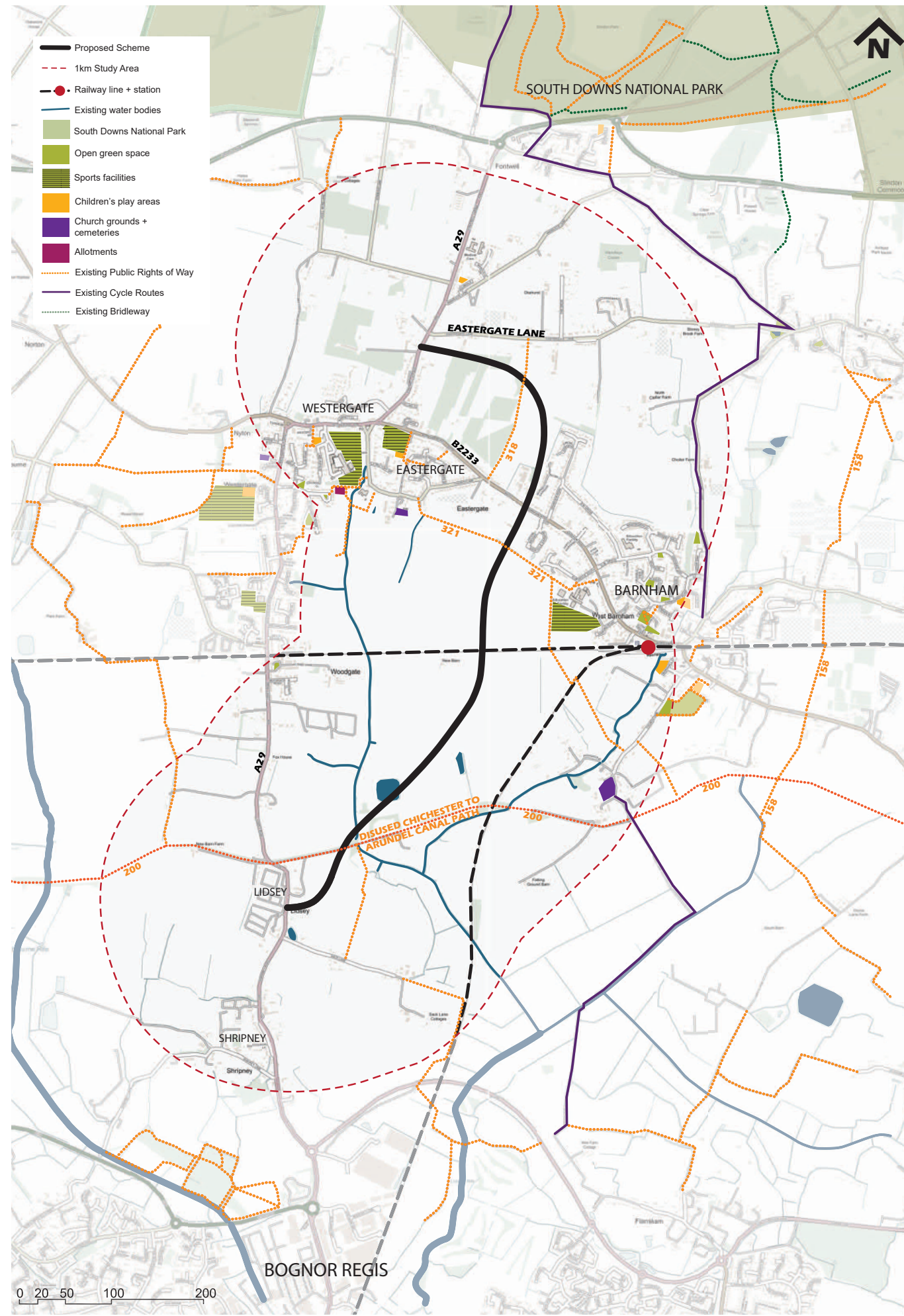


Figure 2. Access and access to recreation links



## Conserving and Enhancing Biodiversity ●

### Overview of Requirements and Aims

The betterment of biodiversity can be considered in the design of GI features and can support increased connectivity between existing habitats. Site design and layout should maximise benefits for biodiversity in new development by incorporating, connecting and enhancing habitats in the wider surrounding landscape; utilising a landscape scale approach. Opportunities can be identified to promote multifunctional use of existing open spaces within urban areas, such as playing fields, by incorporating habitat features, appropriate planting and flood storage.

Whilst Government's 25 Year Environmental Plan<sup>14</sup> and NPPF refers to Biodiversity Net Gain (BNG) and the need to improve biodiversity, National Policy Statements have yet to be updated and do not provide such a mandate.

ADC Local Plan Policy ENV DM5 Development and Biodiversity states that development should aim to achieve BNG whilst also protecting the existing habitats on Site. Development should be designed to facilitate the emergence of new habitats as well as the creation of links between habitat areas and open green spaces. Combined, these provide a vital network of green spaces which act to reconnect isolated sites and facilitate important species movement.

### Baseline Assets: Biodiversity

The baseline landscape features associated with the study area include a wide variety of planting and associated habitats, including Broadleaved woodland, Semi-natural, Native hedgerows, Native hedgerows with trees, Grassland / scrub, Mature trees, Traditional orchards, Arable farmland, Pasture, and Semi-improved grassland. There are no other landscape or ecological designations within the study area: see Figure 3 Biodiversity.

The study area has significant biodiversity value due to its rural setting. Species-rich hedgerows, with and without trees, are important for the range of species they support and their function as corridors and refuges. Although there are no areas of ancient woodland within the study area, there are small areas of broadleaved woodland cover scattered across it, as well as a large area of traditional orchard<sup>15</sup> to the north of the Proposed Scheme - particular features of the district.

Agricultural grassland, hedgerows and open spaces also attract badgers (there are several badger setts located throughout the study area) as well as bats, birds and reptiles.

### Design Opportunities: Study Area

The Bognor and Arun GI studies identify numerous opportunities within and around the Proposed Scheme.

Design opportunities include:

- Enhance and improve the wildlife value of the existing hedge and ditch network, forming high-quality wildlife corridors.
- Increase hedgerow and woodland connectivity through additional planting.
- Ensure existing and proposed recreational open spaces are multifunctional and provide wildlife habitat alongside other functions.
- Safeguard and expand existing valuable habitats, enriching their existing biodiversity.
- Maximises biodiversity & create a BNG through an appropriate soft landscaping palette which is in keeping with local native species & habitats.
- Ensure management and maintenance proposals benefit biodiversity.

### Specific Design Opportunities: A29 Phase 1

In relation to the Phase 1 Site, opportunities include:

- Design for connectivity and value of habitats: woodland, hedgerow and ecological corridors.
  - » Manage/maintain boundary hedgerows, including 'gapping up' where necessary with varied species.
  - » Incorporate new hedgerow planting along the Proposed Scheme to connect to adjacent/existing features.
- Design for multifunctional use.
  - » Width of the Proposed Scheme.
  - » Separation of uses.
  - » Screen planting.
- Design for celebrating and protecting existing features.
  - » Traditional orchards.
  - » Hornbeam hedge.
  - » Mature trees.
- Design for maximising Biodiversity and BNG.
  - » BNG principles.
  - » Use of water management features.
  - » Native species.
  - » Pollinator Species.
- Design for appropriate management.
  - » Mowing regimes.
  - » Plant selection.

<sup>14</sup> HM Government, 2018, A Green Future: Our 25 Year Plan to Improve the Environment

<sup>15</sup> Natural England Open Data, Traditional Orchards HAP (provisional) (England). Available at <https://naturalengland-defra.opendata.arcgis.com/datasets/traditional-orchards-hap-provisional-england?geometry=-0.696%2C50.838%2C-0.615%2C50.848> [Accessed January 2020]

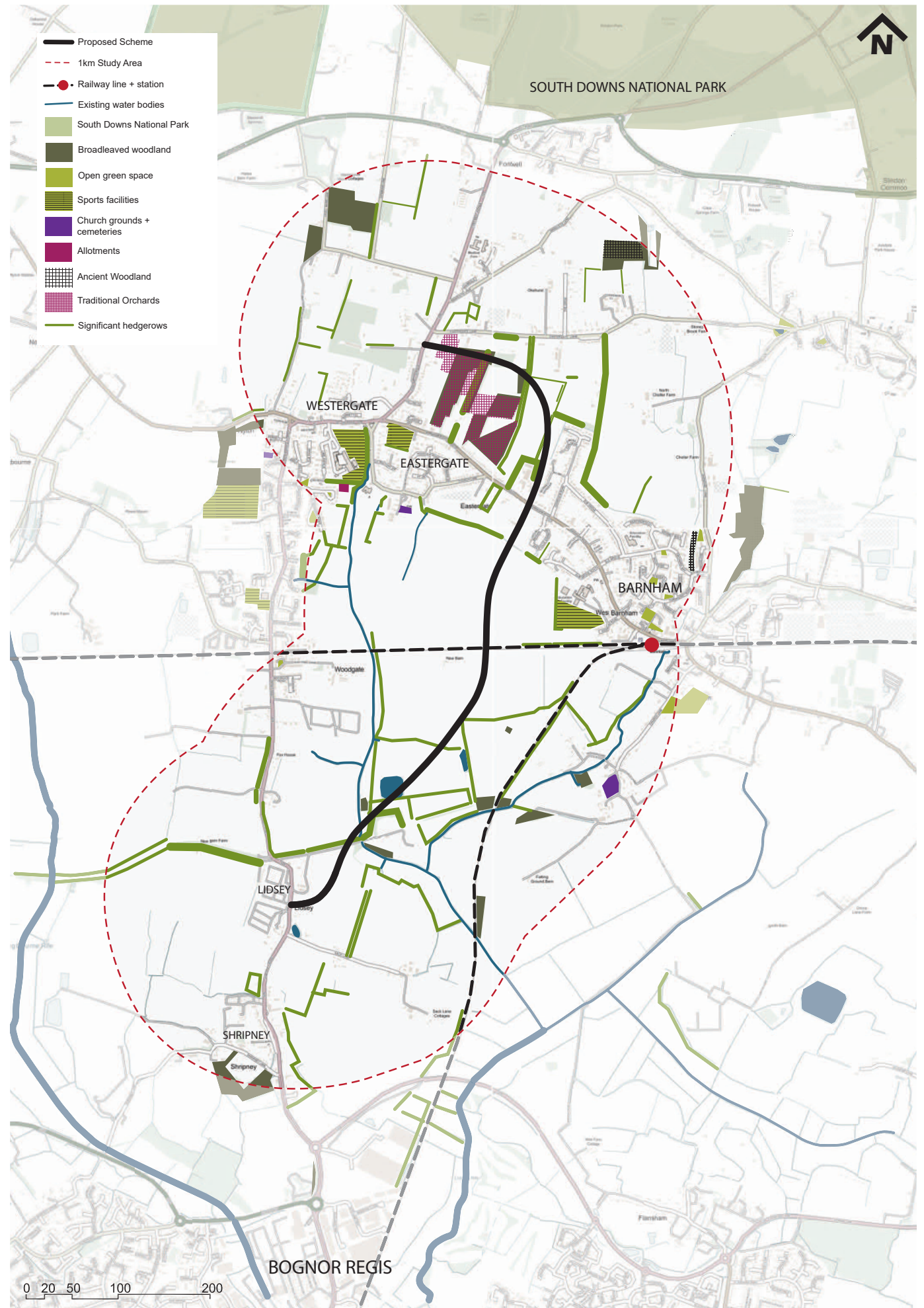


Figure 3. Biodiversity



# Sense of Place

## Overview of Requirements and Aims

GI can enhance sense of place by contributing to the wider setting for settlements and areas of development. A thorough understanding of existing local landscape character is required in planning for GI to ensure design and enhancements are appropriate and do not detract from the distinctiveness of a place. This applies to a range of GI functions such as habitat creation, planting, materials and wayfinding<sup>16</sup>.

## Baseline Assets: Sense of Place

The Site sits within National Character Area (NCA)<sup>17</sup> 126 South Coast Plain. The NCA profile describes the area as broadly divided into the coastal margins, heavily influenced by the sea; the expansive lower coastal plain which occupies most of the area; and the upper coastal plain which forms the transition between the lower plain and the chalk dip slopes of the South Downs and the South Hampshire Lowlands<sup>18</sup>. The Proposed Scheme sits within the latter.

Key characteristics of the north and east of the area, where the Proposed Scheme sits, are flat, regular patterns of large fields. It is a varied landscape, incorporating both open arable farmland and low-density settlements, with some wooded and semi-enclosed (somewhat suburban) character locally. Further north of the Site there is a network of small and medium-sized broadleaved woodlands, including ancient and semi-natural woodland, well linked by hedgerows and garden exotics providing an enclosed field framework.

It is a fertile area, due to superficial deposits & favourable climatic conditions, that supports intensive arable farming and horticulture, particularly soft fruit. This has given rise to the use of glasshouses and polytunnels in some areas. The underlying geology of flinty marine and valley gravels also gives rise to deep and well-drained, high quality soils.

The NCA profile sets out one of its Statements of Environmental Opportunities for this Character Area as “[P]lan for the creation of a strong landscape framework within and around major settlements and identified growth areas, while managing and enhancing existing greenspace and access, and balancing the needs of agriculture, communities and the natural environment.”<sup>19</sup>

The Proposed Scheme will cut through potential development areas between Eastergate and Barnham: see Figure 4 Sense of Place.

## Design Opportunities: Study Area

The Bognor and Arun GI studies identify numerous opportunities within and around the Proposed Scheme. Key opportunities include:

- Reinforce local character through the incorporation of appropriate planting and habitat creation. This may focus on restoring hedgerows, grassland and riparian habitats.
- Help define the urban-rural fringe through planting and the use of appropriate materials for access infrastructure.
- Lessen the landscape and visual impact of transport infrastructure through appropriate planting.
- Ensure landscape character is enhanced and reinforced through appropriate use of materials. This extends to path surfacing, wayfinding and any waterways infrastructure.

## Specific Design Opportunities: A29 Phase 1

In relation to the Phase 1 Site, opportunities include:

- Ensure water management solutions include riparian habitats (within, for example, swales, attenuation ponds or rain gardens).
- Ensure the planting palette reflects local species and character, including orchard trees.
- Ensure hard surfaces, structures and site furniture are in suitable materials and styles, including paths, lighting and acoustic barriers.
- Ensure suitable space is included for meaningful soft landscape planting and habitat creation.

<sup>16</sup> Arun District Council and LUC, 2019, Bognor Regis GI Framework: A Landscape & Green Infrastructure Framework Connecting Bognor Regis to the South Downs National Park.

<sup>17</sup> NCAs divide England into 159 distinct natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity, history, and cultural and economic activity. Their boundaries follow natural lines in the landscape rather than administrative boundaries.

<sup>18</sup> Natural England, (2014). National Character Area Profiles - 126. South Coast Plain. [online]. Available at <http://publications.naturalengland.org.uk/category/587130> [Accessed January 2020].

<sup>19</sup> Natural England, (2014). National Character Area profiles - 126. South Coast Plain. [online]. Available at <http://publications.naturalengland.org.uk/category/587130> [Accessed January 2020].

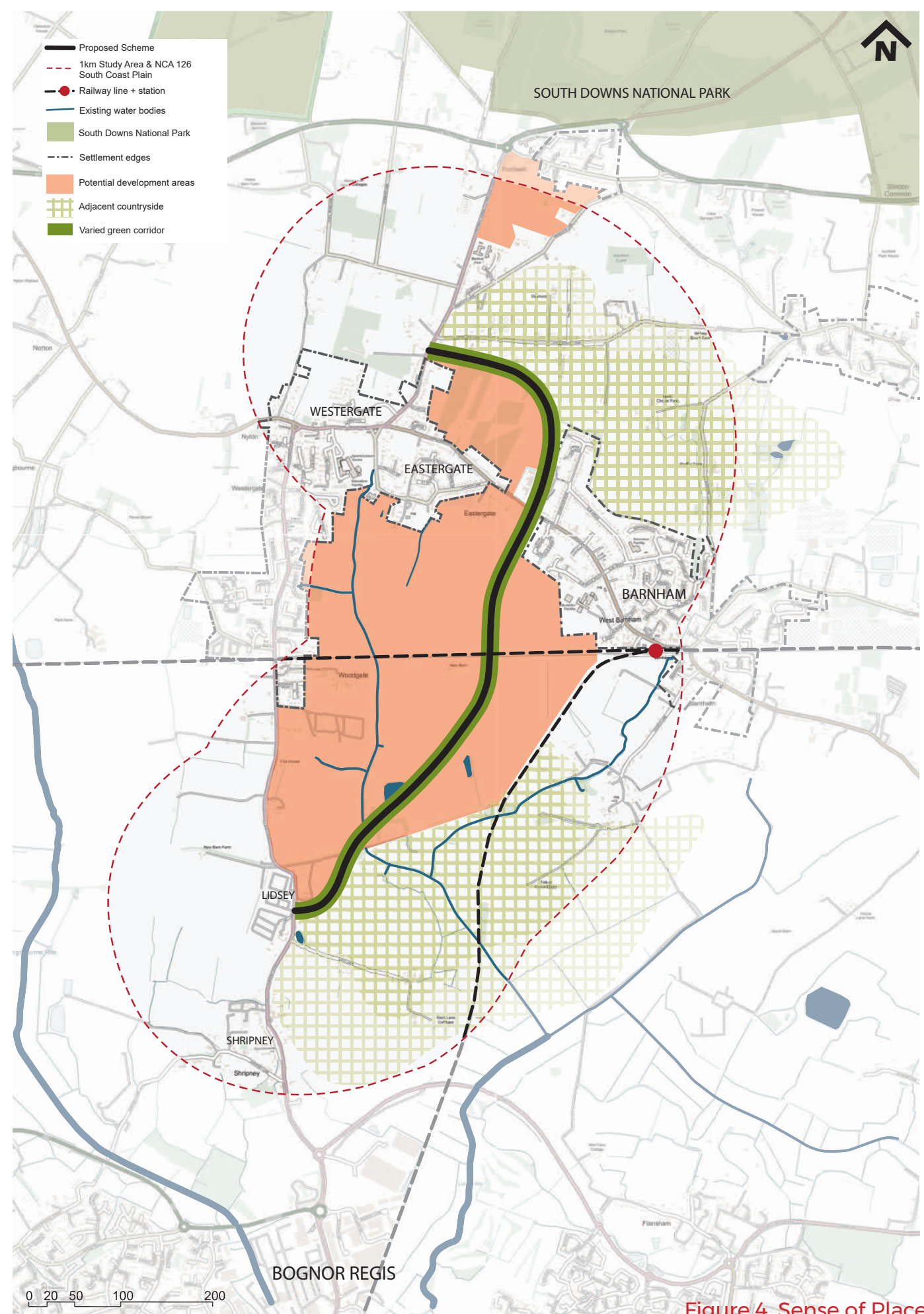


Figure 4. Sense of Place



# Historic Character

## Overview of Requirements and Aims

Cultural heritage and historic character may include both built features and evidence of previous land use. Identifying features of importance helps ensure new GI features enhance, rather than detract, from these assets. By identifying areas of focus and possible hubs of activity, areas may be prioritised for improving accessibility and providing opportunities for recreation<sup>20</sup>.

## Baseline Assets: Historic Character

Prior to the 18th century, the area around Eastergate and Barnham consisted mostly of Oak, Ash and Elm woodland, and open heathland on areas less fertile to the north. By the late 19th century, much of the land had been adopted for orchards or market gardens. Settlements remained consistently small from the Middle Ages through to the late 20th century, when a housing boom saw rapid settlement expansion and the rise of horsiculture on the fringes.

Four Listed Buildings are located at Manor Farm including the Barn and Cart Shed, Granary outbuilding, Manor Farmhouse, and St George's church. This cluster of buildings sit on the very outskirts of Eastergate, close to the Proposed Scheme and separated from the Scheme by farmland. There is evidence of Roman occupation with a Roman villa site near St. George's church and part of the church's chancel wall being made using Roman bricks. There are several other Listed Buildings in the wider area, clustered around the historic centres of Westergate and Eastergate, along Westergate Street, Nyton Road and Church Lane. Three Conservation Areas - Church Lane Barnham, Church Lane Eastergate and Eastergate Square lie within the study area, and Barham has an Area of Special Character; a mix of statutory and locally listed historical buildings and those with special character: see Figure 5 Historic Character.

## Design Opportunities: Study Area

The Bognor and Arun GI studies identify numerous opportunities within and around the Proposed Scheme. Key opportunities include:

- Open areas affording views from publicly accessible paths towards notable buildings and historic features should be protected and considered where tree planting is proposed.
- Utilise historic features as 'points of interest' along transport routes.
- Protect historic character through the appropriate use of materials.
- Conserve the character and cultural heritage of the local villages of Barnham, Westergate and Eastergate, including Eastgate Conservation Area surrounding Manor Farm.

## Specific Design Opportunities: A29 Phase 1

In relation to the Phase 1 Site, opportunities include:

- Although there are no direct views from the Proposed Scheme towards any heritage assets, there is the opportunity for interpretation panels along the route to celebrate local history or historic features ('points of interest'), such as the Traditional Orchards and impressive Hornbeam Hedge line.

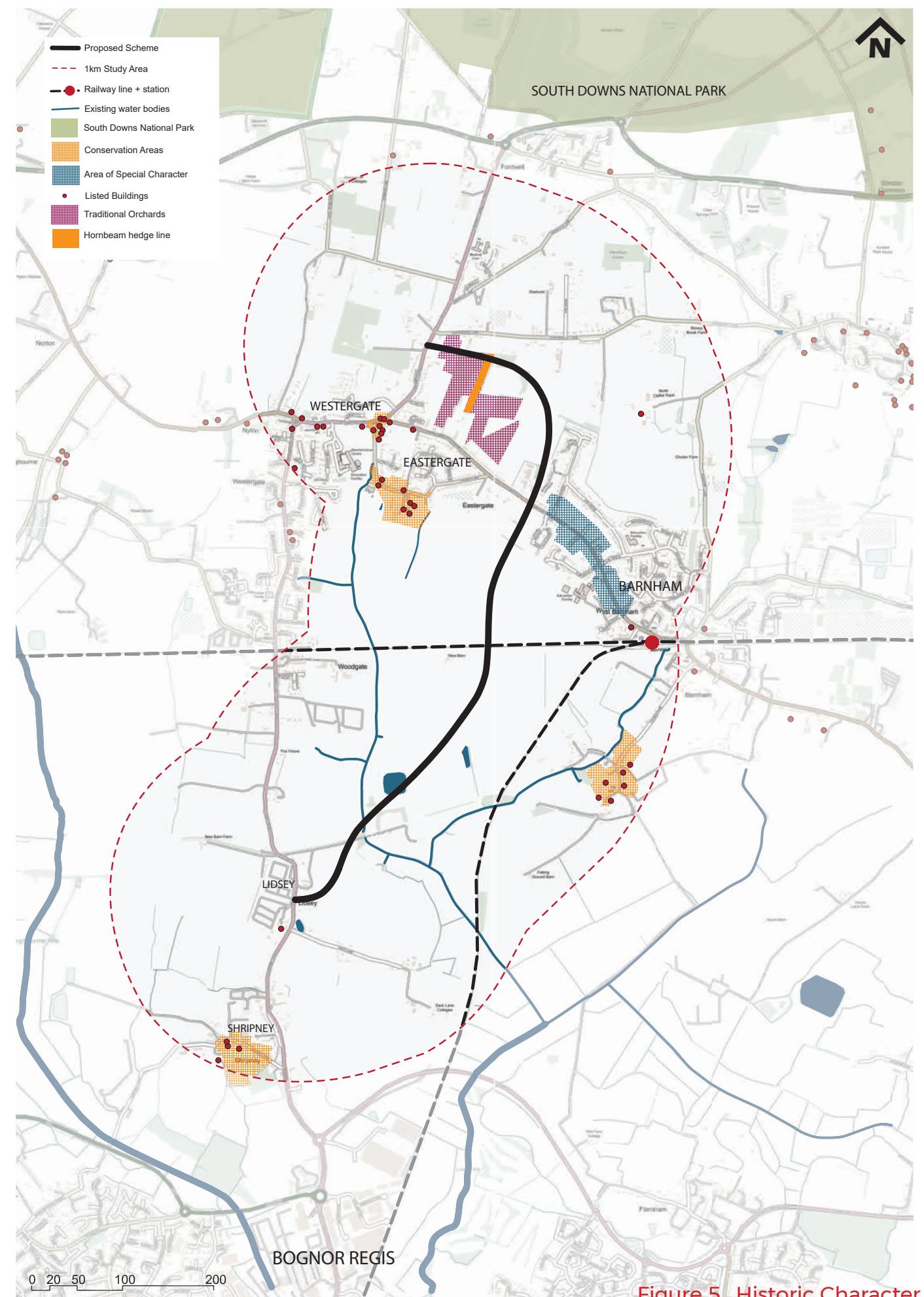


Figure 5. Historic Character

<sup>20</sup> Arun District Council and LUC, 2019, Bognor Regis GI Framework: A Landscape & Green Infrastructure Framework Connecting Bognor Regis to the South Downs National Park.



# Productive Green Environments

## Overview of Requirements and Aims

Productive environments are a key characteristic of the area with agricultural and horticultural uses near the study area. Productive green environments can be incorporated within and around urban areas and can help to improve people's quality of life, health and well-being. Areas for communal growing, whilst also providing opportunities for exercise and access to healthy food, can also foster improved social cohesion<sup>21</sup>.

## Baseline Assets: Productive Green Environments

A large proportion of the study area is currently under productive land uses including arable, horticulture and improved grassland. Agricultural land classification indicates land within the area ranges from excellent to moderate, with the moderate quality land generally most associated with flood zones. Traditional orchards are a particular feature of the area and cross the Proposed Scheme contributing to its productive and 'edible' landscape: see Figure 6 Productive green environments.

## Design Opportunities: Study Area

The Bognor and Arun GI studies identify numerous opportunities within and around the Proposed Scheme. Key opportunities include:

- Provide productive landscapes for community use as part of, or adjacent to, development proposals including local schools or other community hubs. This may comprise community garden, orchards or allotments.
- Provide areas for local sustainable food 'edible landscapes'.
- Community and school growing spaces included in new open spaces, adjacent to schools to encourage school use.
- Community orchard next to local schools as an educational and recreational resource.
- Use of fruit trees and shrubs in the public realm to encourage informal fruit picking.
- Planting schemes which support pollinators.

## Specific Design Opportunities: A29 Phase 1

In relation to the Phase 1 Site, opportunities include:

- Provide areas for local sustainable food as 'edible landscapes'.
- Retain/ enhance connections to productive landscapes.

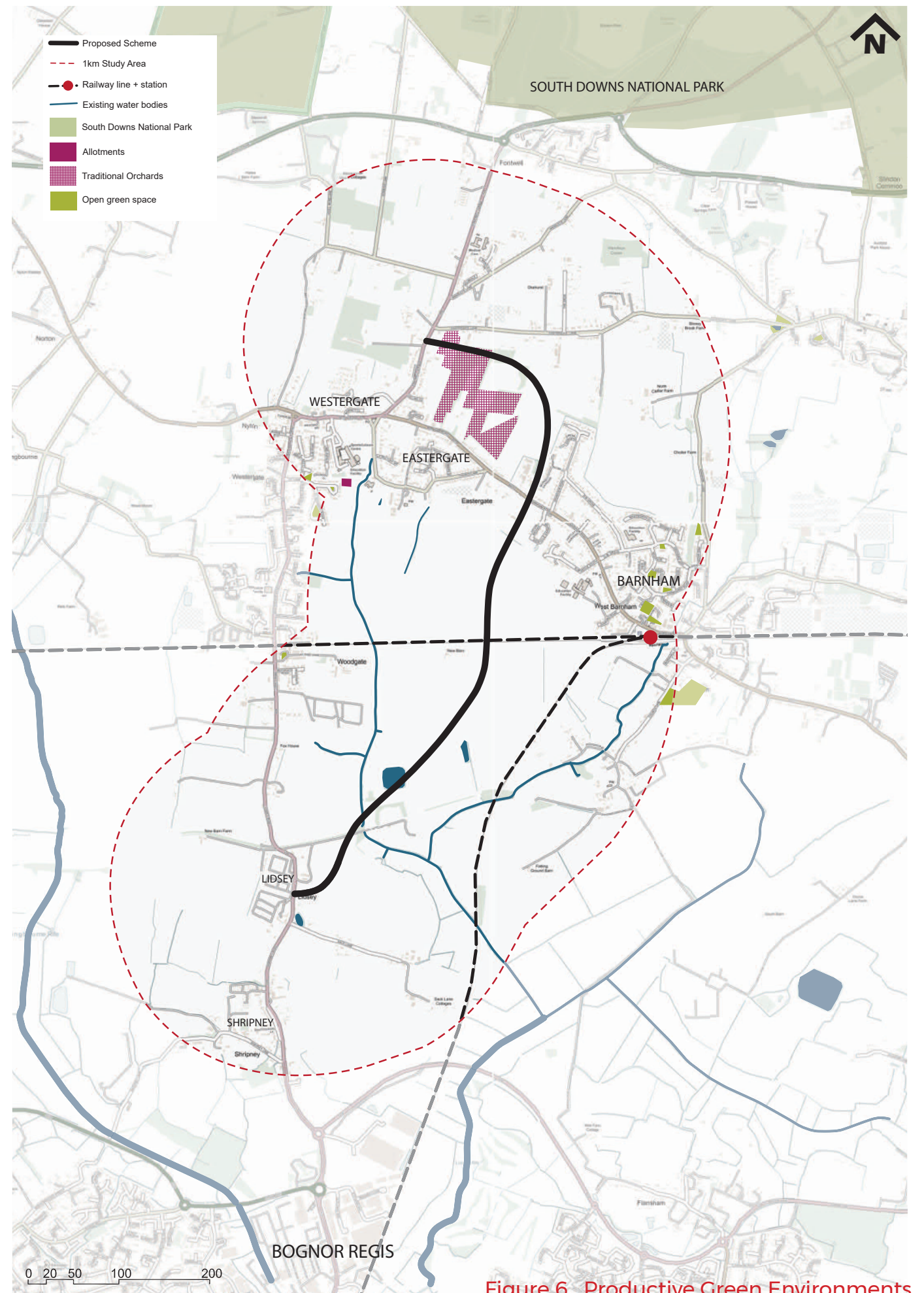


Figure 6. Productive Green Environments

21 Arun District Council and LUC, 2019, Bognor Regis GI Framework: A Landscape & Green Infrastructure Framework Connecting Bognor Regis to the South Downs National Park



## Sustainable Water Resources

### Overview of Requirements and Aims

The water environment is a key GI component in many landscapes, providing a wide range of benefits for recreation and biodiversity as well as conserving landscape character and sense of place. Consideration of local hydrology and issues relating to flooding or pollution is essential when planning for GI and offers the opportunity to mitigate against any predicted issues related to climate change. Linear features such as rivers and ditches also create opportunities to improve landscape connectivity both for biodiversity and access for recreation by providing a natural focus of 'routes' through the landscape for GI enhancements.

### Baseline Assets: Sustainable Water Resources

The majority of the Proposed Scheme sits within low lying ground and there is a network of streams and ditches throughout the study area, increasing in frequency towards the South, although there are no watercourses within the A29 Phase 1 Site. Watercourses in the wider area include Lidsey Rife, Ryebank Rife, and Aldingbourne Rife which flow south towards the coast, meeting at Bognor Regis before reaching the sea. Several smaller streams feed into these rifes, one of which starts at Church Lane, Eastergate and follows the boundary between Eastergate and Westergate villages. There are several smaller waterbodies in the area; of particular note is a small pond at the junction of Sack Lane with Lidsey Road and a duck pond where Eastergate Lane meets Barnham Road at Walberton village green: see Figure 7 Sustainable Water Resources<sup>22</sup>.

### Design Opportunities: Study Area

The Bognor and Arun GI studies identify numerous opportunities within and around the Proposed Scheme. Key opportunities include:

- Sustainable drainage features to reduce and help deal with the effects of climate change.
- SuDS features in the design.
- 'Space for water' for the community by designing SuDS features as usable public open space.
- A reduction in surface water runoff and burden in the watercourse network during heavy rainfall events through the incorporation of additional tree planting.
- Swales and small-scale attenuation where appropriate adjacent to new development and alongside pathways.

### Specific Design Opportunities: A29 Phase 1

In relation to the Phase 1 Site, opportunities include:

- Design sustainable, above ground drainage features based on SuDS principles.
  - » Soft landscape planting palette to include trees to aide storm water management.
- Design for biodiversity.
  - » Water features to be planted with suitable species to reflect likely rainfall inundation levels.
  - » Create varied above-ground features to aide habitat variation.
- Design for the Community.
  - » Provide 'space for water' for the community by designing SuDS features as usable public open space.
  - » Water features to be located adjacent to public paths, where possible, as visual (or physical) amenity features.
- Design for interaction.

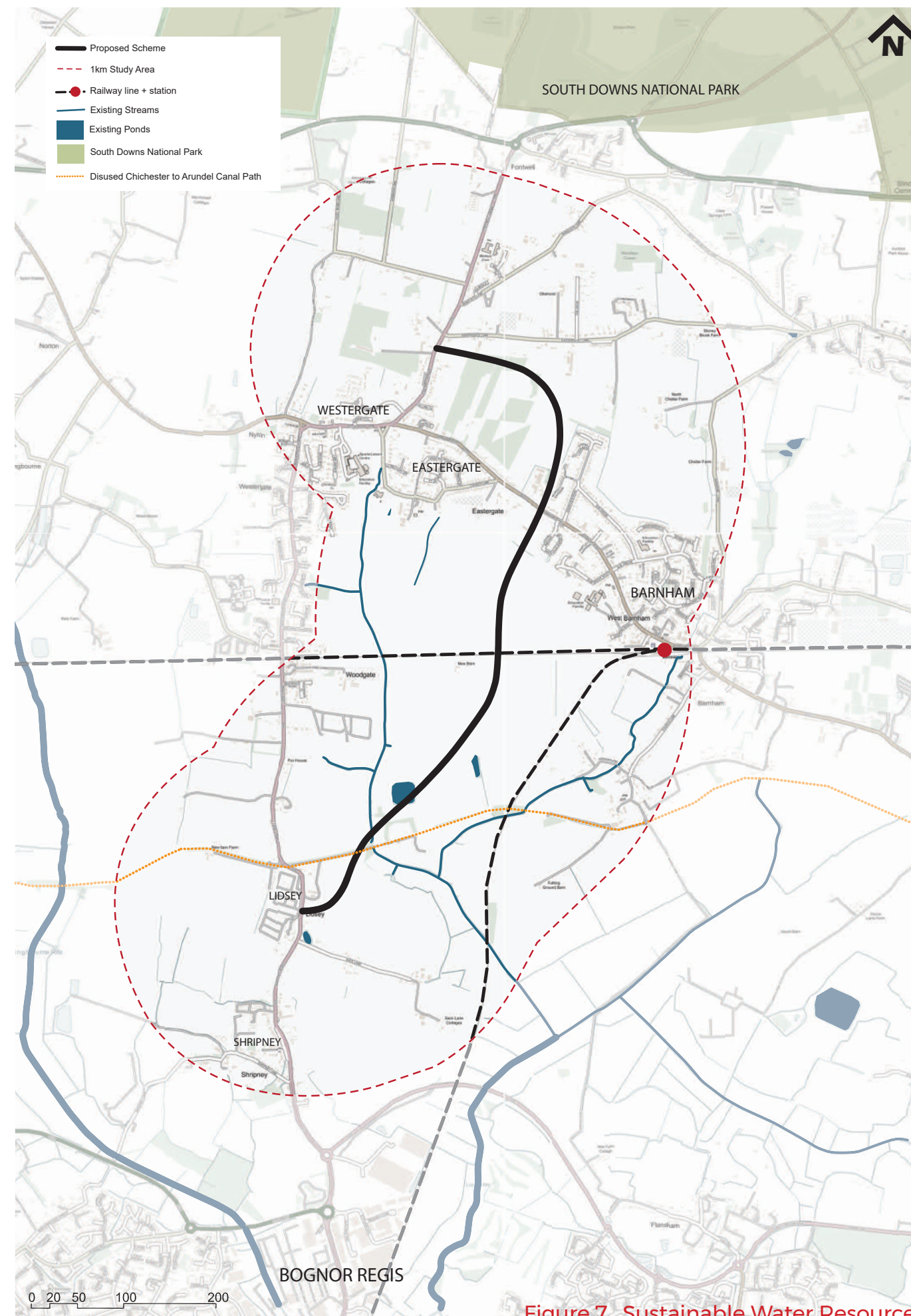


Figure 7. Sustainable Water Resources

22 Arun District Council and LUC, 2019, Bognor Regis GI Framework: A Landscape & Green Infrastructure Framework Connecting Bognor Regis to the South Downs National Park

## Pollution

### Overview of Requirements and Aims

Pollution comes in many forms, and the incorporation of green infrastructure can help to moderate most of them.

#### Air Pollution

A new study estimates that more than one in every 19 deaths in UK cities is related to air pollution<sup>23</sup>. Increasing levels of walking and cycling can help tackle poor air quality by reducing the number of vehicles on the road. Similarly, the importance of vegetation in improving air quality is widely acknowledged. As noted in their Breathing Better<sup>24</sup> report by WSCC, '*[T]rees and vegetation absorb carbon dioxide (the main greenhouse gas) and filter, absorb and reduce pollutant gasses including ozone, sulphur dioxide, carbon monoxide and nitrogen dioxide as well as producing oxygen.*'

Trees remove airborne pollutants at three times the rate of grassland<sup>25</sup> and particulate levels on tree-lined streets can be up to 60% lower than those streets without trees and for every 10% increase in a city tree canopy, ozone is reduced by between 3-7%<sup>26</sup>. A new study has also indicated that a hedgerow planted between a road and a playground could reduce particulate matter by over 50% on the playground side of the hedge, when in full leaf<sup>27</sup>.

#### Light Pollution

Artificial light provides valuable benefits to society, including through extending opportunities for sport and recreation, and can be essential to a new development. However, for maximum benefit, it is important to get the right light, in the right place and for it to be used at the right time.

White light, with more blue content or with ultraviolet content, is generally more disruptive to wildlife than warmer yellow/orange light. Similarly, for humans, light intrusion by white/blue light is more disruptive to sleep. Use of modern white light sources that filter out blue or ultraviolet light may mitigate these effects, as well as offering superior directional control<sup>28</sup>. However, whiter light aids people's vision and ability to perceive colour; it also facilitates CCTV use.

#### Noise Pollution

Noise pollution is unwanted or excessive sound that can have deleterious effects on human health and environmental quality<sup>29</sup>. Trees and vegetation in themselves are not effective at reducing noise levels, especially where there is limited space, but they can help with the perception of noise and can screen a solid noise barrier.

### Baseline Assets: Pollution

Light pollution across the district is at its lowest to the far north, in the vicinity of the National Park, & increases towards the built-up area of Bognor Regis and the coast. Air and noise pollution in the district are also low but there is a notable concentration of traffic around the existing A29 corridor which leads to higher levels of air and noise pollution at this location. However, the existing A29 is not lit except at junctions and in village centres.

Air, noise and light pollution are all at relatively low levels within the majority of the Proposed Scheme as it passes through existing countryside and villages of rural character. The existing site consists of fields edged predominantly with hedgerows and surrounded by further fields and hedgerows, resulting in low light, air and noise pollution due to lack of traffic or activity. Main sources of air, noise or light pollution into the existing site therefore currently come from surrounding streets, commercial areas and properties within the village of Eastergate.

The Proposed Scheme will redirect a proportion of existing traffic from the existing A29 corridor, easing traffic on the existing corridor and improving the conditions within the centres of Eastergate and Westergate. Conversely, new sources of noise, light and air pollution will be introduced into the Site, particularly concentrated where the route meets or crosses existing infrastructure: at the junctions of Fontwell Avenue and Barnham Road.

23 Kathrin Enenkel, Valentine Quinio, Paul Swinney, 27 January 2020 The Cities Outlook Study 2020 - Cities Outlook 2020 <https://www.centreforcities.org/reader/cities-outlook-2020/>

24 West Sussex County Council, January 2020, Breathing Better – A partnership approach to improving air quality in West Sussex.

25 Centre for Ecology and Hydrology – Lancaster University, Undated, Trees & Sustainable Urban Air Quality

26 Greenblue Urban, Edition 9 – The New Design Guide. Available at:

<https://architectprojects.co.uk/greenblue-urban-publish-edition-9-the-new-design-guide/>

27 Sustainable Cities & Society. Also in <https://www.scitecheuropa.eu/planting-hedges-road-pollution-exposure/91967/> (7th January 2019)

28 <https://www.gov.uk/guidance/light-pollution>

29 <https://www.britannica.com/science/noise-pollution>

## Design Opportunities: Study Area

Potential opportunities within and around the Proposed Scheme include:

- Planting as a means to improve air quality for users and residents in adjacent communities, particularly in the form of trees, hedgerows or evergreen shrubs.
- Retention of existing mature trees wherever possible, since mature trees absorb much more pollution than younger, newly planted trees.
- Directional, modern light fittings to minimise light spill and glare, and light only junctions/ sections necessary for health and safety.
- Where the walking and cycling route is adjacent to the highway, leave as large a gap as possible to incorporate planting.
- Consider the use of green acoustic barriers in space-limited locations.

## Specific Design Opportunities: A29 Phase 1

In relation to the Phase 1 Site, opportunities include:

- Planting of trees and hedgerows/low level shrubs including evergreens.
- Lighting to the carriageway should be restricted to purely around junctions and crossing points, as is the practice for the existing A29.
- Use of modern white light sources that filter out blue or ultraviolet light to be used for lighting columns in these locations.
- The off-road pedestrian and cycle path along the Proposed Scheme should have pedestrian scale lighting (such as bollard style lighting) to create a safe environment whilst keeping light pollution to a minimum.
- Consider the use of green acoustic barriers at the southern end of the Phase 1 Site where space is limited.



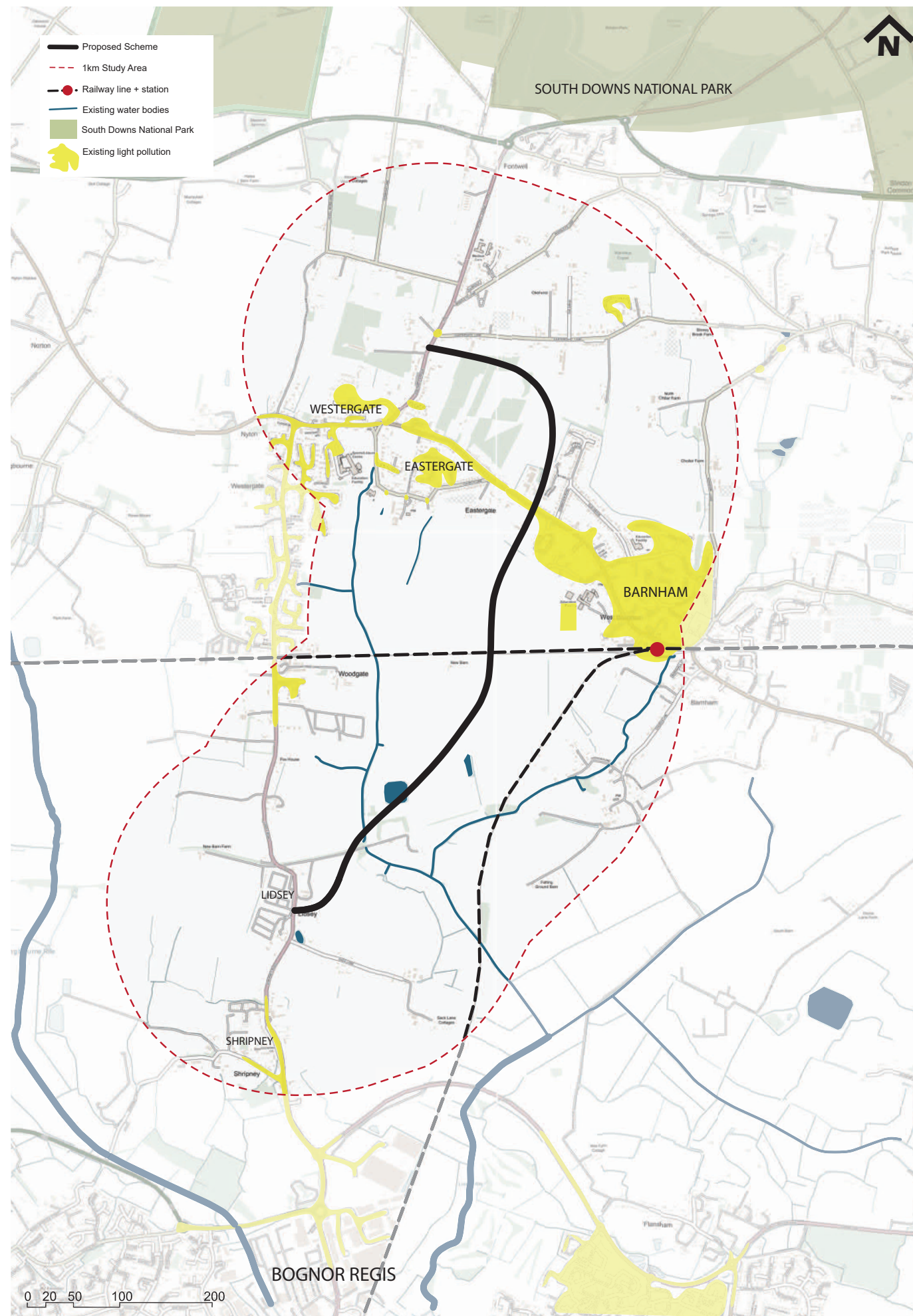


Figure 8. Pollution



## Health and Wellbeing

### Overview of Requirements and Aims

Trees can have a positive impact on health – a 10% increase in urban green space can postpone the onset of health problems by up to 5 years<sup>30</sup>. Conditions affected include asthma, skin cancer, and stress-related conditions. Trees can also aid concentration and enhance learning skills/social functioning in children. Roadside planting encourages careful driving and can help reduce incidences of speeding, as well as potentially reducing crime levels in urban areas<sup>31</sup>.

Good green infrastructure links to connect people to green space, facilities and workplaces can help to promote a healthy lifestyle and reduce stress levels, as can proximity to water. According to guidance by the RSPB<sup>32</sup>, drainage schemes have the potential to be a range of landscape features that are not only good for wildlife and water management, but also very good for people. Research has proven that being close to water, listening to the sound of water or watching wildlife on the water can all have a huge impact to health and well-being. It can reduce stress, lower heart rates & reduce blood pressure. Interacting with the water can be therapeutic and providing spaces for being still and quiet, surrounded by green space, can be just as important to health and well-being as space for physical activities and exercise.

### Baseline Assets: Pollution

As noted within the Bognor GI strategy, a lack of access and proximity to high quality green space can be associated with poor health and wellbeing outcomes for communities, linked both to poor physical health and mental health. Areas surrounding Barnham and Westergate have significant levels of poor health within the district. People of all ages, abilities and from all backgrounds should feel safe and comfortable on foot and cyclepaths, ideally through creation of a high-quality cycle lane separated from the main carriageway.

### Design Opportunities: Study Area

Potential opportunities within and around the Proposed Scheme include:

- Create & maintain links to allow the community to connect and enjoy the surrounding countryside and GI assets.
- Establish a consistent & safe off-road route as a mixed-use sustainable transport link for recreational use & commuters. Cycle parking and facilities should be included.
- Ensure new development or highways do not become a physical barrier between communities and the countryside. There is growing evidence that connecting people to a green environment can support better physical and mental health.
- Provide numerous crossing points along the route, such as to tie in with existing PRowWs as well as other key cross points identified for potential future off road links. Crossings should be suitable for pedestrians, cyclists and equestrians. It is important that all crossing points can accommodate all non-vehicular traffic to ensure that the Proposed Scheme does not become a physical barrier to some.
- It's important that pathways are welcoming and encourage people to use them. A green buffer between the pathway and the carriageway helps to create a safer and more enjoyable environment for pedestrians, cyclists and equestrians. The use of a variety of planting such as meadow grass, trees, shrubs, hedgerow and above ground drainage features can all be used to create a diverse and pleasant environment whilst separating people from traffic and helping to reduce air pollution.
- Peaceful green space with areas to sit and rest can be a facility for improving mental well-being. These rest spaces can also help those less physically able to get out and use the route to exercise. Placing seating at strategic locations along the route can assist those who can't walk long distances in one go.
- The width of pathways should be a minimum of 3m where they are multi-use, to accommodate pedestrians, cyclists and equestrians comfortably without one having a negative impact on another.
- Pathways should be locally widened to accommodate seating. Adding trees within the broadened hard landscaping / seating area would also allow people to sit beneath the trees.

### Specific Design Opportunities: A29 Phase 1

In relation to the Phase 1 Site, opportunities include:

- Ensure at-grade crossing points (for pedestrians, cyclists and equestrians) are located where existing PRow are located, as well as ensuring connections into adjacent existing and proposed residential areas.
- Maximise the use of water in the landscape design.
- Create pocket green spaces with seating along the route for people to rest & enjoy their environment.
- Pathways should be kept clear of street furniture and clutter with lighting kept adjacent to the kerb.
- The safety of the route should also be considered through the use of pedestrian scale lighting for the entirety of the route and maintaining a visual connection with neighbouring proposed residential areas to increase natural surveillance.

30 Greenblue Urban, 2016, Benefits of Urban street Trees. Available at: <https://www.greenblue.com/wp-content/uploads/2016/05/Benefits-of-Urban-Trees.pdf>

31 Greenblue Urban, 2016, Benefits of Urban street Trees. Researchers have discovered reductions in both violent and petty crime, including domestic violence in locations with mature urban tree planting.

32 Graham, Day, Bray & Mackenzie, 2012, Sustainable drainage systems. Maximising the potential for people and wildlife (RSPB, WWT)



## 4.0 A29 Phase 1 Green Infrastructure Strategy

### Overview

This chapter takes the findings of the previous chapter and defines in more detail how the Proposed Scheme can be designed to achieve a high-quality GI corridor for the district.

GI should be a key component for the design of the Proposed Scheme in order to help integrate the Proposed Scheme with the surrounding countryside, conserve the strategic gap to avoid the coalescence of the surrounding settlements whilst providing an asset for adjacent existing and proposed communities and the environment.

The Proposed Scheme will also form a key section in a GI link between the coast at Bognor Regis with the SDNP, becoming part of a larger connection of regional importance.

The Scheme will contribute to the health and wellbeing of the district's residents together with providing space for features of nature conservation importance. The robust network of GI will enable the surrounding communities to respond to the impacts of a changing climate through the sustainable management of water, conserving air quality and encouraging sustainable modes of transport.

### The Strategy

#### Access Links and Access to Recreation

As outlined in Section 3 above, the key design opportunities in relation to access and movement include:

- New provision for footpaths, cycle paths and bridleways by including a path alongside the whole A29 Phase 1 route alignment.
  - » Active Travel Opportunities: new paths.
  - » Variation in visual amenity and character along the Proposed Scheme.
- Maximise pedestrian and cycling connectivity to the existing PRow network, GI assets and surrounding communities.
  - » Create improved links & connections between existing GI assets and planting features.
  - » Maximise pedestrian and cycling connectivity to the existing PRow network and surrounding communities.
  - » Provide sustainable links to key transport nodes.
  - » Create inclusive junctions that can accommodate pedestrians, cyclists and equestrians.

These are considered more fully below.

#### Design Opportunity: New provision for footpaths, cycle paths and bridleways

##### Active Travel Opportunities: new paths

It is essential that opportunities are taken to create safe and enjoyable green corridors for active travel. This acts to promote health and well-being and may also improve local air quality through reduced car use.

Connections are key to encouraging the highest number of people to use sustainable transport, linking up residential areas with a network of paths which are suitable and safe for different types of users. In addition, by encouraging walking and cycling, GI can help reduce air pollution from transport whilst reducing levels of poor health associated with inactivity.

A safe, pedestrian and cycle route along the length of the Proposed Scheme will strengthen links between urban areas, particularly the proposed new communities to be developed between Eastergate and Barnham, and their surrounding countryside. As part of a wider network of routes, the Proposed Scheme will act to sustainably connect the coast with the SDNP. This is hugely beneficial in bringing the natural world into every neighbourhood, providing benefits for individuals and hence community health and well-being. There is growing evidence that connecting people to a green environment can support better physical and mental health.

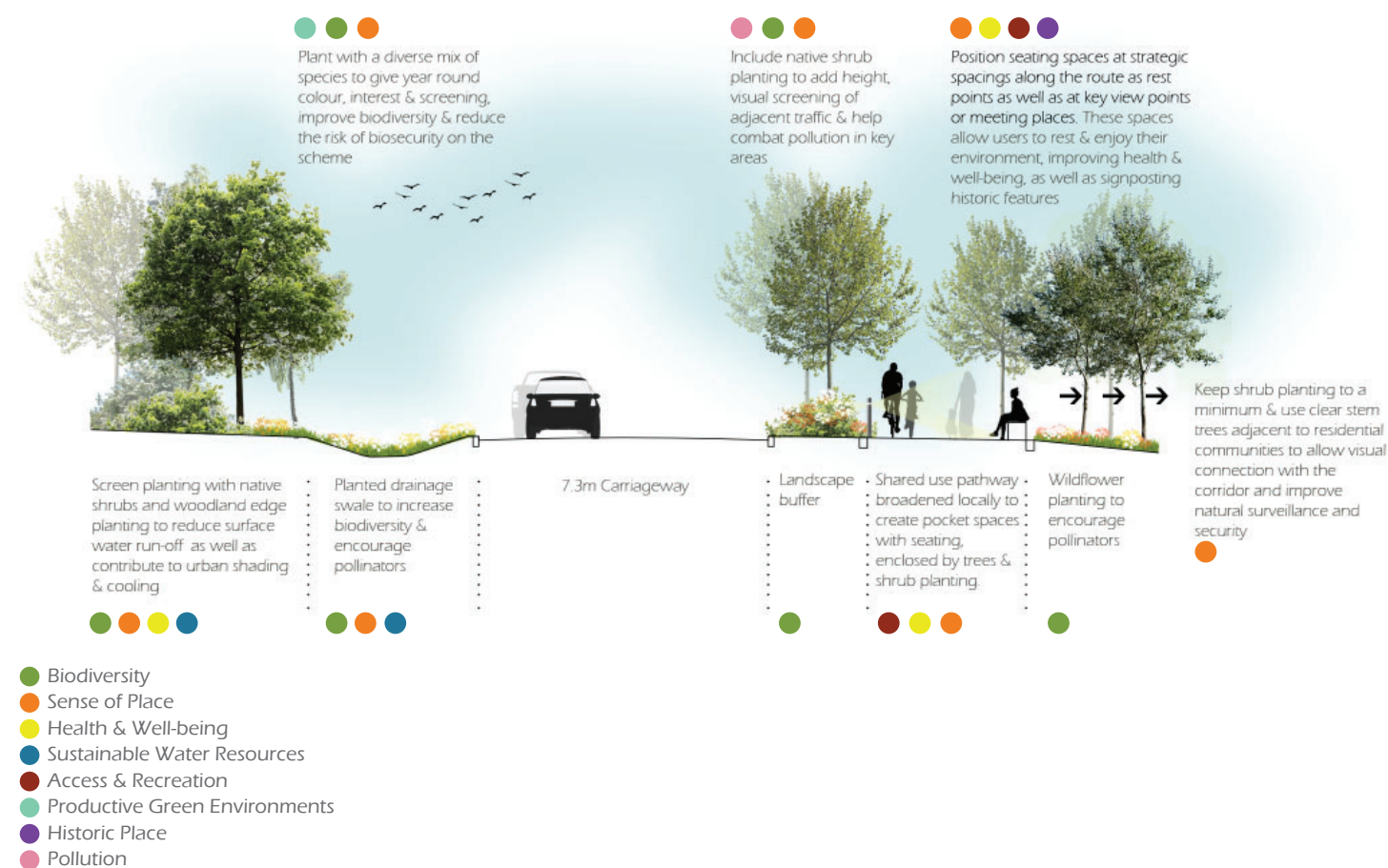
##### Variation in visual amenity and character

Creating a green buffer between pedestrians and cyclists and the traffic on the Proposed Scheme will help to encourage users and create a more enjoyable space for people to use. This can be created through a variety of planting types for example wildflower areas, swales, tree planting and hedgerows, or a variety of combinations.

Variety of greenspace design is important since the route is long and linear and as such has the potential to lack interest. The width of the green buffer should therefore vary along the route, occasionally bringing users a little closer to the carriageway and also creating wider buffers in places to create larger pockets of green space. This variety of greenspace can also be created through a varied design of SuDS features.

The creation of a number of pocket greenspaces along the length of the Proposed Scheme will allow for people to rest and enjoy being in greenspace in a few key locations. The location of these areas may be linked to key viewpoints, for example of the SDNP, or linked to connections with existing PRow or SuDS features such as around proposed drainage ponds.

The inclusion of benches within these areas to encourage users to sit, rest and enjoy their environment is important and can provide a simple yet valuable resource to users, impacting on user's well-being.



#### Create improved links & connections between existing GI assets and planting features

The 'green network' approach takes a more holistic view of greenspace and emphasises the importance of high-quality links between assets rather than looking at individual spaces in isolation. Quality of life for local residents may be positively affected by improving access to existing areas for recreation, play and leisure. This includes providing pleasant walking and cycling routes to play areas and parks as well as sports facilities and also long-distance routes in the area.

Green spaces, both existing and proposed, provide space for exercise, social interaction and play which benefits residential communities greatly. Providing green routes for walking and cycling to connect up these assets not only provides opportunities for people to lead healthier lifestyles by using the routes but also encourages the use of the green spaces themselves. Linear landscape features such as hedgerows should be designed along these connections to create more pleasant recreational routes whilst also benefitting wildlife.

In addition to conveying significant benefits to local people green networks also provide a broad suite of less tangible benefits. They are critical in maintaining and enhancing habitat connectivity for sensitive species, enabling them to migrate and respond to threats in their environs, particularly due to the effects of climate change.



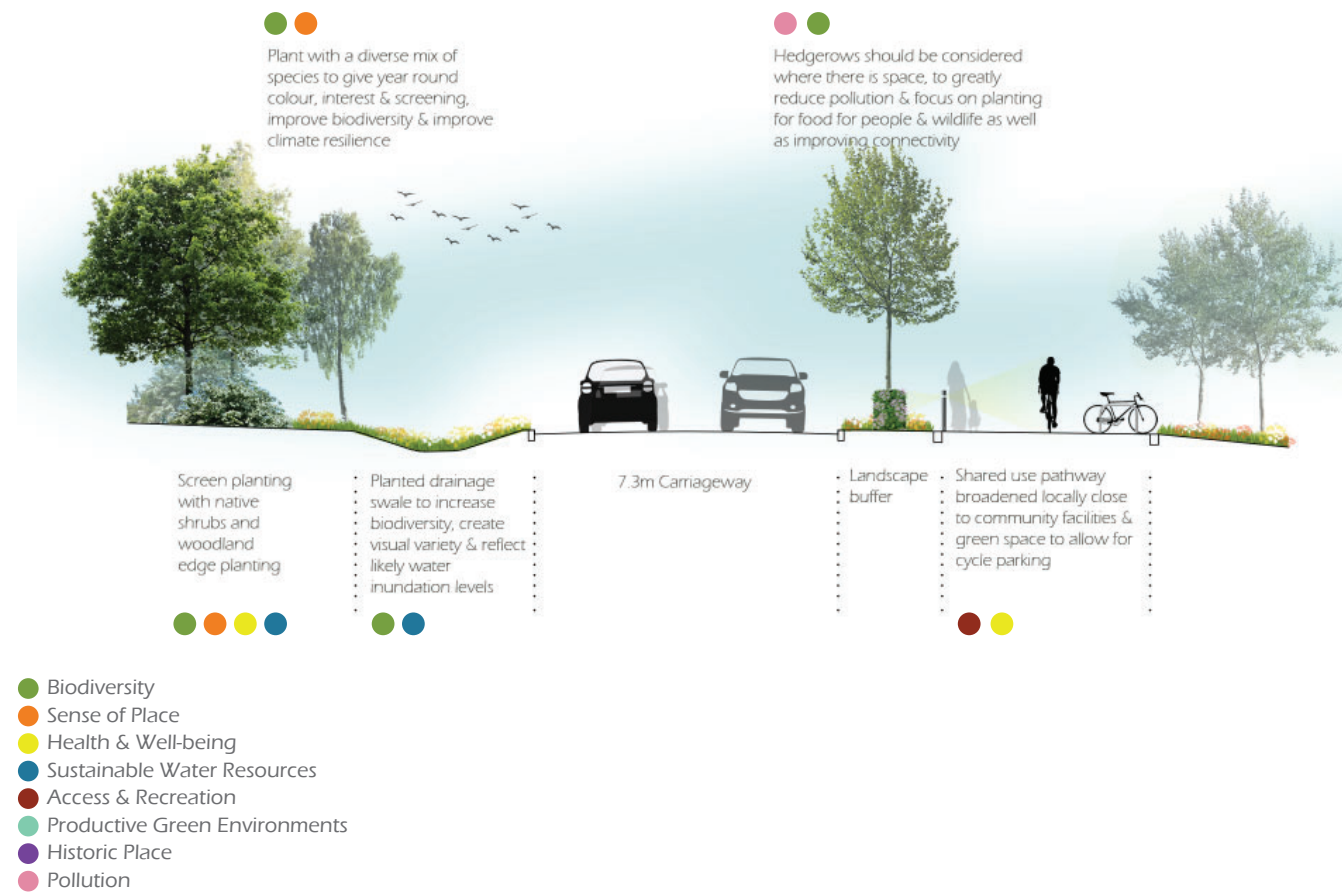
Maximise pedestrian and cycling connectivity to the existing PRow network and surrounding communities

There are three PRow which cut across the Proposed Scheme. These routes are well used and valued by the community and allow residents to connect with the countryside around them as well as linking residents to the neighbouring villages and their facilities. It is essential that these routes are celebrated within the design of the Scheme & that the new road doesn't create a barrier to these routes.

In addition, there are plans or aspirations for many of the existing footpaths to be upgraded (for example broadening and surfacing), to be able to accommodate equestrians and cyclists and working on these assumptions would be good practice to ensure the design of the Proposed Scheme is future proofed.

The legibility of these PRow where they meet the Proposed Scheme could be maximised with broad, inviting entrances. The addition of wayfinding signage can increase usage by highlighting the routes and illustrating that routes provide connections through to Eastergate or Barnham villages or schools for example.

There are a number of schools within easy walking distance of the Proposed Scheme. Providing safe routes to allow and encourage residents to walk or cycle to school can have a huge impact on children's health and well-being and can set up good habits and impact on health later in life. The combination of a green link along the Proposed Scheme to connect with the existing PRow will allow existing residents, as well as those in proposed new developments, to easily access Barnham Primary School, St Philip Howard Catholic School, Eastergate CE Primary School and Ormiston Six Villages Academy.



Provide sustainable links to key transport nodes

Barnham train station is within 1 km of the Proposed Scheme & the neighbouring proposed residential developments. Connections between existing and proposed residential areas and Barnham train station (including proposed east-west route for pedestrians, cyclists and horse riders along both sides of the railway line) should be considered to encourage residents to walk or cycle. These sustainable transport links can have a huge impact on the health of the environment as well as the health and well-being of the users. Off road routes along the existing A29, a green link along the north of the railway line and existing PRow can form part of a larger traffic free route to Barnham Station. It is vital that the green link along the Proposed Scheme can be connected with these railway routes in the future.

Create Inclusive Junctions

It is also vital that junctions between the Proposed Scheme and the existing road network are designed to prioritise pedestrian and cycle movement. These junctions should not become a barrier to pedestrians and cyclists. Connections between the Proposed Scheme and existing footways along the A29 Fontwell Avenue, Barnham Road and the A29 Lidsey Road need to be well considered. The crossing point at Barnham Road will also be key in ensuring that the continuous, green link along the Proposed Scheme is achieved and successful.

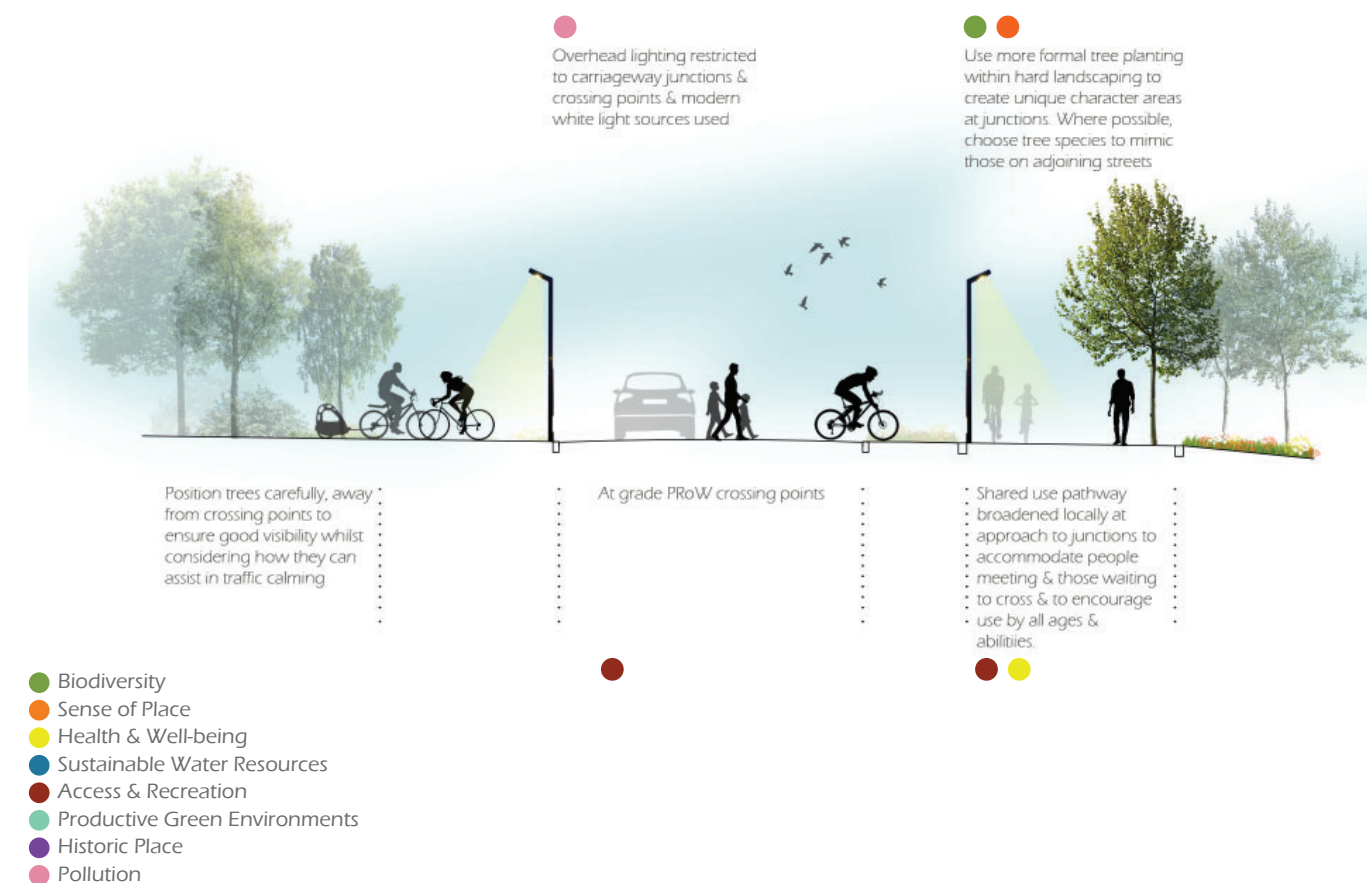
Where the PRow cross the A29, crossings should be at-grade crossings to put priority on sustainable transport links. The crossing points should be broad to accommodate all modes of sustainable transport safely (including equestrians) and should be defined and highlighted in a different paving material to the rest of the carriageway. Having a raised road platform for the crossing point allows for ease of use for all whilst also slowing traffic at these key areas.

Trees (existing or proposed) should not be located adjacent to crossing points and they should be carefully placed in the approach to ensure that visibility is good for pedestrians, cyclists and drivers on the immediate approach. However, use of trees to reduce forward visibility and for horizontal deflection can assist in traffic calming, and consideration of different methods should be given such that pedestrians, cyclists and equestrians feel safe and comfortable using the crossings and connecting paths.

Arun District Bridleways have suggested upgrading FP 318 to a bridleway and recommended that the provision of an underpass where it crosses the new A29 would be most suitable. However, a Pegasus crossing should be considered to allow for pedestrians, cyclists and horse riders from FP 318 to cross over the B2233 to Church Lane, Eastergate. Given the recommended 30 mph speed limit, it is considered that at-grade crossings would be suitable.

A suitable crossing (and potentially consideration of a footbridge) where the Proposed Scheme crosses FP 321 should also be considered to provide a safe route for local school cycling and walking routes to St. Philip Howard Catholic High School and Ormiston Six Villages Academy.

Another existing barrier to movement north to south is the West Coastway railway line. Any bridge to cross the railway line should be designed to be suitable and usable by pedestrians, cyclists and horse riders. Any footway/cycleway or bridleway will need to tie into suitable infrastructure on either side of the bridge, and the bridge itself will need to be wide enough with sufficient parapet height for all users.



## Conserving and Enhance Biodiversity ●

As outlined in Section 3 above, the key design opportunities in relation to Biodiversity include:

- Design for connectivity and value of habitats: woodland, hedgerow and ecological corridors.
  - » Manage/maintain boundary hedgerows, including 'gapping up' where necessary with varied species.
  - » Incorporate new hedgerow planting along the Proposed Scheme to connect to adjacent/existing features.
- Design for multifunctional use.
  - » Width of the Proposed Scheme.
  - » Separation of uses.
  - » Screen planting.
- Design for celebrating and protecting existing features.
  - » Traditional orchards.
  - » Hornbeam hedge.
  - » Mature trees.
- Design for maximising Biodiversity and BNG.
  - » BNG principles.
  - » Use of water management features.
  - » Native species.
  - » Pollinator Species.
- Design for appropriate management.
  - » Mowing regimes.
  - » Plant selection.

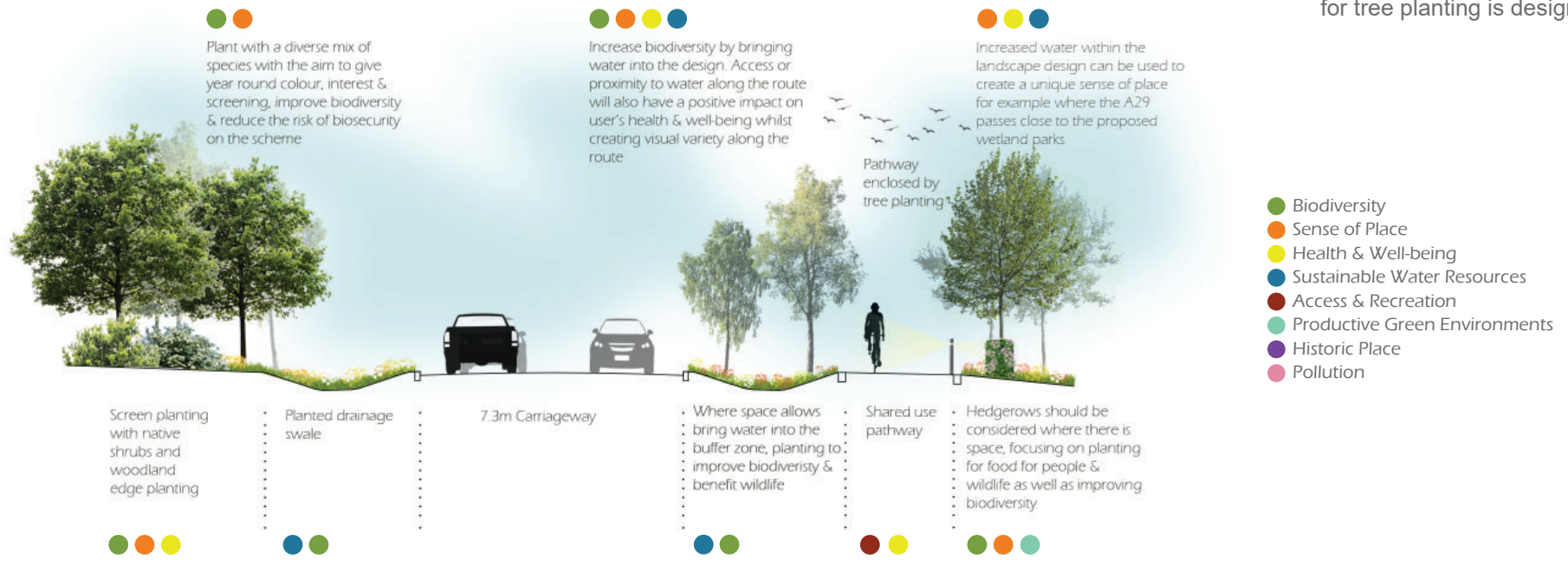
These are considered more fully below.

### Design Opportunity: Design for connectivity and value of habitats

Hedgerow and woodland connectivity should be increased through additional planting and should be designed to link up with existing and proposed open spaces, hedgerows and ecological corridors. Early, advance planting may help to divert and create alternative routes for wildlife to replace those that have been lost. Opportunities should be taken to supplement existing hedgerows with additional native mixed species planting, especially to fill any gaps.

As well as hedgerows and riparian habitats, linear rain gardens and even un-mown grass verges all have the potential to act as wildlife corridors.

A key new ecological corridor is proposed within the Bognor Regis GI Strategy to provide an access route for North / South movement of wildlife between the coast and SDNP. The Proposed Scheme should consist of a mixture of habitats, in keeping with the range of landscape characters it passes through. Where this green corridor crosses the Proposed Scheme, it is important that the traffic barrier is kept to a minimum.



## Design Opportunity: Design for multifunctional use

### Width of the Proposed Scheme

The width of planting should vary to provide interest as well as increasing opportunities for BNG and achieving a sense of place along specific sections of the Proposed Scheme. Where the width of planting is broad, opportunities should be explored to incorporate ornamental shrub planting to improve biodiversity as well as hedgerows to provide food for people and wildlife and improving connectivity. The height of planting can be altered where feasible to enable natural surveillance and views or provide a sense of enclosure.

### Separation of uses

Crossing points and junctions will be shared use for pedestrians, cyclists and equestrians whilst the shared use pathway will be for pedestrians / cyclists. Variations in planting palettes will be considered at crossing points and junctions with trees strategically sited to enable visibility whilst introducing traffic calming measures to increase driver awareness and a reduction in speeds.

### Screen planting

Areas of planting for screening can be valuable as part of wider wildlife networks. Screening should be designed to appear natural in the existing landscape with a mix of coniferous and deciduous trees, understorey and ground flora to aid screening. Areas of scrub should extend beyond woodland areas aiding low level screening.

## Design Opportunity: Design for celebrating and protecting existing features

Of particular ecological value within the Proposed Scheme is the area of orchards and the historic Hornbeam hedge which are listed within the priority habitat inventory. Both of these will be cut through by the Proposed Scheme but care should be taken to ensure the minimal loss of trees in this location. The footprint of the Proposed Scheme should be kept to the absolute minimum and endeavours made through design to avoid the removal of significant trees.

Those trees which can be retained should be adequately protected prior to any works commencing to prevent any unnecessary tree damage or loss caused by, for example, root damage from over run from heavy construction vehicles. Temporary fencing should be erected around trees to be retained at the outer limits of the root protection area (RPA). Fencing should be at least 1.2 metres high cleft chestnut pale (or alternatively chain link), well braced to resist impacts. It is also important that it is ensured that fencing is maintained throughout development. In addition, the ground within the fenced area should not be used for site roads, site offices, vehicles or storage.

Trees are proven assets, delivering environmental and other services. The design of the Proposed Scheme should consider the placing of trees early in the design to ensure that they are not eliminated due to clashes with proposed services. Trees are an integral part of the built environment, affecting communities ecologically, socially, economically and physically and also benefitting human health. It is essential to build tree planting into the standard requirements for development to ensure space for tree planting is designed for.



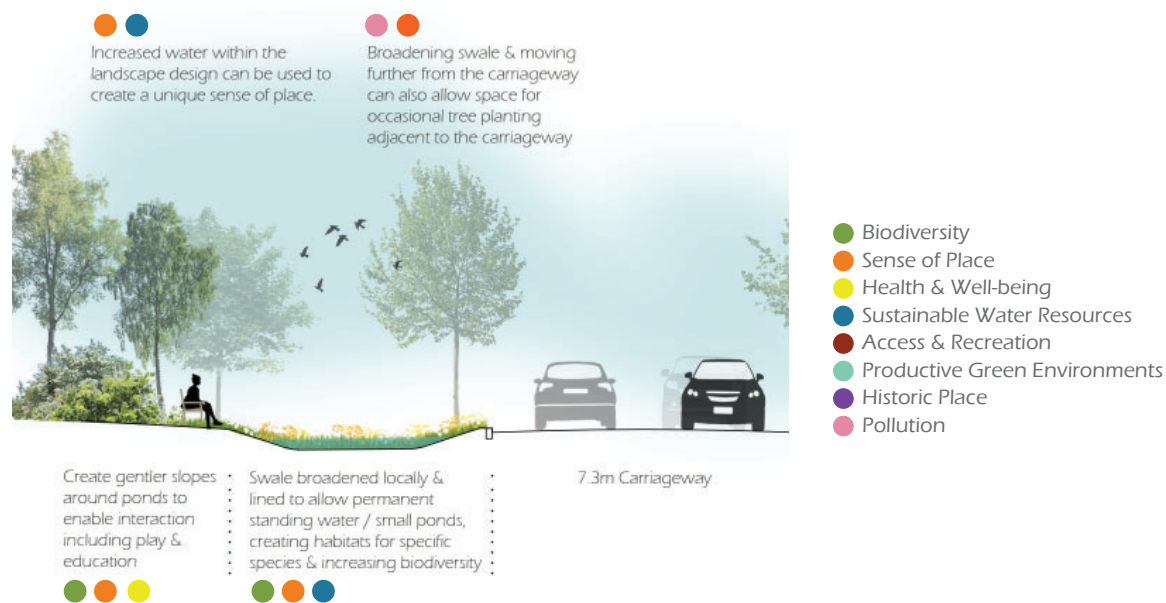
## Design Opportunity: Design for Biodiversity and Biodiversity Net Gain

### Biodiversity Net Gain principles

The Proposed Scheme should achieve a BNG. BNG is a process applied to development proposals to secure a positive outcome for biodiversity. The process itself follows the mitigation hierarchy, which sets out that everything possible must be done to firstly avoid, secondly minimise and thirdly restore / rehabilitate losses of biodiversity on site. As a last resort, residual losses are compensated for using biodiversity offsets, which are distinguished from other forms of mitigation in that they are off the development site and require measurable conservation outcomes. It is anticipated that mitigation hierarchy can be followed for the Proposed Scheme and that this last resort will not be necessary. The design proposals for the Proposed Scheme should be revisited, if necessary, until a BNG is achieved.

### Design for biodiversity within water management features

Mandatory elements, such as drainage design, can and should be capitalised upon to benefit biodiversity. SuDs features should be varied to create a diverse mix of habitats and planted up with a combination of marshy grassland and marginal planting selected to suit the conditions and water attenuation levels.



### Design with native planting palettes

In general, plant species should be context-sensitive and in keeping with local species. Trees should be of local provenance where possible, particularly in areas adjacent to agricultural fields and other native habitats.

Tree species should be selected that are suitable for the Site whilst also contributing to the resilience (diversity) of the wider tree population. A varied planting palette is key to creating a resilient landscape plan. New pests and diseases are continually being introduced to the UK with the potential for different tree species to be affected. A narrow planting palette increases the risk for large numbers of trees on Site being affected and wiped out. For example, avenues of a single species of tree should be avoided.

A variety of planting sizes can also be used to create a dynamic environment, including larger trees in specific locations as well as native 'pioneer' species.

The traditional land use in the area of orchards may provide an exception, allowing a diversion from native planting in carefully selected areas along the Proposed Scheme. This emphasises the sense of place and character of the area.



Design for Pollinators

The Government's National Pollinator Strategy for England (2014) sets out a 10 year plan to help pollinating insects survive and thrive across England. The Strategy recognises the importance of pollinators to the health of our environment and outlines actions to support and protect the many pollinating insects which contribute to our food production and the diversity of our environment.

On a more local level, the Pollinator Action Plan 2019-2022<sup>33</sup> was produced to acknowledge the importance of pollinators to the health of our natural environment and to raise awareness of the plight of pollinators within the region. Its aim is to ensure that the Council and residents, businesses and landowners have the information needed to act to protect and increase pollinator populations. The Action Plan sets out the following key aims for WSCC:

- Protect and enhance the amount of pollinator habitat in West Sussex to prevent extinctions and improve the status of any locally threatened species.
- Increase awareness of pollinators and their habitat needs across local residents, businesses and other landowners.
- Increase the contribution to pollinator conservation of land under the ownership of, or managed by, the County Council.
- To improve our knowledge and understanding of pollinators in our local area.

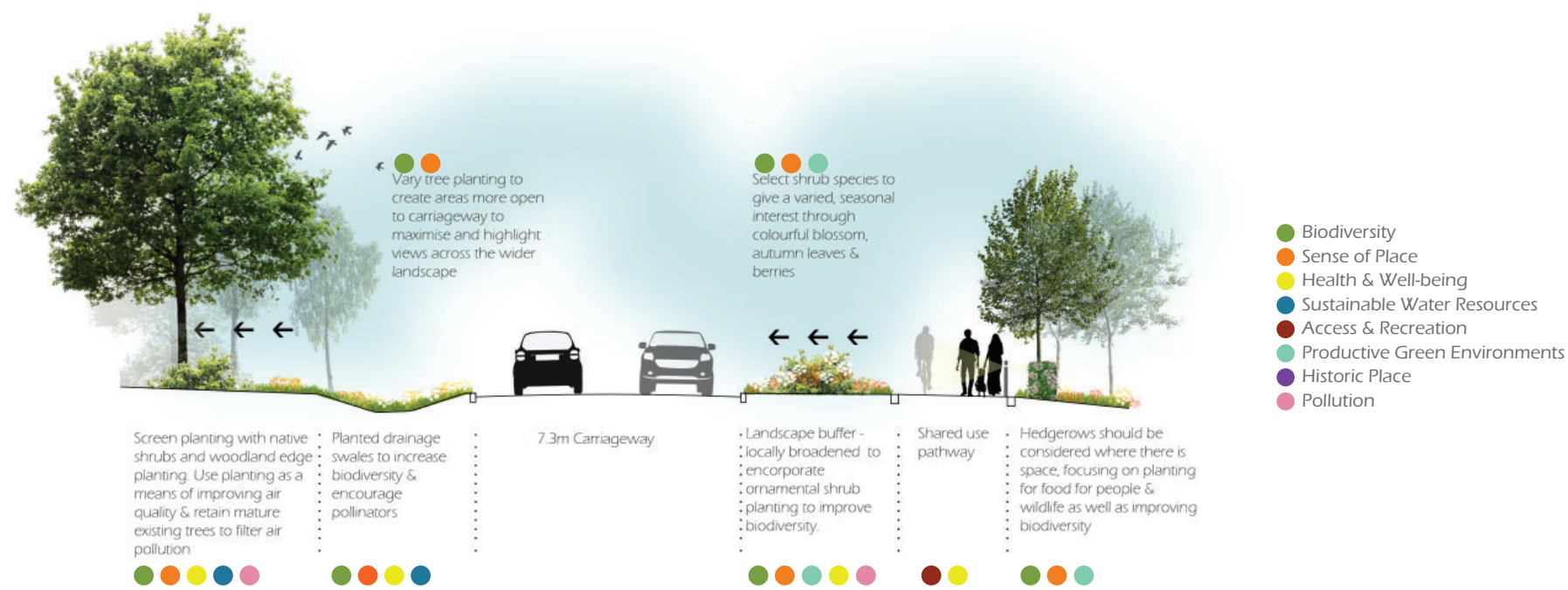
This acknowledges that pollinators across the UK are struggling due to loss of habitat & the use of pesticides. New road schemes such as the A29 have the potential to offset this by creating habitats to support pollinators.

Proposing seed mixes with an emphasis on native wildflowers, as well as tailoring maintenance regimes to allow these wildflower areas to flourish, can be extremely beneficial to local pollinators and the wider wildlife. Even small parcels of land such as narrow verges and roundabouts, often considered as leftover land within highways schemes, can be adjusted to produce habitats for pollinators rather than allocating the land to amenity grassland.

Amenity grassland should be kept to a minimum since it has low biodiversity value as well as a low value to pollinators and should only be used where necessary for visibility splays. Any other areas should have a higher species mix and maintenance proposals should be considered to benefit pollinators and other wildlife.

In addition, the Proposed Scheme can provide pollinators with food, shelter and nesting areas. Plant species proposed, for seed mixes through to tree species, should be considered for their benefit as food (nectar and pollen) for pollinators. Pollinators need food from March until September. In addition, many pollinators need other food resources to support their different life stages – for example butterfly and moth caterpillars need particular plants to feed on. Dense vegetation, such as tussocky grassland, scrub, mature trees, and piles of wood and stone, can provide essential habitat for nesting and hibernating pollinators. A variety of these habitats should be created along the Scheme.

Another objective set out in the WSCC Action Plan is to increase awareness of pollinators and their habitat needs within the local community. There is the opportunity to provide information (such as interpretation boards) within the Scheme to help educate residents and users on the value of their environment to themselves and others.



Design Opportunity: Design for Appropriate Management

Mowing regimes

A varied mowing regimes will open up opportunities to increase biodiversity as well as aiding pollinators and contribute towards a varied sense of place and seasonal interest.

Plant selection

Plants can be selected to fit with a desired maintenance regime. Consideration should be given to the programme of softworks implementation - whether plants are bare root or container grown will influence the amount of watering during the summertime. Planting heights and densities will dictate the level of aftercare provided – increased densities will achieve a more immediate effect visually but will require further pruning and thinning as plants mature. Species should be considered in response to climate resilience and maintenance.



## Sense of Place & Cultural Heritage

As outlined in Section 3 above, the key design opportunities in relation to Sense of Place and Cultural Heritage include:

- Put placemaking as the focus of the design to reinforce local character.
- Safeguard existing key habitats, ecological corridors and features to reinforce local character.
- Conserve and celebrate the character and cultural heritage of Eastergate.
- Vary the planting types and densities to enhance local character.

These are considered more fully below.

### Design Opportunity: Put placemaking as the focus of the design to reinforce local character

It is important for the design to respect the cultural and historic character of the landscape and settlements. Whilst it is unlikely that there will be opportunities to maintain or enhance historic views and vistas due to the largely enclosed nature of the Site, opportunities to signpost and celebrate existing historic features should be maximised through for instance interpretation boards. The presence of traditional orchards and the Hornbeam Hedge should be reflected through incorporation of fruit trees and Hornbeam into the planting mix, although use of non-native species should be carefully considered adjacent to areas of agricultural land to the north of the scheme where the character is more rural. Strategic planting can be used to help screen the Proposed Scheme and slightly lessen its visual impact, as well as incorporating a variety of species (including fruit trees).

### Design Opportunity: Conserve and celebrate the character and cultural heritage of Eastergate

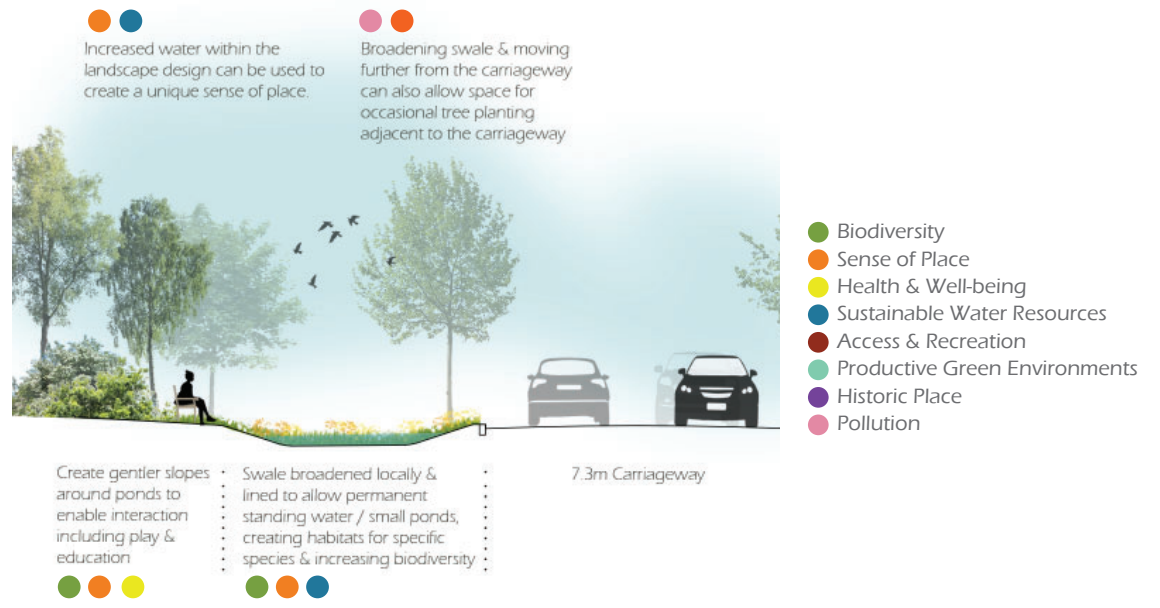
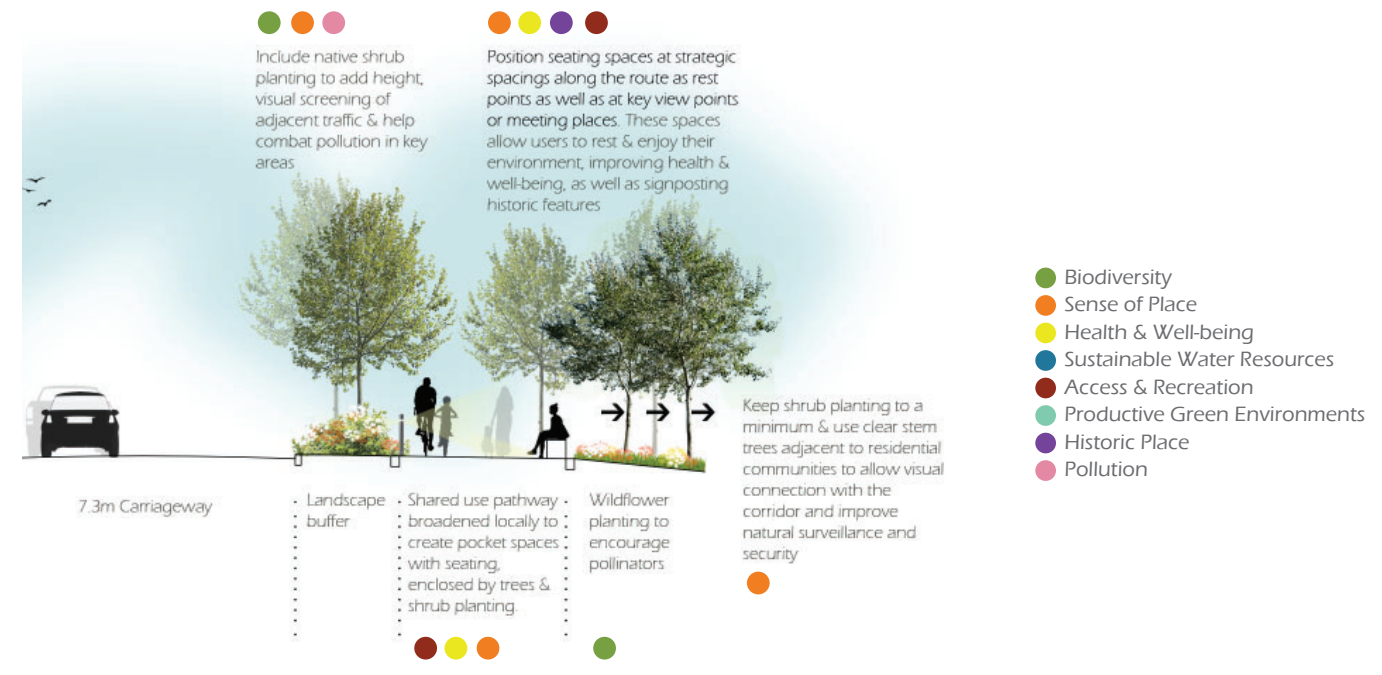
The Proposed Scheme will act as a barrier to the coalescence of the villages of Barnham, Eastergate and Westergate which will be increasingly important as building development increases in the area. Planting along the Proposed Scheme can be used to help define the urban-rural fringe.

Ensure landscape character is enhanced and reinforced through appropriate use of materials. This extends to path surfacing, way-marking and any waterways infrastructure. For example, locally distinctive architectural features should be introduced to the Scheme such as flint walls and split rail fencing. These can be used to create features at roundabouts, junctions and gateways, becoming distinctive landmarks for the area.

### Design Opportunity: Vary the planting types and densities to enhance local character

The whole route of the Proposed Scheme will pass through a variety of different landscapes, passing through rural agricultural land, new housing developments and the denser areas of existing settlements. A hierarchy of planting types, mixes and styles should be used to distinguish between more rural and more urban environments. Phase 1 is typically more rural and should therefore be more naturalistic in its planting palette and layout.

A range of planting densities and tree canopies should be specified, from continuous canopies to create a sense of enclosure, to occasional trees allowing longer views and vistas and the ability to admire a mature specimen tree over time.



### Design Opportunity: Safeguard existing key habitats, ecological corridors and features

Any existing linear green corridors should be retained and opportunities should be made to improve any corridors, supplementing and filling any gaps that have occurred over the years.

Of particular value is the historic Hornbeam hedge to the north. This historic feature should be protected during construction works. The Proposed Scheme should be designed to keep the amount of tree loss to a minimum, reducing the amount of verge at this location and locating the shared use path closer to the carriageway.

Trees in relation to design, demolition and construction - BS 5837:2012 should be adhered to, to ensure that existing trees and hedgerows are protected and there are no long term effects from the construction of the Proposed Scheme.



## Productive Green Environment

As outlined in Section 3 above, the key design opportunities in relation to Productive Green Environments include:

- Provide areas for local sustainable food as 'edible landscapes'.
- Retain/ enhance connections to productive landscapes.

These are considered more fully below.

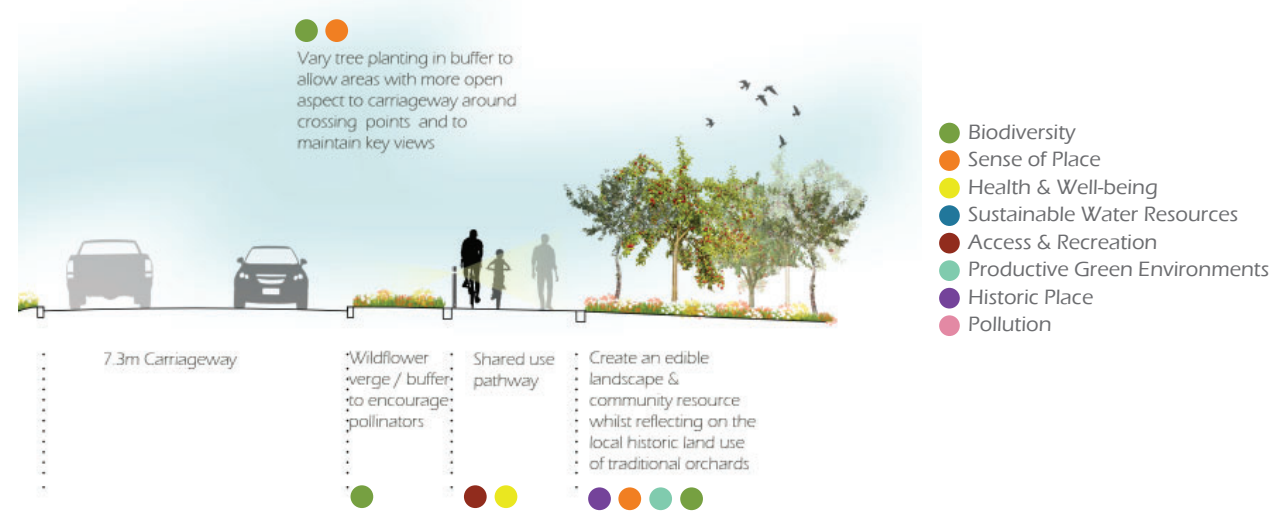
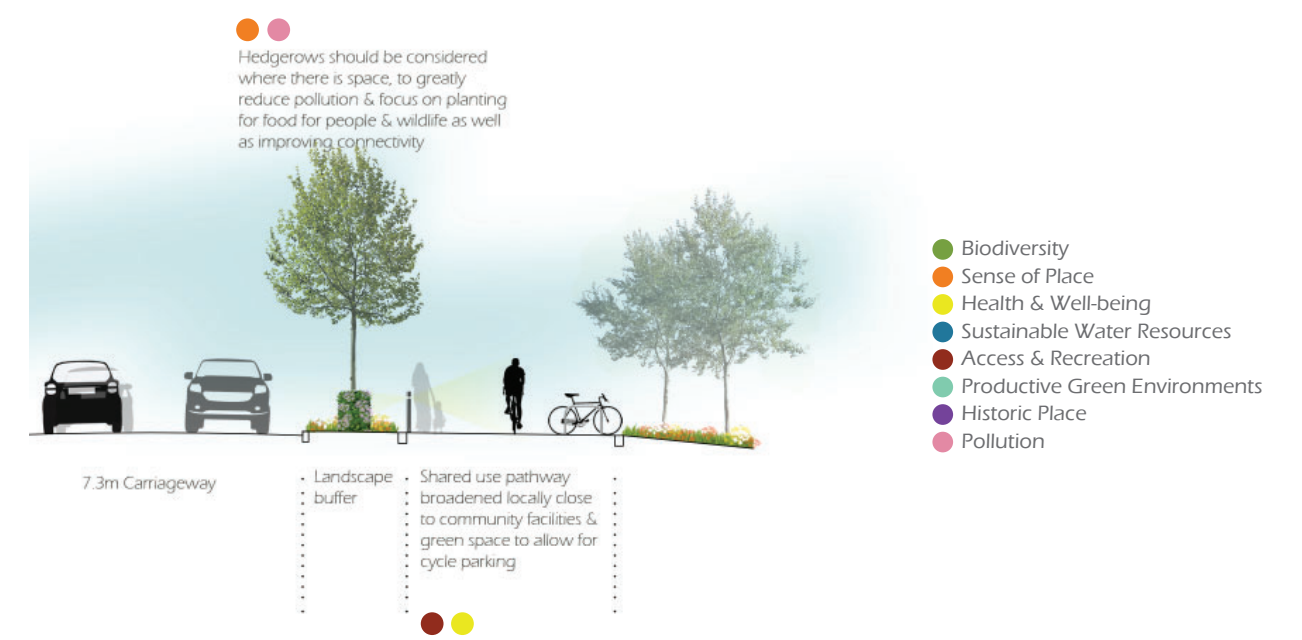
### Design Opportunity: Provide areas for local sustainable food as 'edible landscapes'

There are opportunities to provide fruit for the local community through planting fruit trees to reflect traditional orchards and the historic land use of the northern part of the Scheme. The inclusion of accessible fruit tree and shrub planting gives access to healthy, locally grown food and provides opportunities for education into food production, training into the species grown in the district and the importance of being able to produce our own food. This is a simple but unique way for people to be able to connect with their environment, see and appreciate its seasonal changes and understand its importance.

In addition, it is important to make use of native fruiting species which may often be overlooked since they are considered abundant in a rural setting. Species such as Elder (*Sambucus nigra*), Hazel (*Corylus avellana*), Blackthorn (*Prunus spinosa*), Bramble (*Rubus fruticosus*) are undervalued and under planted and yet provide an abundance of fruit and nuts which can be harvested by the community throughout the year. Having these opportunities on your doorstep allows communities to connect with nature, learn about their environment and to enjoy and appreciate it. These species provide food not only for people but also provide valuable food resources for wildlife. Any hedgerows proposed should have a focus on planting for food for wildlife and people.

### Design Opportunity: Retain/ enhance connections to productive landscapes such as community allotments

Connections to existing allotments should be considered to ensure easy sustainable links are created and / or retained between residential communities and these existing facilities.



## Sustainable Water Resources

As outlined in Section 3 above, the key design opportunities in relation to Sustainable Water Resources include:

- Design sustainable, above ground drainage features based on SuDS principles to minimise flood risk.
  - » Design with trees to aide storm water management.
  - » Climate change adaptation - design for urban heating and cooling through use of water and planting.
- Design for biodiversity.
- Design for the Community.
  - » Provide 'space for water' for the community by designing SuDS features as usable public open space.
  - » Design for interaction.

These are considered more fully below.

### Design Opportunity: Design sustainable, above ground drainage features

#### Design for SuDS

Adoptable Highway Drainage and Sustainable Drainage Systems (SuDS) Guidance Note for Developers states that WSCC has a preference for using open, soft engineering techniques for drainage. For example, designing storage ponds, balancing ponds, retention and infiltration basins along with a network of swales, ditches and infiltration strips would be the preferred approach for dealing with surface water drainage for the Proposed Scheme.

Arun's Local Plan strategic objective for water is "[t]o plan for climate change and work in harmony with the environment to conserve natural resources and increase biodiversity."<sup>34</sup> Typical benefits of above ground management of water (SuDS) include:

- Storage and slow release of water to reduce the risk of flooding, and consequential erosion downstream. Excess water can be stored in plants, soils and constructed voids, before being slowly released back into the surrounding environment through infiltration, plant up-take or controlled discharge.
- Soils, gravels and vegetation present in many forms of SuDS can act as filters to remove pollutants such as oils, metals or pesticides, before returning cleansed water to the natural environment.
- Above ground storage allows surface water to soak into the ground, preventing soils drying out, reducing run off and reducing flood risk.

#### Design with trees and other planting

The maximisation of tree planting also reduces surface water runoff and burden on the watercourse network during heavy rainfall events. This reduces the impact downstream thereby reducing the risk of flash flooding in coastal towns. The inclusion of plants and trees within drainage channels and basins is often also advantageous in slowing and storing water while providing filtration.

Allowing for sustainable water management also helps deal with effects of Climate Change, better enabling the natural environment to work effectively.

#### Design for urban shading and cooling

The inclusion of water and vegetation in the built environment can help to regulate local temperatures and to mitigate the urban heat island effect. It is essential that we design the Proposed Scheme with a future of higher temperatures in mind. The presence of both trees and water along GI links or within greenspaces will allow these spaces and key routes to continue to be used as temperatures rise.

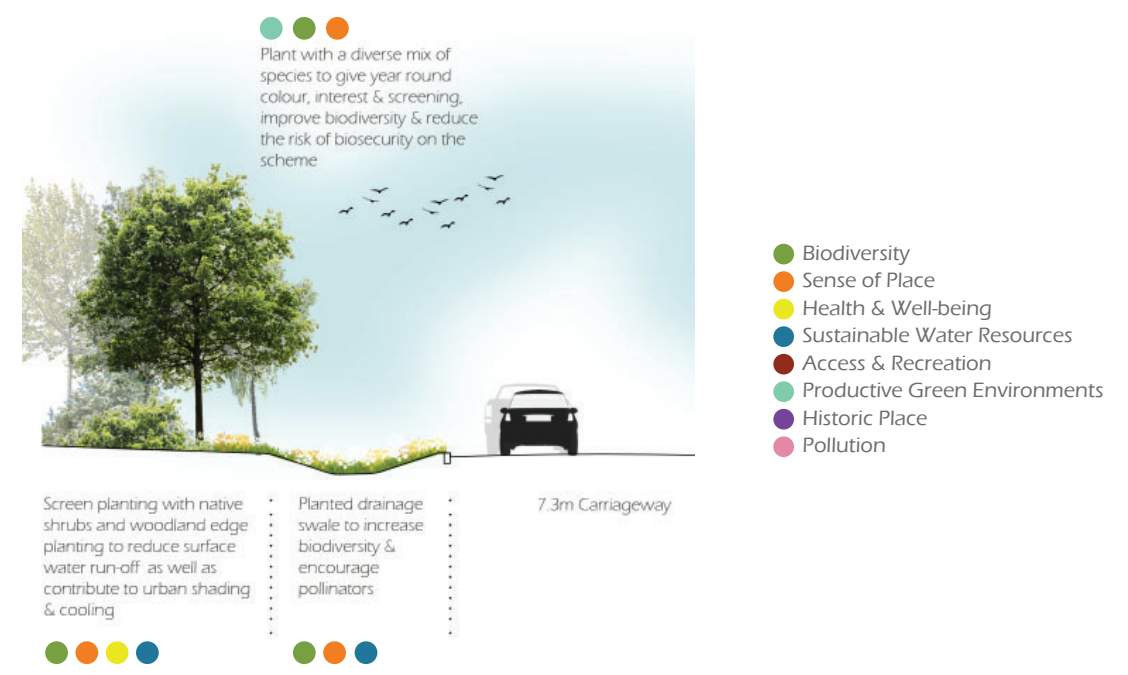
## Design Opportunity: Design for Biodiversity

SuDS offer an opportunity to maximise the value of developments, improving ecology and open green space whilst managing water more effectively. In order to capture this potential and ensure cost-effective solutions are delivered, SuDS must be considered from the very beginning of a project and integrated into the design. The Local Flood Authorities for the South East of England guidance<sup>35</sup> states that SuDS should be an integral element of all development in order to maximise benefits for biodiversity.

A variety of water bodies provides a huge range of unique habitats and sustains an array of plant and animal species. Variety is therefore key to creating valuable resources for biodiversity. As the ground water table is high around Eastergate, the potential for the creation of permanent wetlands whilst accommodating development runoff is difficult. However, a combination of temporary and permanently wet water bodies would create the most diverse range of habitats along the Proposed Scheme.

Drainage features which provide little biodiversity, such as swales which comprise of a ditch of mown amenity grass, should be avoided. Associated planting should be designed to improve the aesthetics of the drainage features, improve biodiversity, and create linear ecological corridors and new habitats.

Water features should be designed utilising a suitable selection of species tolerant of fluctuations in water levels and sufficiently varied to enable a range of habitats to be created.



34 Arun District Council, 2018, Arun Local Plan 2011-2031 (Adopted July 2018)

35 AECOM, 2013, Water.People.Places. A guide for master planning sustainable drainage into developments (Lead Local Flood Authorities for South East England)

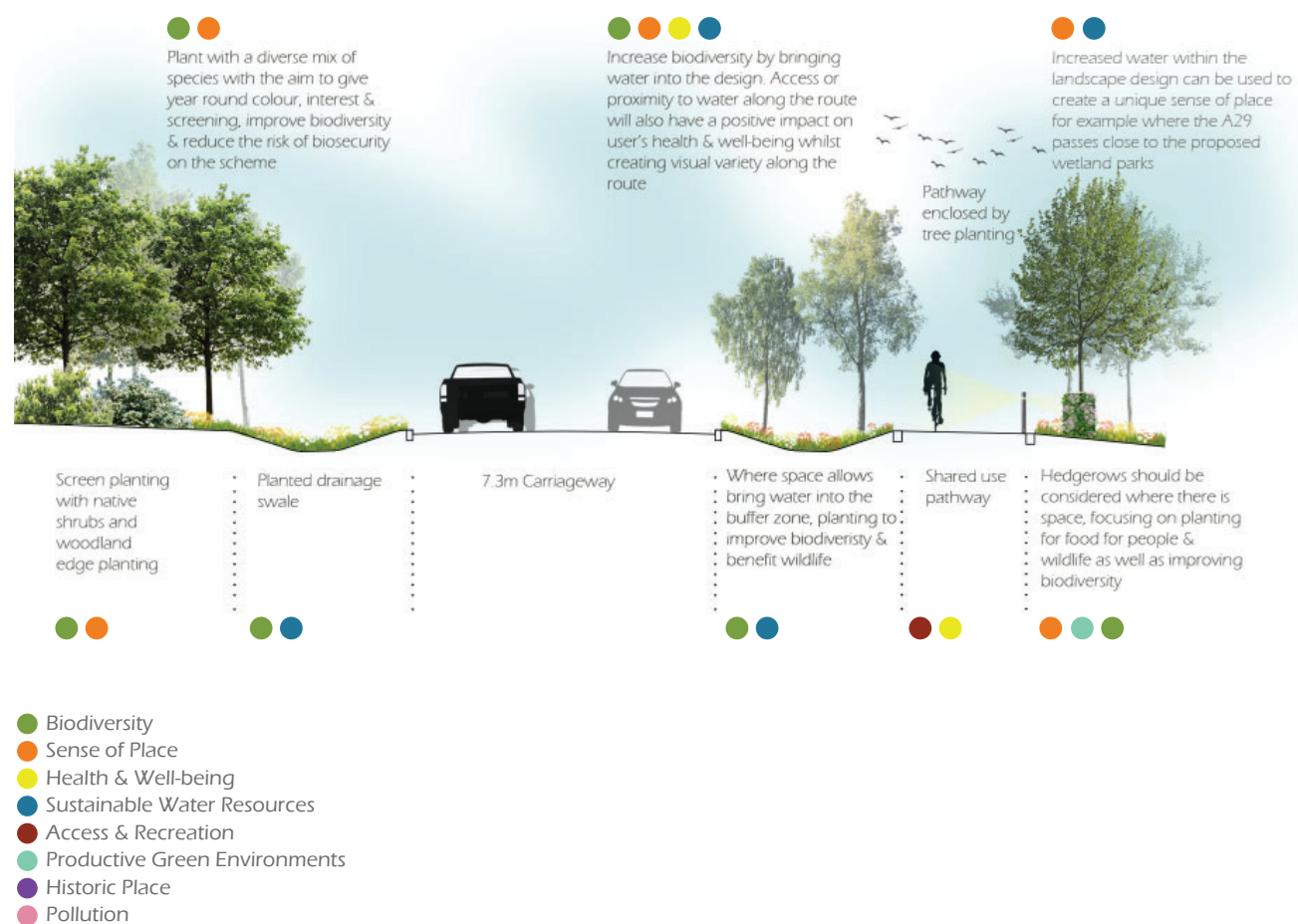
## Design Opportunity: Design for the Community

Provide 'space for water' for the community by designing SuDS features as usable public open space

SuDSs can enhance the character of the development and its surroundings. As with all good design, SuDS design should respond to context, complementing the approach taken to landscape character and urban design. In the more rural sections of the scheme, SuDS with softer edges and a more natural appearance are more appropriate.

The Local Flood Authorities for the South East of England<sup>36</sup> states that SuDS features can have additional benefits to the community. For example, designing green space and public realm with SuDS that work well when both wet and dry can provide valuable community recreational space as well as important environmental infrastructure. SuDS can also contribute to development targets for open space where they are designed to be multi-functional. Integrating SuDS with green space and street trees have all been shown to increase the desirability of an area.

There is also an opportunity for SuDS to be used to educate and engage communities about water management and to develop a greater appreciation and respect for urban water.



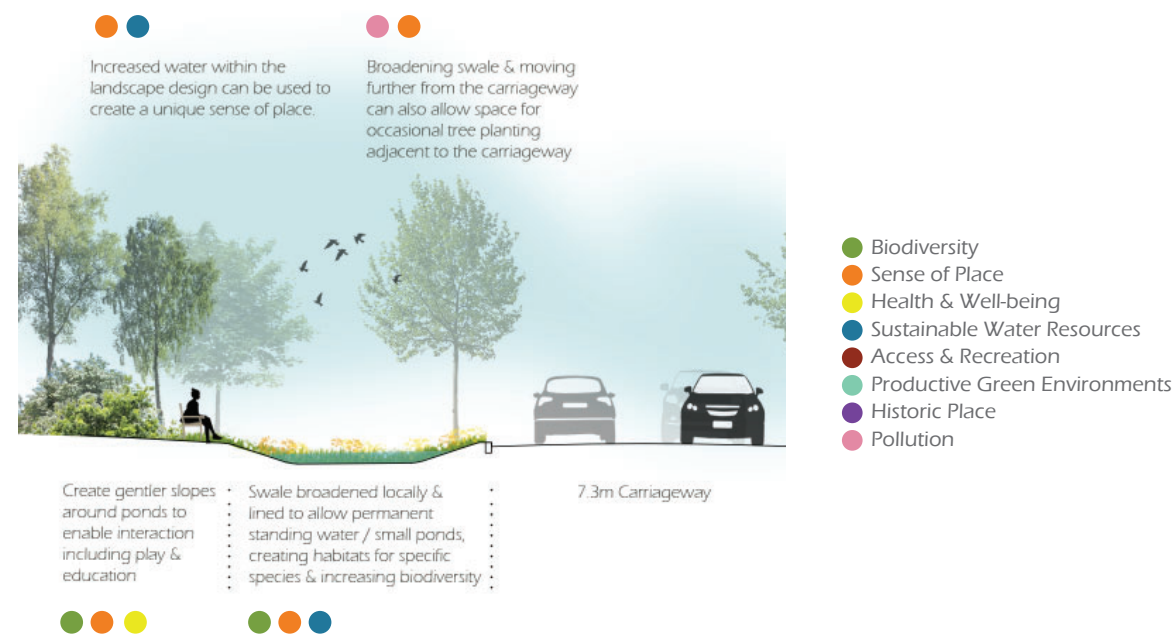
## Design for interaction

Designing gentler slopes to sections around an attenuation pond allows people to approach the water and interact with it. It allows people to get close to the plants and wildlife and feel connected to nature. For children, this allows them to be outside and play in nature; providing space for them to study and observe the wildlife and to learn about the habitats and species living and growing there. Allowing children to interact with water and use water in play can be hugely beneficial.

The same can be applied to providing interaction with smaller SuDS features. Features such as small bridges over swales and retention channels add a fun and interactive element for those using the route, encouraging users to take time out of their journey to interact with nature.

In addition, some strategic seating around the edge of an attenuation pond allows visitors to sit and view the water and the associated wildlife. Space for being still and quiet, surrounded by green space can be just as important to health and well-being as open space for physical activities and exercise.

The rational location for drainage swales is adjacent to the carriageway, automatically providing a green buffer between traffic and the shared use footway. However, diversity in the design of the swale can also be used to add interest along the route. For example, it is recommended that the width of the swale is varied along the route and key planting areas within the swale can be created with areas of bolder, larger planting. In addition, the swale could sometimes be broadened to allow the footway to pass through the middle of the swale, allowing pedestrians to be encompassed by it.



36 AECOM, 2013, Water.People.Places. A guide for master planning sustainable drainage into developments (Lead Local Flood Authorities for South East England)



# Pollution

As outlined in Section 3 above, the key opportunities in relation to Pollution include:

- Use planting as a means to improve air quality for users and residents in adjacent communities.
  - » Planting of trees and hedgerows/low level shrubs including evergreens.
  - » Retain mature trees where possible.
- Minimise light pollution through the use of low level, directional lighting to minimise light spill and glare.
  - » Overhead lighting to the carriageway should be restricted to purely around junctions and crossing points, as is the practice for the existing A29.
  - » Use of modern white light sources that filter out blue or ultraviolet light to be used for lighting columns in these locations.
  - » The off-road pedestrian and cycle path along the Proposed Scheme should have pedestrian scale lighting (such as bollard style lighting) to create a safe environment whilst keeping light pollution to a minimum.
- Minimise noise levels.
  - » Consider the use of green acoustic barriers at the southern end of the Phase 1 Site where space is limited.

These are considered more fully below.

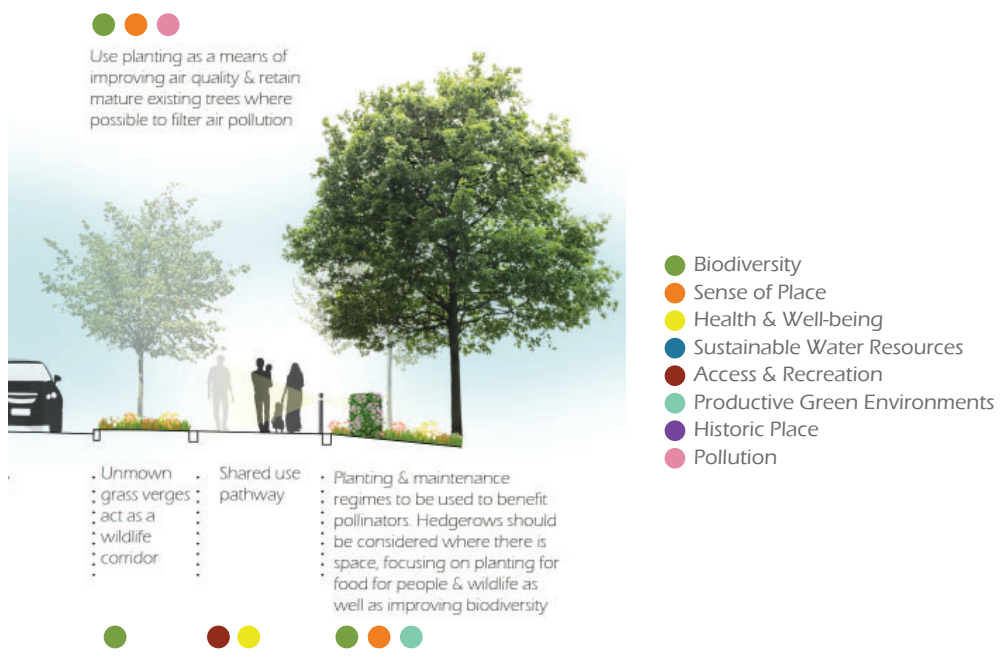
## Design Opportunity: Use planting as a means to improve air quality

### Planting of trees and hedgerows / low level shrubs including evergreens

New planting will contribute to a reduction in air borne pollutants for users and residents in adjacent communities. Opportunities exist to consider the types of trees able to withstand air pollution and agree this as part of the planting palette whilst ensuring such species marry with the surrounding environment and reflect local landscape character.

### Retain mature trees where possible

Mature trees should be retained as part of the Proposed Scheme where practicable since they will absorb much more pollution than younger, newly planted trees.



## Design Opportunity: Minimise light pollution

### Lighting to the carriageway around junctions and crossing points

Overhead lighting to the carriageway will only be sited at junctions and crossing points to improve visibility and overall safety as is the practice for the existing A29. Elsewhere the dark night skies associated with the surrounding open countryside will be respected and visual intrusion of lighting on adjacent visual receptors (particularly residents) kept to a minimum.

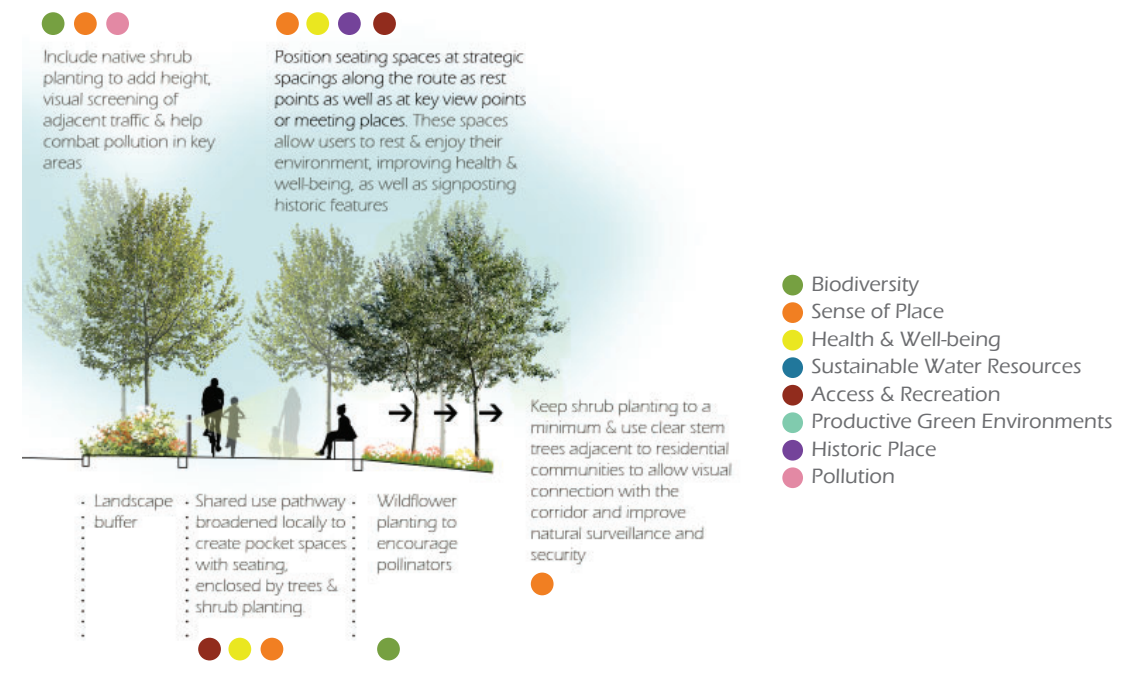
### Use of modern white light sources for overhead lighting

Only modern white lighting columns which filter blue or ultraviolet light will be used for overhead lighting at junctions and crossing points. Lighting will be pointed in a downward direction to reduce light spill.



### The off-road pedestrian and cycle path along the Proposed Scheme should have pedestrian scale lighting

Low level lighting (such as bollard style lighting with anti glare louvres) will be introduced at an agreed distance to create a safe environment whilst keeping light pollution to a minimum.



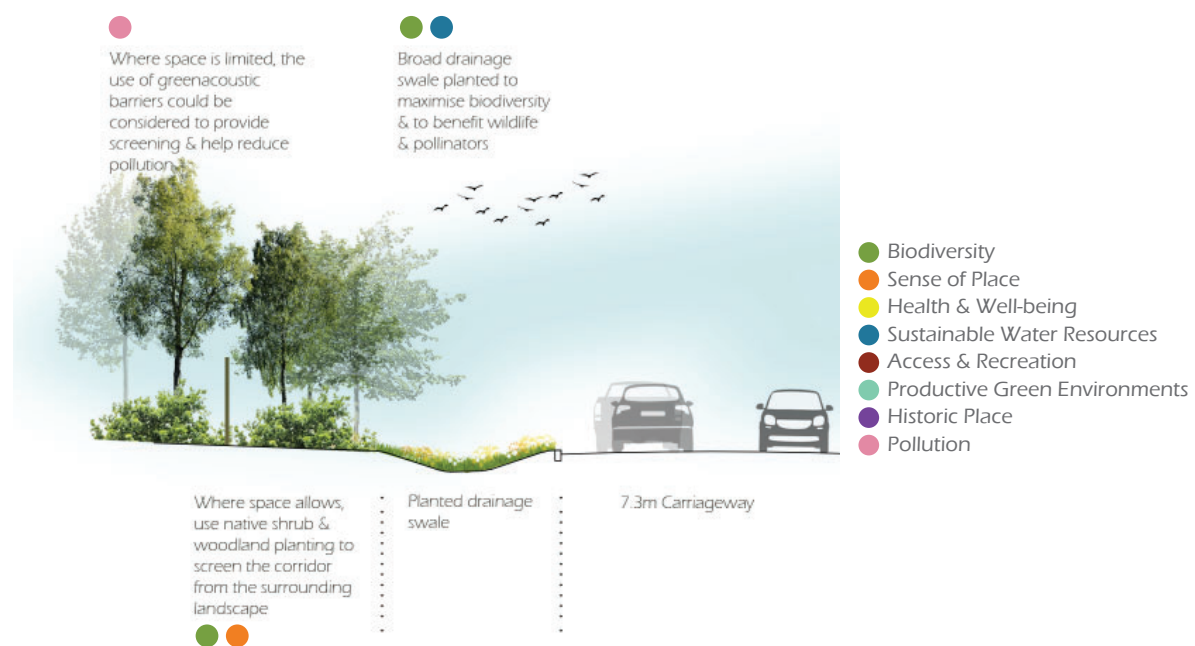
## Design Opportunity: Minimise noise levels

Consider the use of green acoustic barriers at the southern end of the Phase 1 Site where space is limited

Along the Proposed Scheme, there is a balance to be struck between the visual amenity of adjacent visual receptors (particularly residents) and users of the highway corridor - including pedestrians and cyclists.

The positioning of green acoustic barriers needs to be close to the noise source (the traffic) whilst not impinging on possible space for the adjacent paths. Acoustic barriers can be a physical separation between the Proposed Scheme and surrounding communities, so it is important to try and maintain connectivity across and through the Scheme.

Where an acoustic barrier is needed, the alignment of the carriageway should be designed to allow the maximum amount of space to the side of the carriageway where a buffer is required. This will enable planting to be used as a noise buffer or planting to act as screening to conceal an acoustic barrier. Where room allows, opportunities will be considered to introduce mounding which will reduce the overall height of the barrier.



## Health and Wellbeing

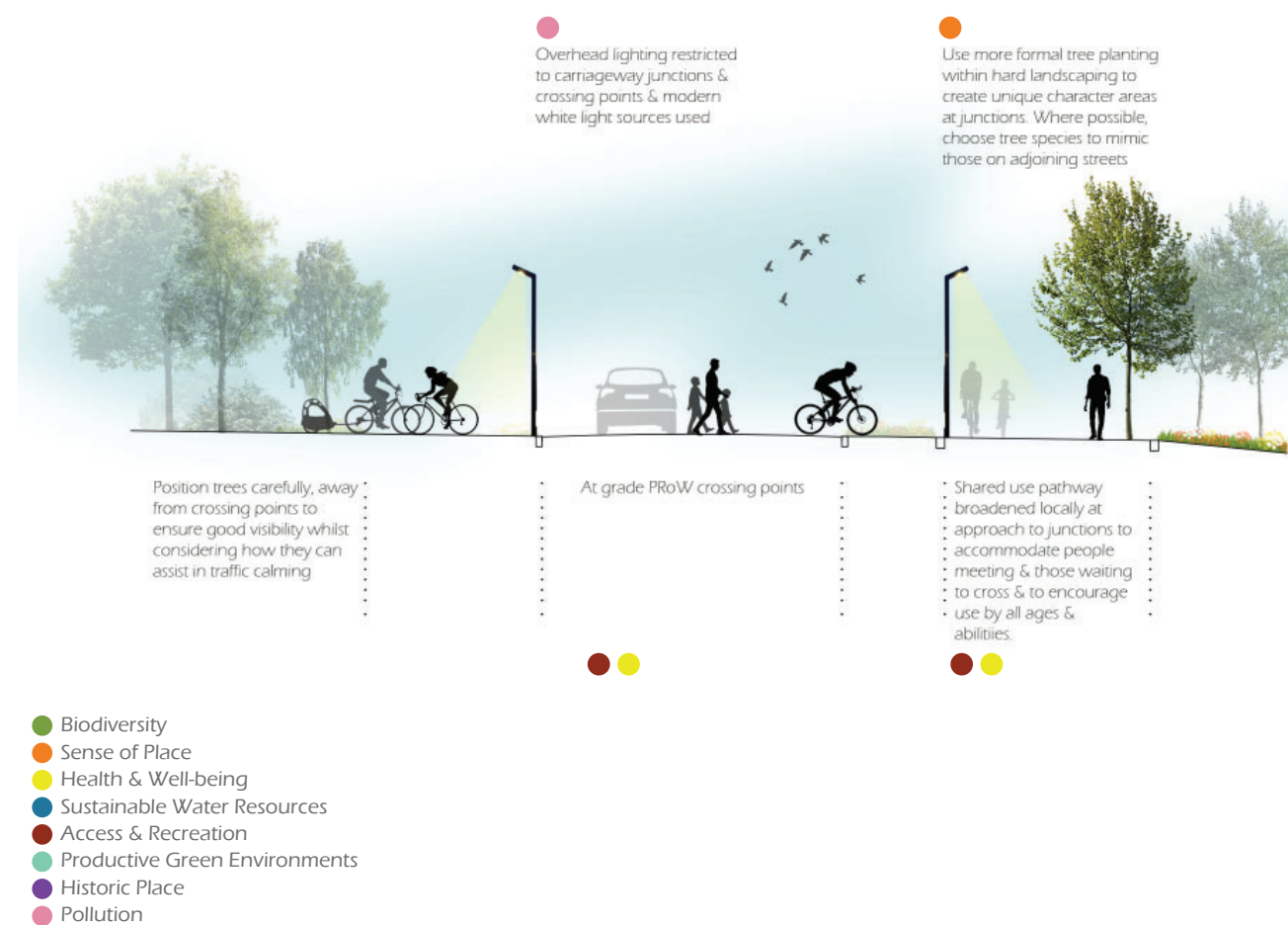
As outlined in Section 3 above, the key design opportunities in relation to Health and Well Being include:

- Ensure at-grade crossing points (for pedestrians, cyclists and equestrians) are located where existing PRoW are located, as well as ensuring connections into adjacent existing and proposed residential areas.
- Maximise the use of water in the landscape design.
- All along the route, high quality cycle parking should be provided, especially at nodes.
- Create pocket green spaces with seating along the route for people to rest & enjoy their environment.
- Pathways should be kept clear of street furniture and clutter with lighting kept adjacent to the kerb.
- The safety of the route should also be considered through the use of pedestrian scale lighting for the entirety of the route and maintaining a visual connection with neighbouring proposed residential areas to increase natural surveillance.

These are considered more fully below.

## Design Opportunity: Ensure at-grade crossing points are located where there are existing PRoW and connections to adjacent existing and proposed residential areas

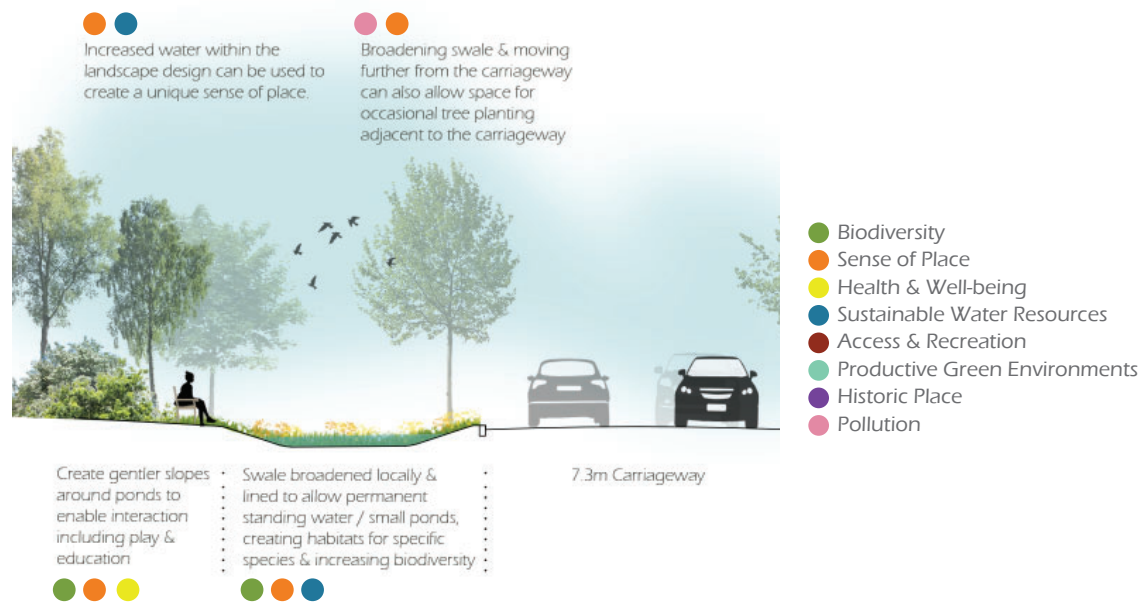
At grade crossing points will be created (for pedestrians, cyclists and equestrians) where existing PRoW are located as well as adjacent to existing and proposed residential areas and community facilities to provide access for all considering requirements of wheelchair users, and people with low mobility or impaired sight.





## Design Opportunity: Maximise the use of water in the landscape design and proposed residential areas

A diverse array of water features can help to create unique spaces for people to enjoy. Spaces should be designed to allow for people to sit and view the water, listen to moving water and watch the associated wildlife as well as spaces where people can interact with the water for example with gentler slopes to an area of a lined attenuation pond.



## Design Opportunity: Create pocket green spaces with seating along the route for people to rest & enjoy their environment

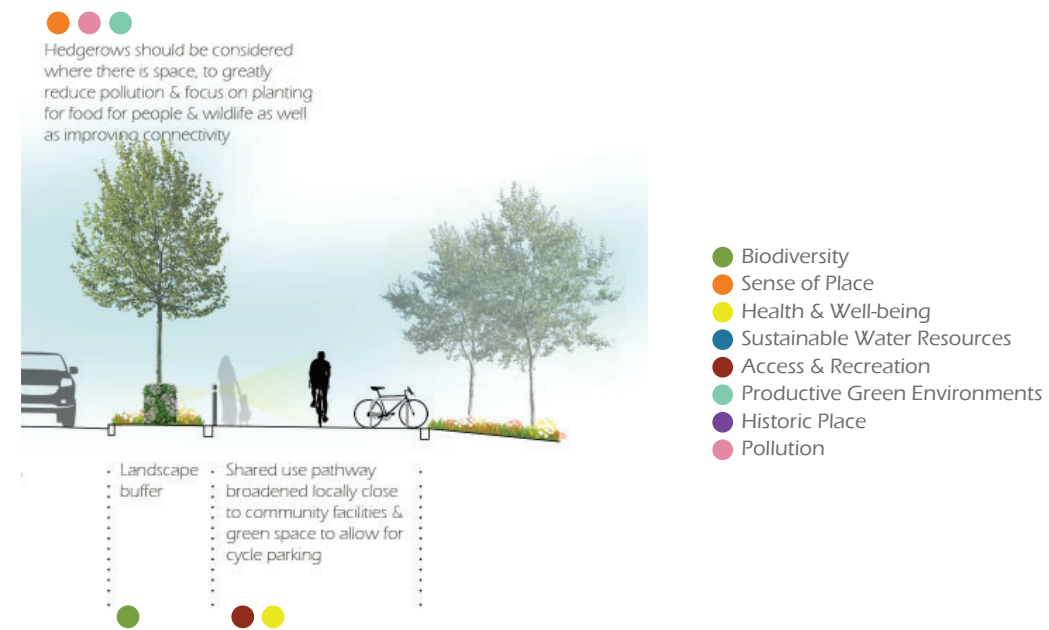
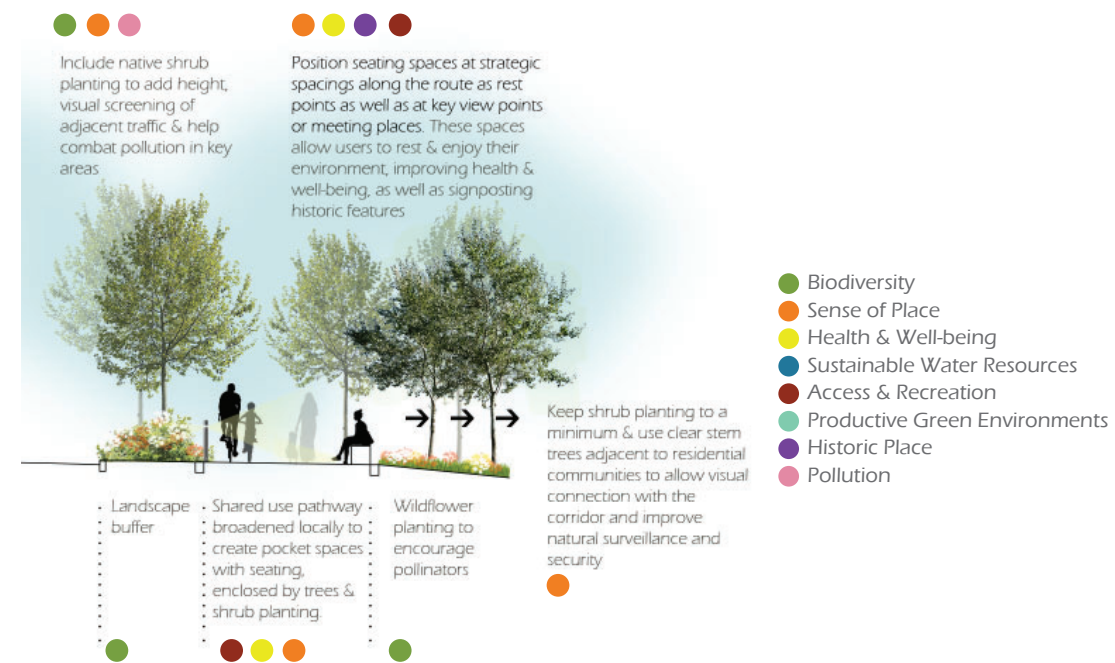
The creation of pocket green spaces will provide the opportunity for exercise, social interaction and play which will benefit adjacent residential communities and users of the Proposed Scheme. Where space allows green spaces should be adapted to fulfil a range of functions including responding to climate change resilience as well as edible landscapes.

## Design Opportunity: Pathways should be kept clear of street furniture and clutter

Shared pathways should be kept clear of street furniture and clutter minimising potential trip hazards and improving visibility and a sense of security and safety. Street furniture and lighting should be kept adjacent to the kerb and where possible opportunities should be explored to combined structures to improve the sense of openness.

## Design Opportunity: The safety of the route should be considered through the use of pedestrian scale lighting

Pedestrian scale lighting should be used for the entirety of the route with careful consideration given to light spill and glare whilst maintaining a visual connection with neighbouring proposed residential areas.



**5.0**

A29 Phase 1 Green Infrastructure  
Strategy Summary

## 5.0 A29 Phase 1 Green Infrastructure Strategy Summary

### Bring it all Together

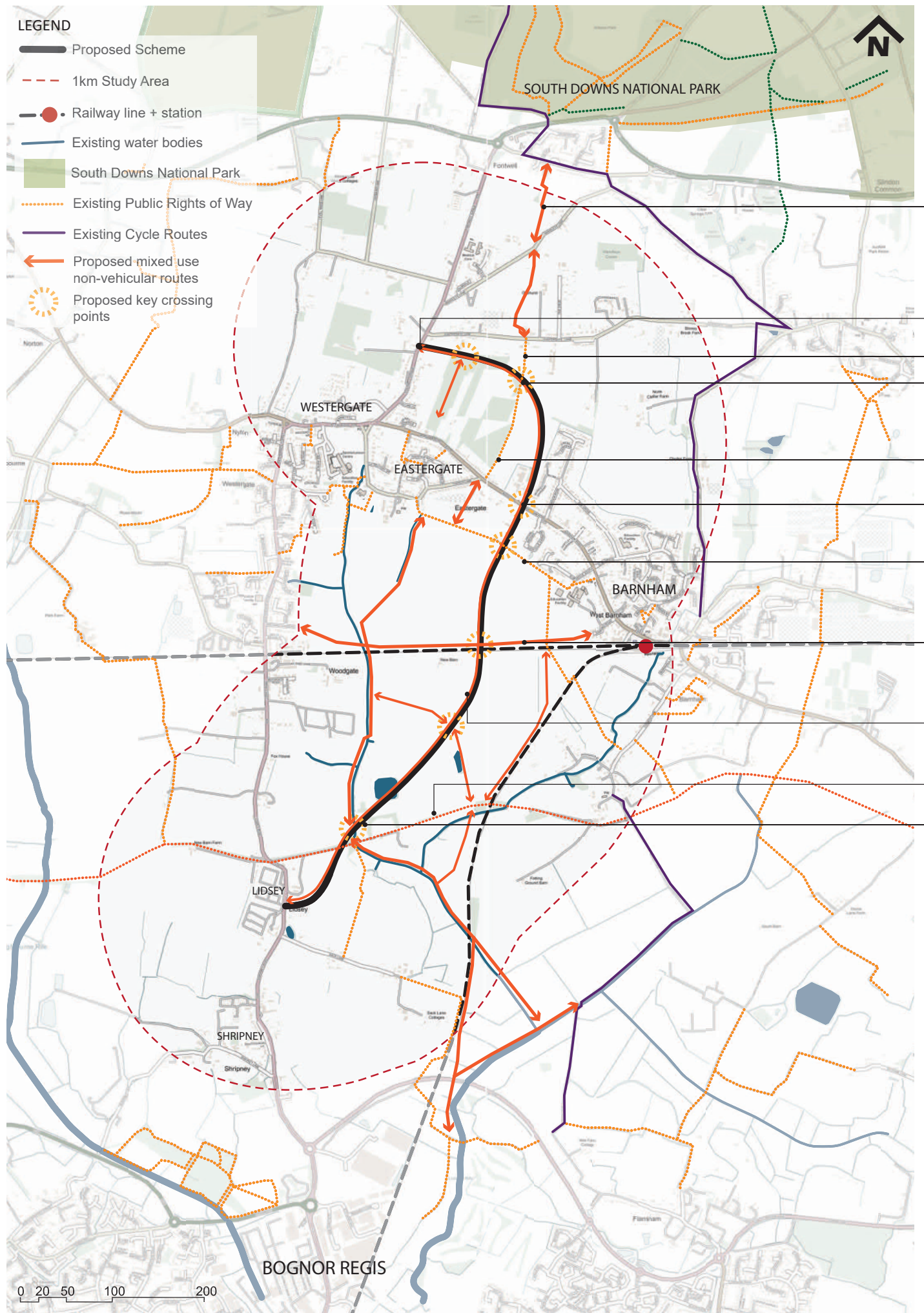
In summary the vision of the Proposed Scheme is to:

**‘Create a key GI corridor to link with or improve links to nearby assets. The GI corridor will be a multi-functional asset within the landscape, designed to maximise access and movement, biodiversity, sense of place, historic character, sustainable water resources and enhanced health and wellbeing.’**

The implementation of this vision is guided by the overarching objectives, many of which are drawn from the Arun GI Study and Bognor Regis GI Framework and the functions and design opportunities to be fulfilled through the detailed design of the Proposed Scheme as summarised in Table 5.1 below.

This table is supported by Figure 9 built environment design opportunities (Objective 1, 2, 3 and 8) and Figure 10 Natural environment design opportunities (covering Objective 4, 5, 6, 7 and 8).

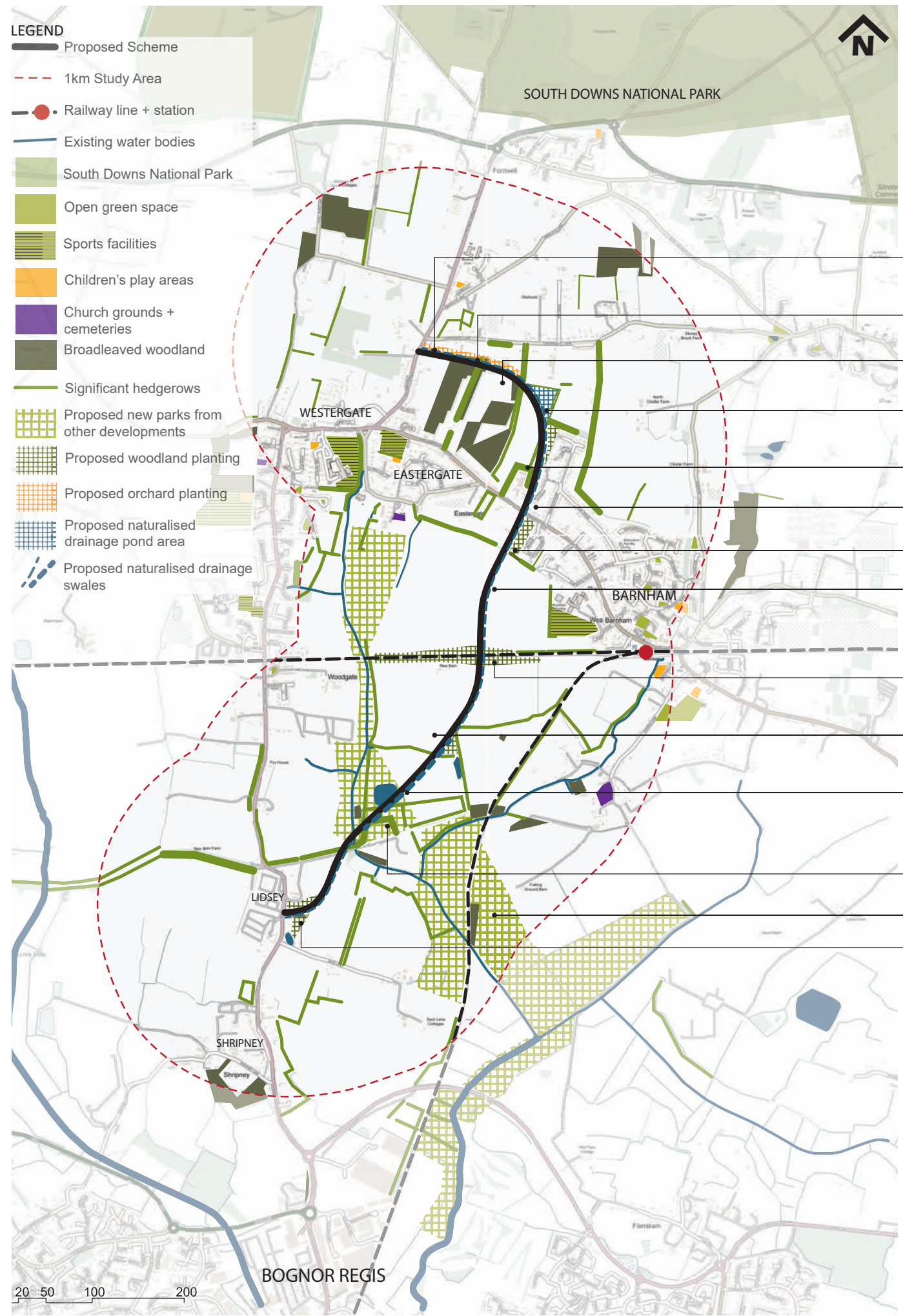




- Potential, long term off road connection to the National Park
- Create a safe, at grade crossing point for pedestrians to link in with new footpath access
- Broaden & resurface the existing PRoW as part of a strategic off road link connecting the National Park with the coast at Bognor Regis
- Create a safe, at grade crossing point with inviting, well signed entrances to encourage use of PRoW. In addition, the A29 footway should be broadened on approach to accommodate an increase of users
- Broaden and enhance the existing PRoW to make it suitable for all modes of non-motorised transport
- Create a pedestrian & cycle friendly junction with clear visibility. Increase hard landscaped footway areas to accommodate people waiting to cross.
- Broaden and enhance the existing important east west link to make it suitable for all modes of non-motorised transport. Create a safe, at grade crossing point with inviting, well signed entrances to encourage use of PRoW. In addition, the A29 footway should be broadened on approach to accommodate an increase of users
- Create a new east west link alongside the railway line, utilising landscape buffer to help to sustainably connect Westergate to Barnham / station. The link will also offer connections between Barnham residents & the proposed, valuable new greenspaces at Lidsey Wetland Park & Rife Valley Country Park
- Create a key non-motorised route along entirety of the Proposed Scheme
- Resurface existing old canal PRoW route & enhance its value for ecology and biodiversity through new native planting
- Create a distinctive new hub & crossing point to highlight the entrance to the historic canal route as well as potential new links to proposed greenspaces at Lidsey Wetland Park & Rife Valley Country Park

Figure 9. Built environment design opportunities





- Reflect on the local land use with orchard tree planting & provide an edible community resource for residents to enjoy & to encourage an appreciation of where our food comes from.
- Keep planting to the North of the corridor as native species in keeping with those found in the local countryside. This could include native edible species such as Elder and Hazel.
- Planting designed to connect into adjacent development parcels to aid connectivity, cohesion & help create active frontages
- Maximise drainage pond design, & partially line, to hold water & create a feature beneficial to biodiversity & wildlife. The space should also be designed for people, providing a space for people to interact with the water & to sit & enjoy it's natural qualities.
- Varied planting & tree spacing can help to slow traffic & aid traffic management along the Proposed Scheme
- Where space is restricted, combine physical noise barriers with native planting to improve noise & air pollution whilst providing a natural visual screen for adjacent residents
- Plant up left over parcels of land to create pockets of woodland habitat
- Use above ground drainage features for the entire length of the Proposed Scheme to create a sustainable means of managing water run-off whilst planting to create an attractive environment, improve biodiversity & create habitats. This will also act as a linear ecological corridor to aid movement of wildlife.
- Plant the embankments needed for the railway overbridge to create the start of a landscape buffer along the railway corridor. Planting will act to mitigate noise pollution whilst creating a linear ecological corridor & increasing biodiversity.
- Where space & levels allows, also add above ground drainage features to the footway side of the Proposed Scheme to create a varied, interesting environment for users & encourage an understanding into the importance of sustainable drainage & the value of water.
- Where space allows, lengths of drainage swale can be broadened & lined to create small areas of standing water which provide a variety of valuable habitats. These elements could be used as a feature of the scheme to connect with the Lidsey Wetland Park proposed to the south.
- Proposed location of Rife Valley Country park
- Proposed location of Lidsey Wetland Park
- Use native woodland planting to screen the Proposed Scheme to minimise it's effect on neighbouring properties & on the setting of the listed building at Lidsey

Figure 10. Natural environment design opportunities

**Table 5.1 Overarching Objectives, Functions and Design Opportunities**

Key Objectives	Function	Design and specific design opportunities
<p>Objective 1 – To establish an off road, shared pedestrian and cycling route for the length of the route.</p> <p>Objective 2 – To maximise pedestrian and cycling connectivity to the existing PRoW network, surrounding communities (both existing and future), transport nodes and existing green infrastructure assets.</p> <p>Objective 3 – To create nodes of functional, useable and quality greenspace along the main corridor which connect with green space in any new developments.</p>	<p><b>Access links and access to recreation</b></p> <p>Health and Well Being</p>	<p>New provision for footpaths, cycle paths and bridleways by including a path alongside the whole A29 Phase 1 route alignment.</p> <ul style="list-style-type: none"> <li>Active Travel opportunities: new paths.</li> <li>Variation in visual amenity and character along the Proposed Scheme.</li> </ul> <p>Maximise pedestrian and cycling connectivity to the existing PRoW network, GI assets and surrounding communities.</p> <ul style="list-style-type: none"> <li>Create improved links &amp; connections between existing GI assets and planting features.</li> <li>Maximise pedestrian and cycling connectivity to the existing PRoW network and surrounding communities.</li> <li>Provide sustainable links to key transport nodes.</li> <li>Create inclusive junctions that can accommodate pedestrians, cyclists and equestrians.</li> </ul>
<p>Objective 4 – To safeguard and expand sensitive habitats and species, and enrich biodiversity</p>	<p><b>Conserving and enhancing biodiversity</b></p> <p>Sense of Place / Historic Character</p> <p>Health and Well Being</p> <p>Productive Green Environment</p>	<p>Design for connectivity and value of habitats: woodland, hedgerow and ecological corridors.</p> <ul style="list-style-type: none"> <li>Manage/maintain boundary hedgerows, including 'gapping up' where necessary with varied species.</li> <li>Incorporate new hedgerow planting along the Proposed Scheme to connect to adjacent/existing features.</li> </ul> <p>Design for multifunctional use.</p> <ul style="list-style-type: none"> <li>Width of the Proposed Scheme.</li> <li>Separation of uses.</li> <li>Screen planting.</li> </ul> <p>Design for celebrating and protecting existing features.</p> <ul style="list-style-type: none"> <li>Traditional orchards.</li> <li>Hornbeam hedge.</li> <li>Mature trees.</li> </ul> <p>Design for maximising Biodiversity and Biodiversity Net Gain.</p> <ul style="list-style-type: none"> <li>Biodiversity Net Gain principles.</li> <li>Use of water management features.</li> <li>Native species.</li> <li>Pollinator Species.</li> </ul> <p>Design for appropriate management.</p> <ul style="list-style-type: none"> <li>Mowing regimes.</li> <li>Plant selection.</li> </ul>
<p>Objective 4 – To safeguard and expand sensitive habitats and species, and enrich biodiversity</p>	<p><b>Productive green environments</b></p> <p>Sense of Place / Historic Character</p> <p>Health and Well Being</p>	<p>Provide areas for local sustainable food as 'edible landscapes'.</p> <p>Retain/ enhance connections to productive landscapes.</p>

Key Objectives	Function	Design and specific design opportunities
<p>Objective 5 – To ensure SuDs are an integral part of the highways design and that above ground drainage features are designed to also improve biodiversity, create new habitats and provide usable public green space</p>	<p><b>Sustainable water resources</b></p> <p>Conserving and enhancing biodiversity</p> <p>Health and Well Being</p> <p>Sense of Place</p> <p>Productive Green Environment</p>	<p>Design sustainable, above ground drainage features based on SuDs principles.</p> <ul style="list-style-type: none"> <li>Design with trees to aid storm water management.</li> <li>Climate change adaptation - design for urban heating and cooling through use of water and planting.</li> </ul> <p>Design for biodiversity.</p> <ul style="list-style-type: none"> <li>Where space allows, lengths of drainage swale can be broadened &amp; lined to create small areas of standing water which provide a variety of valuable habitats. These elements could be used as a feature of the scheme to connect with the Lidsey Wetland Park proposed to the south.</li> </ul> <p>Design for the Community</p> <ul style="list-style-type: none"> <li>Provide 'space for water' for the community by designing SuDs features as usable public open space.</li> <li>Water features to be located adjacent to public paths, where possible, as visual (or physical) amenity features</li> </ul>
<p>Objective 6 – To put placemaking at the focus of the design and acknowledge the historic land use through the design</p>	<p><b>Sense of Place / Historic Character</b></p> <p>Health and Well Being</p> <p>Productive Green Environment</p>	<p>Put placemaking as the focus of the design to reinforce local character.</p> <p>Varied planting &amp; tree spacing can help to slow traffic &amp; aid traffic management along the Proposed Scheme</p> <p>Safeguard existing key habitats, ecological corridors and features to reinforce local character.</p> <p>Conserve and celebrate the character and cultural heritage of Eastergate.</p> <p>Vary the planting types and densities to enhance local character, including 'edible' planting. Reflect on the local land use with orchard tree planting &amp; provide an edible community resource for residents to enjoy &amp; to encourage an appreciation of where our food comes from.</p>
<p>Objective 7 – To moderate pollution levels associated with air, noise and light.</p>	<p><b>Pollution</b></p> <p>Sense of Place / Historic Character</p> <p>Health and Well Being</p>	<p>Use of planting as a means to improve air quality for users and residents in adjacent communities:</p> <ul style="list-style-type: none"> <li>Planting of trees and hedgerows / low level shrubs including evergreens.</li> <li>Retention of mature trees where possible.</li> </ul> <p>Minimise light pollution through the use of low level, directional lighting to minimise light spill and glare.</p> <ul style="list-style-type: none"> <li>Overhead lighting to the carriageway should be restricted to purely around junctions and crossing points, as is the practice for the existing A29.</li> <li>Use of modern white light sources that filter out blue or ultraviolet light to be used for lighting columns in these locations.</li> <li>The off-road pedestrian and cycle path along the Proposed Scheme should have pedestrian scale lighting (such as bollard style lighting) to create a safe environment whilst keeping light pollution to a minimum.</li> </ul> <p>Minimise noise levels:</p> <ul style="list-style-type: none"> <li>Consider the use of green acoustic barriers at the southern end of the Phase 1 Site where space is limited.</li> <li>Plant the embankments needed for the railway overbridge to create the start of a landscape buffer along the railway corridor. Planting will act to mitigate noise pollution whilst creating a linear ecological corridor &amp; increasing biodiversity.</li> </ul>

**6.0**

Reference



## 6.0 Reference Document

1. Green Infrastructure Guidance – Natural England
2. Adoption Arun Local Plan 2011-2031 (July 2018)– Arun – Arun District Council
3. Arundel, the 6 villages & Surrounding Area Plan for the Local Plan 2011-2031
4. National Character Area Profile: 126. South Coast Plain – Natural England
5. WSCC Adoptable Highway Drainage and SuDS - Guidance Note for Developers
6. WSCC Pollinator Action Plan
7. Breathing Better, a partnership approach to improving air quality in West Sussex
8. AECOM 2013. Water. People. Places - A guide for master planning sustainable drainage into developments - Lead Local Flood Authorities for the South East of England
9. Arun Green Infrastructure Study – LUC - 2012
10. Arun Green Infrastructure Network map
11. Eastergate Green Infrastructure Network map
12. Barnham Green Infrastructure Network map
13. Walberton Green Infrastructure Network map
14. Arun District Council open space sport and recreation study



**Appendix A**  
Policy Context

## National Policy

There is increasing Government acknowledgement that GI is essential in planning a sustainable future through increased policy support, as shown in:

- National Planning Policy Framework.<sup>37</sup>
- National Planning Practice Guidance.<sup>38</sup>
- Natural Environment White Paper.<sup>39</sup>

The NPPF states that GI is relevant in the planning processes for: promoting healthy and safe communities; promoting sustainable transport; meeting the challenge of climate change, flooding and coastal change; and conserving and enhancing the natural environment. Key guidance states:

- Planning policies should focus on promoting social interaction through spaces which encourage opportunities for meeting people; providing spaces and pedestrian routes which are safe, accessible and legible; and enabling healthy lifestyles through provisions of safe and accessible green infrastructure and provisions to encourage walking and cycling.
- Planning policies should provide for high quality walking and cycling networks and supporting facilities such as cycle parking (drawing on Local Cycling and Walking Infrastructure Plans).
- Developments should take a proactive approach to mitigating and adapting to climate change, considering flood risk / water management, biodiversity and landscapes, and the risk of overheating from rising temperatures.
- Development plans should take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure, in part to improve air quality.
- Encourage net gains for biodiversity to deliver measurable improvements for biodiversity by creating or enhancing habitats in association with development.

National Planning Practice Guidance that accompanies and supports the delivery of the NPPF states that GI should be considered, “at the earliest stages of development proposals, as an integral part of development and infrastructure provision, and taking into account existing natural assets and the most suitable locations and types of new provision”<sup>41</sup>.

## Regional Policy

### West Sussex Plan 2017 - 2022

WSCC, through the West Sussex Plan, outlines its strategy to concentrate efforts on the political priorities for all communities focussed on five key outcome priorities:

- Best start in life.
- A prosperous place.
- A strong, safe and sustainable place.
- Independence for later life.
- A council that works for the community<sup>42</sup>.

### West Sussex Transport Plan 2011-2026

The Transport Plan sets out a strategy for maintaining and investing in transport throughout the West Sussex area. It covers all modes of transport and recognises the need for increased active travel through walkers, cyclists and horse riders. The primary aim of the Transport Plan is to improve the quality of life within West Sussex by:

- Promoting economic growth.
- Tackling climate change.
- Providing access to services.
- Employment and housing.
- And improving safety, security and health<sup>43</sup>.

<sup>37</sup> Ministry of Housing, Communities and Local Government, 2019, National Planning Policy Framework

<sup>38</sup> Ministry of Housing, Communities and Local Government, 2019, National Planning Practice Guidance

<sup>39</sup> Department for Environment, Food & Rural Affairs, 2012, Natural Environment White Paper (Revised October 2014)

<sup>40</sup> NPPF Planning Practice Guidance: Paragraph: 008 Reference ID: 8-008-20190721 (Revision date: 21/07/2019)

<sup>41</sup> West Sussex County Council, 2017, West Sussex Plan 2017-2022

<sup>42</sup> West Sussex County Council, 2011, West Sussex Transport Plan 2011-2026

### West Sussex Walking and Cycling Strategy 2016–2026

The West Sussex Walking and Cycling Strategy sets out the aims and objectives for walking and cycling and the Council's priorities for funding, reflecting the Council's overall walking and cycling aspirations.

The Strategy provides guidance in support of prioritising walking and cycling infrastructure in new development and the framework through which local interest and community groups can make suggestions for the development of walking and cycling improvements and support those seeking funding for specific projects<sup>43</sup>.

### West Sussex Rights of Way Management Plan 2018-2028

The Plan sets out how the Council plans to work with partners to manage the Public Rights of Way (PRoW) network and provides the framework for local communities to contribute to management and development of the PRoW network<sup>44</sup>.

## Local Policy

The Arun Local Plan 2011-2031<sup>45</sup> as detailed in Section 2 seeks to conserve and enhance distinctive or important landscape, arboricultural and biodiversity features. Of particular interest to this Strategy is how the Proposed Scheme fits into the local landscape setting. Strategic objectives for Settlement Structure, GI and Landscape set out within the Local Plan include protecting and enhancing the district's '*outstanding landscape, countryside, coastline, historic, built and archaeological environment, as well as the setting for the South Downs National Park*'.

The Local Plan identifies the importance of maintaining the distinctive settlement pattern of the Arun District. The importance of retaining settlement structure is recognised along with the value of gaps between settlements, 'preventing the coalescence of individual settlements and for retaining the separate identity and amenity of settlements' and maintaining the district's multifunctional GI network.

The following outlines the policy related to Gaps Between Settlements for the Arun District:

### Policy SD SP3

#### Gaps Between Settlements

The generally open and undeveloped nature of the following gaps between settlements, as identified on the Policies Maps will be protected to prevent coalescence and retain their separate identity:

- Worthing to Ferring.
- East Preston to Ferring.
- Littlehampton and Middleton-on-Sea.
- Pagham to Selsey.
- Bognor Regis to Chichester.
- Arundel to Littlehampton.
- Angmering to Rustington/East Preston.
- Angmering to Worthing.
- Felpham to Bognor Regis.
- Barnham to Walberton.

Development will only be permitted within the gaps if:

- a. It would not undermine the physical and/or visual separation of settlements.
- b. It would not compromise the integrity of the gap, either individually or cumulatively with other existing or proposed development.
- c. It cannot be located elsewhere.
- d. It maintains the character of the undeveloped coast.
- e. or, if a subsequent DPD or Neighbourhood Plan deems it appropriate through an allocation.

<sup>43</sup> West Sussex County Council, 2017, West Sussex Walking and Cycling Strategy 2016–2026 (Revised April 2017)

<sup>44</sup> West Sussex County Council, 2018, West Sussex Rights of Way Management Plan 2018-2028

<sup>45</sup> Arun District Council, 2018, Arun Local Plan 2011-2031 (Adopted July 2018)

**Policy ENV DM5**Development and Biodiversity

Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement.

Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person. All developments shall have regard to Natural England's standing advice for protected species.

## Supplementary Planning Documents, Guidance and Existing Strategy

In addition to the above documents the following Supplementary Planning Documents, guidance and strategies prepared at a County to Neighbourhood level are relevant to the GI Strategy.

### West Sussex County Council: Breathing Better

The Breathing Better report by WSCC states that air pollution is the top environmental risk to human health in the UK and the fourth greatest threat to public health after cancer, heart disease and obesity.

The report recognises that *"[t]rees and vegetation absorb carbon dioxide (the main greenhouse gas) and filter, absorb and reduce pollutant gasses including ozone, sulphur dioxide, carbon monoxide and nitrogen dioxide as well as producing oxygen."* It goes on to add that the benefits of GI are well established and in addition to improving air quality they are also shown to improve water quality, reduce flooding, improve health and well being, increase property values, increase biodiversity and create a resilient environment.

Actions to improve air quality include traffic management, changes in speed limits, sustainable transport infrastructure and advocating a behaviour change by using alternative modes of transport.

### West Sussex County Council: Adoptable Highway Drainage and SuDS, Guidance Note for Developers

This guidance note states that WSCC has a preference for 'open, above ground drainage systems such as storage ponds, balancing ponds, retention & infiltration basins, swales, ditches and infiltration strips' and highlights the value of SuDS, not only to manage surface water and reducing flood risks, but also in improving water quality and benefitting the local environment.

### West Sussex County Council: Pollinator Action Plan 2019-2022 (December 2018)

The Pollinator Action Plan<sup>46</sup> was produced to acknowledge the importance of pollinators to the health of our natural environment and to raise awareness of the plight of pollinators within the region. Its aim is to ensure that the Council and residents, businesses and landowners have the information needed to act to protect and increase pollinator populations.

### ADC Open Space Sport and Recreation Study (PMP, March 2019)

This study analyses and assesses all open space, sport and recreational provision in the district as well as need, identifying any surpluses and deficiencies in provision based on quantity, quality and accessibility. The study concludes with recommendations to address the key findings and drive future policy.

### Water. People. Place. A Guide for Masterplanning Sustainable Drainage into Developments

This guidance outlines the process for integrating sustainable drainage systems (SuDS) into the development masterplans. It highlights that early consideration of the movement of water, and its interaction with space, in the design process is crucial to the success of SuDS and in maximising the wider benefits of SuDS.

### Barnham and Eastergate Neighbourhood Plan 2014-2029

This Neighbourhood Plan sets out a vision for the area that reflects the thoughts and feelings of the local people. It outlines objectives on key identified themes including circulation, business, tourism, community, leisure and well-being, the environment, and design quality of physical structures. It builds on current and future planned activity and outlines what the Parish Councils and their partners will work towards.

### Arun Green Infrastructure Study

The Arun Green Infrastructure Study (2012) provides a study of GI within the district further details are provided in Section 2.

### Bognor Regis Green Infrastructure Framework

The Bognor Regis GI Framework provides a vision for GI investment between Bognor Regis and the SDNP, focussing on how the area can deliver resilience to the effects of climate change in the region, further details of the study are covered in Section 2.

### Barnham - Eastergate - Westergate Growth Area

The Barnham-Eastergate-Westergate Growth Area is an alternative growth area to 'Bognor Regis Eco Quarter' of a similar size. The Study sets out the pressures on GI, key characteristics, and sensitivities of the area and provides landscape recommendations detail Section 2

46 West Sussex County Council, 2018, Pollinator Action Plan 2019-2022



